

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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STANDARD FOR FRESH GARLIC

CXS 337-2020

Adopted in 2020.

1. SCOPE

The purpose of the standard is to define the quality requirements for garlic after preparation and packaging. However, if 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.

For the purposes of this standard 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

2.1 This Standard applies to bulbs¹ of commercial varieties of fresh garlic grown from *Allium sativum L.*, of the *Alliaceae* family, with or without the skin. When presented with skin, a certain degree of external dryness can be observed without clove or cloves freshness detriment, to be supplied fresh to the consumer, after preparation and packaging.

2.2 Fresh garlic constituted of several cloves and the garlic known as Solo garlic, constituted of a single clove are included. Green garlic with full leaves, undeveloped cloves and garlic for industrial processing are excluded. The following degrees of dryness of outer skin for fresh garlic are covered by the Standard:

- Fresh garlic: produce which preserves its moisture and turgidity in the stem, and with the outer skin of the bulb soft and flexible.
- Semi-dry garlic: produce with the stem and outer skin (foliage and cataphylls) of the bulb not completely dry.
- Dry garlic: produce in which the stem, outer skin of the bulb (foliage and cataphylls) and the skin surrounding each clove are completely dry.

3. PROVISIONS CONCERNING QUALITY

3.1 Minimum Requirements

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

- intact; covered with outer skin, where applicable;
- 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 of pests² and damage caused by them 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;
- free of damage caused by low and/or high temperatures;
- free of visible shoots;
- practically free of roots.
- For dry garlic, the roots must be trimmed close to the base of the bulb. if presented with cut stems the length should not exceed 3 cm. There shall be no length requirement for stems of braided garlic.

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

- to withstand transportation and handling; and

¹ Bulb: head covered by a wrapper similar to a very thin paper and it confirmed by bulbil, belonging to the genus and species of *Allium Sativum L.*

Tooth: They are bulbils gathered at their base, forming what is known as bulb each bulbil is wrapped in a white robe, sometimes something reddish, membranous, transparent and very thin.

² 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).

- to arrive in satisfactory condition at the place of destination.

3.1.1 **Minimum maturity requirements**

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

3.2 **Classification**

Garlic is classified into three classes defined below:

3.2.1 **“Extra” Class**

Garlic 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. The bulbs must be of regular shape and [properly cleaned]. The cloves must be compact.

3.2.2 **Class I**

Garlic in this class must be of good quality. They must be characteristic of the variety and/or commercial type. The cloves must be reasonably compact. However, slight defects 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 tears in the outer skin of the bulb; and
- a slight defect in shape.

3.2.3 **Class II**

This class includes garlic, which does not qualify for inclusion in the higher classes, but satisfy the minimum requirements specified in Section 3.1 above.

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

- slight tears on the external skin or missing parts of the outer skin of the bulb not exceeding the half of the surface;
- slight staining on the outer skin not exceeding more than half of the bulb surface;
- no more than two damaged cloves;
- healed injuries;
- slight bruises;
- defects in shape;
- no more than three cloves, or one fifth of the total number of cloves in a bulb may be missing, whichever is lower.

4. PROVISIONS CONCERNING SIZING

Garlic may be sized by diameter (minimum diameter or diameter range) or in accordance with existing trading practices. When sized in accordance with existing trade practices, the package must be labelled with size and the method used. The following methods are guides and may be used on an optional basis. This table is not applicable to solo garlic:

Size Code	Range of diameter in mm
A	75
B	>70-75
C	>65-70
D	>60-65
E	>55-60
F	>50-55
G	>45-50
H	>40-45
I	>35-40
J	>30-35
K	>25-30
L	>20-25
M	>15-20
N	≤ 15

5. PROVISIONS CONCERNING TOLERANCES

Tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the requirements of the class indicated.

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 by number or weight of bulbs not satisfying the requirements of the class, but meeting those of Class I. Within this tolerance not more than 1% in total may consist of produce satisfying the requirements of Class II.

5.1.2 Class I

Ten percent by number or weight of bulbs not satisfying the requirements of the class, but meeting those of Class II. Within this tolerance not more than 1% in total may consist of produce satisfying neither the requirements of Class II nor the minimum requirements, or of produce affected by decay.

In addition, not more than 1% by weight of bulbs may have cloves with externally visible sprouts.

5.1.3 Class II

Ten percent by number or weight of bulbs satisfying neither the requirements of the class nor the minimum requirements. Within this tolerance not more than 2% in total may consist of produce affected by decay.

In addition, not more than 5% by weight of bulbs may have cloves with externally visible sprouts

5.2 Size Tolerances

For all classes, ten percent by number or weight of bulbs not corresponding to the size indicated on the package.

6. PROVISIONS CONCERNING PRESENTATION

6.1 Uniformity

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

6.2 Packaging

The garlic must be packed in such a way as to protect the produce properly. The materials used inside the package must be clean and of food grade 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 labeling has been done with non-toxic ink or glue.

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

7. PROVISIONS CONCERNING MARKING OR LABELLING

7.1 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:

7.1.1 Name of Produce

If the produce is not visible from the outside, each package shall be labelled as to the name of the produce ("garlic" and/or "fresh garlic", "semi-dry garlic", "dry garlic") and the name of the variety.

7.1.2 Origin of Produce

Country of origin³ and, optionally, district where grown, or national, regional or local place name.

7.2 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, and attached in a visible position inside the transport vehicle, unless the document is replaced by an electronic solution. In that case the identification must be machine readable and easily accessible.

7.2.1 Identification

Name and address of exporter, packer and/or dispatcher. Identification code (optional).⁴

7.2.2 Name of Produce

Name of the produce if the contents are not visible from the outside, such as "garlic", "fresh garlic", "semi-dry garlic", "dry garlic" or "solo garlic", where appropriate;

Name of the variety or commercial type (optional).

7.2.3 Origin of Produce

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

7.2.4 Commercial Identification

- class;
- size expressed as minimum and maximum diameters of the bulb or size code;
- net weight (optional).

³ The full or a commonly used name should be indicated.

⁴ 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.

7.2.5 Official Inspection Mark (optional)**8. CONTAMINANTS**

- 8.1** The produce covered by this Standard shall comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission
- 8.2** 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).

9. HYGIENE

- 9.1** 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.
- 9.2** 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).