

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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STANDARD FOR ONIONS AND SHALLOTS

CXS 348-2022

Adopted in 2022

1. SCOPE

The purpose of the standard is to define the quality requirements for onions and shallots after preparation and packaging. When it is applied at stages following packaging, onions and shallots 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 onion bulbs of varieties grown from *Allium cepa* L. Cepa group and shallot bulbs grown from *Allium cepa* Aggregatum group and grey shallots grown from *Allium oschaninii* O Fedtsch, to be supplied fresh to the consumer. Green onions and green shallots with full leaves as well as onions and shallots intended for industrial processing are excluded.

- Onions and shallots may be of the following shapes: round, oval/elongated, long or demi-long.
- Onions and shallots shall have skin colour characteristics of the variety, including white, purple, cream, pink, red, grey, yellow, or brown.

3. PROVISIONS CONCERNING QUALITY

3.1 Minimum requirements

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

- whole;
- firm;
- 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 from pests;ⁱ
- free from damage caused by pests affecting the flesh;
- free from hollow and/or tough pseudostems;
- free from visible shoot growth;
- free of abnormal external moisture excluding condensation following removal from cold storage;
- free of any foreign smell and/or taste;
- free from damage caused by low and/or high temperature;¹
- sufficiently dry for the intended use (in the case of onions for storing, at least the first two outer layers of skins and the pseudostem must be fully dried); and
- the pseudostems of onions and shallots must be twisted or clean cut and must not exceed 6 cm in length; except for onions or shallots presented in strings that must be braided with their own stems and tied with string, raffia or any other appropriate material.

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

3.1.1 *Minimum maturity requirements*

Onions and shallots shall be sufficiently developed and must have reached an appropriate degree of development in accordance with criteria proper to variety and/or commercial type and to the area in which they are grown. They must be firm, not soft or spongy and present outer layers of skin that are dry and papery.

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

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

3.2 *Classification*

Onions and shallots may be classified into three classes defined below:

3.2.1 *Extra class*

Onions and shallots in this class must be of superior quality. They must be characteristic of the variety and/or commercial type. 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 the presentation of the package.

For shallots, double or triples or more bulbs are not considered as a defect.

The following slight defects, however, may be allowed:

- a very slight defect in shape;
- very slight defects in colouring;
- very light staining, provided it does not cover more than one fifth of the bulb's surface;
- for onions, bulbs should be free from splits and/or double centres and more; and
- root tufts shall be allowed:
 - for grey shallots; and
 - for onions and other shallots harvested before complete maturity.

3.2.2 *Class I*

Onions and shallots in this class must be of good quality and characteristics of the variety and/or the commercial type.

For shallots, double or triples or more bulbs are not considered as a defect.

The following slight defects, however, may be allowed, provided that they 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;
- superficial cracks in and partial absence of the outer skins, provided the flesh is protected;
- light staining, provided it does not cover more than one third of the bulb's surface;
- for onions, double and/or three bulbs and more;
- for onions, slight glassiness/translucence not exceeding the outer fleshy ring;
- root tufts shall be allowed:
 - for grey shallots;
 - for onions and other shallots harvested before complete maturity; and
- practically free of sprouted onions.

3.2.3 Class II

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

For shallots, double or triples or more bulbs are not considered as a defect.

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

- defects in shape;
- defects in colouring;
- slight bruising;
- healed mechanical damage;
- root tufts;
- stains, provided they do not cover more than one half the bulb's surface;
- cracks in the outer skins and partial absence of the skins on a maximum of one third of the bulb's surface, provided the flesh is not damaged; and
- for onions, slight glassiness/translucence not exceeding the two outer fleshy rings;
- for onions, double and/or three bulbs and more; and
- practically free of sprouted onions.

4. PROVISIONS CONCERNING SIZING

4.1 Onions and shallots may be sized by the maximum diameter of the equatorial section in accordance with existing trade practices. When sized in accordance with existing trade practices, the package must be labelled with the size and method used. The following sizing provisions are a guide and may be used:

(a) Onions:

The minimum diameter shall be 10 mm.

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

- 10 mm where the diameter of the smallest onion is 25 mm and over but under 40 mm;
- 20 mm where the diameter of the smallest onion is 40 mm and over but under 70 mm; and
- 30 mm where the diameter of the smallest onion is 70 mm or over.

(b) Shallots:

The minimum diameter shall be:

- 10 mm for all shallots.

The maximum diameter shall be:

- 55 mm for round shallots; and
- 60 mm for demi-long and long shallots.

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

- 3 mm where the diameter of the smallest bulb is 10 mm and over but under 15 mm;
- 5 mm where the diameter of the smallest bulb is 15 mm and over but under 25 mm;
- 10 mm where the diameter of the smallest bulb is 25 mm and over but under 40 mm; and
- 15 mm where the diameter of the smallest bulb is 40 mm or over.

5. PROVISIONS CONCERNING TOLERANCES

5.1 Quality tolerances

At all marketing stages, tolerances in respect of quality shall be allowed in each lot for produce not satisfying the requirements of the class indicated. Produce that fails conformity assessment, may be allowed to be re-sorted and brought into conformity in accordance with the relevant provisions in the *Guidelines for Food Import Control Systems* (CXG 47-2003).²

5.1.1 Extra class

Five percent by number or weight, of onions and shallots not satisfying the requirements of the class, but meeting those of class I is allowed. Within this tolerance there is 1 percent for decay, soft rot and/or internal breakdown.

5.1.2 Class I

Ten percent, by number or weight, of onions and shallots not satisfying the requirements of the class, but meeting those of class II is allowed. Within this tolerance there is 1 percent for decay, soft rot and/or internal breakdown.

In addition, 4 percent, by number or weight, of firm bulbs may present externally visible shoot growth not exceeding 1 cm.

5.1.3 Class II

Ten percent, by number or weight, of onions and shallots satisfying neither the requirements of the class nor the minimum requirements are allowed. Within this tolerance there is 2 percent for decay, soft rot and/or internal breakdown.

In addition, 10 percent, by number or weight, of firm bulbs may present externally visible shoot growth not exceeding 1.0 cm.

5.2 Size tolerances

For all classes, (if sized), 10 percent, by number or weight of onions and shallots not corresponding to the size indicated on the package.

6. PROVISIONS CONCERNING PRESENTATION

6.1 Uniformity

The contents of each package or lot of produce presented in bulk in the transport vehicle or compartment thereof must be uniform and contain only onions or shallots of the same origin, variety or commercial type, quality, and size.

However, a mixture of onions or shallots of distinctly different commercial types and/or colours may be packed together in a consumer package, provided they are uniform in quality and, for each commercial type and/or colour concerned, in origin. However, in case of those mixtures, uniformity in size is not required.

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

Onions and shallots 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.

Onions and shallots may be presented with tops braided or interlaced on strings. Onions and shallots shall be packed in each package in compliance with the appropriate section of the *Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables* (CXC 44-1995).³

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 onions and shallots.

Packages 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 Pre-packaged Foods* (CXS 1-1985),⁴ 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 (“onions”, “shallots” as defined in Section 2 – Definition of produce) and may be labelled as to name of the variety and/or commercial type.

7.1.2 Origin of produce

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

In the case of a mixture of distinctly different varieties or commercial types of onions or shallots of different origins, the indication of the country of origin shall appear next to the name of the variety, commercial type and/or colour concerned.

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)⁵, in addition the following 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 the produce

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

In the case of a mixture of distinctly different commercial types and/or colours of onions or shallots of different origins, the indication of each country of origin shall appear next to the name of the commercial types and/or colours concerned.

7.2.2 Commercial specifications

- class;
- variety and/or commercial type (optional); and
- size (if sized) expressed as minimum and maximum diameters or in accordance with the method used.

7.2.3 Official inspection mark (optional)

8. FOOD ADDITIVES

No food additives are permitted in onions and shallots.

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).⁶

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),⁷ the *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CXC 53-2003),⁸ and other relevant Codex texts such as codes of hygienic practice and codes of practice.

ⁱⁱ The full or commonly used name should be indicated.

ⁱⁱⁱ See note ii above.

- 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).⁹

NOTES

¹ FAO and WHO. 2023. *Definition of terms for application in the layout for Codex Standards for Fresh Fruits and Vegetables*. Rome. https://www.fao.org/fileadmin/user_upload/codexalimentarius/committee/docs/INF_CCFFV_8e.pdf

² FAO and WHO. 2003. *Guidelines for Food Import Control Systems*. Codex Alimentarius Guideline, No. CXG 47-2003. Codex Alimentarius Commission. Rome.

³ FAO and WHO. 1995. *Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables*. Codex Alimentarius Code of Practice, No. CXC 44-1995. Codex Alimentarius Commission. Rome.

⁴ FAO and WHO. 1985. *General Standard for the Labelling of Pre-packaged Foods*. Codex Alimentarius Standard, No. CXS 1-1985. Codex Alimentarius Commission. Rome.

⁵ FAO and WHO. 2021. *General Standard for the Labelling of Non-Retail Containers of Foods*. Codex Alimentarius Standard, No. CXS 346-2021. Codex Alimentarius Commission. Rome.

⁶ FAO and WHO. 1995. *General Standard for Contaminants and Toxins in Food and Feed*. Codex Alimentarius Standard, No. CXS 193-1995. Codex Alimentarius Commission. Rome.

⁷ FAO and WHO. 1969. *General Principles of Food Hygiene*. Codex Alimentarius Code of Practice, No. CXC 1-1969. Codex Alimentarius Commission. Rome.

⁸ FAO and WHO. 2003. *Code of Hygienic Practice for Fresh Fruits and Vegetables*. Codex Alimentarius Code of Practice, No. CXC 53-2003. Codex Alimentarius Commission. Rome.

⁹ FAO and WHO. 1997. *Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods*. Codex Alimentarius Guideline, No. CXG 21-1997. Codex Alimentarius Commission. Rome.