

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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STANDARD FOR WARE POTATOES

CXS 339-2020

Adopted in 2020.

1. SCOPE

The purpose of the Standard is to define the quality requirements for ware potatoes after preparation (e.g. brushing and/or washing) and packaging. When applied at stages following packaging, ware potatoes 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 varieties of ware potato grown from *Solanum tuberosum* L., of the *Solanaceae* family, to be supplied fresh to the consumer, after preparation and packaging. Ware potatoes for industrial processing and early potatoes¹ are excluded.

3. PROVISIONS CONCERNING QUALITY

3.1 Minimum Requirements

Subject to the tolerances allowed, the ware potatoes must be:

- intact;
- sound; produce affected by rotting or deterioration, which makes it unfit for consumption is excluded
- fresh in appearance and firm;
- clean and practically free of any visible foreign matter²;
- practically free from pests³;
- practically free from damage caused by pests;
- free of abnormal external moisture, excluding condensation following removal from cold storage;
- free of any foreign smell;
- free of damage caused by low or high temperature;
- free from sprouting; i.e. sprouts may not be longer than 3mm in length
- free of defects affecting the appearance, keeping quality and presentation in the package, such as:
 - Green colouration; pale green flush exceeding one eighth of the surface area;
 - brown stains;
 - cracks cuts, , bruises or roughness exceeding 4 mm in depth;
 - serious deformities;
 - grey, blue or black sub-epidermal stains; exceeding 5 mm in depth;
 - hollow or black hearts and other internal defects;
 - deep common potato scab and powdery potato scab³, of a depth of 2 mm or more
 - superficial common potato scab, i.e. scab spots in all must not extend over more than a quarter of the surface of the tuber.

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

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

¹ Early potatoes means potatoes harvested before they are completely mature, marketed immediately but could not be stored and whose skin is not completely cured so can be easily removed without peeling

² Visible foreign matter excludes visual indicators of treatment with sprout inhibitors

³ Provisions for pests and damage caused by 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*

Ware potatoes must be sufficiently developed with cured skin, with account being taken of the characteristics of the variety and/or commercial type and the area in which they are grown.

3.2 **Classification**

Classification of ware potatoes is optional. When classified, the classification is done in accordance with Section 5 – Provisions concerning Tolerances, ware potatoes are classified into the following classes.

- “Extra” Class, Class I and Class II.

4. **PROVISIONS CONCERNING SIZING**

Ware potatoes may be sized by diameter, count or weight; or in accordance with trading practices. When sized in accordance with trading practices, the package must be labelled with the size and method used.

When size is determined by the equatorial diameter (means the maximum distance taken from the right angle on the largest axis of the tuber) of the ware potato (in mm) in accordance with the following table that can be used as a guide in an optional way:

Size Code	Equatorial Diameter in mm
A(Large)	more than 80
B(Round)	35-80
C(Long)	25-75
D(Small)	18-24

However, uniformity in size in sales packages up to 5 kg net weight may be restricted to a maximum of 30 mm between the smallest and the largest tuber.

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 Systems* (CXG 47-2003).

5.1 Quality Tolerances³

S.No.	Quality Tolerances	Percentage of defective produce, by number or weight		
		Extra Class	Class I	Class II
1	(i) Total Tolerances for ware potatoes not satisfying the minimum requirements including defects (d), of which no more than:	5	10	10
	(a) Frozen, decay, soft rot and/or internal breakdown.	1	1	2
	(b) Extraneous matter	0.25	0.50	0.50
	(c) Soil	0.25	0.25	0.25
	(d) Defects: <ul style="list-style-type: none"> • cuts • bruises or roughness • Grey, blue or black sub-epidermal stains; > 5 mm deep • Deep common potato scab and powdery potato scab, > 2 mm deep. • superficial common potato scab > 25% of surface • Sprouts >3mm • Green coloration >1/8 of the surface area or not exceeding 2mm in depth; 			
2	Additional tolerances			
	(a) Produce belonging to other varieties than marked	2	2	2
	(b) Size Tolerances-off size from what is indicated/marketed	10	10	10

Note: The total of (a), (b), (c) and (d) shall not exceed the limit given in (i). Where the product is not classified the tolerances for Class II apply.

6. PROVISIONS CONCERNING PRESENTATION

6.1 Uniformity

The contents of each package (or lot for produce presented in the bulk transport vehicle) must be uniform and contain only ware potatoes of the same origin, variety or commercial type, quality, size (if sized) and optionally, cooking type (if indicated).

The visible part of the contents of the package (or lot for produce presented in the bulk transport vehicle) must be representative of the entire contents.

However, a mixture of distinctly different ware potatoes of different skin colours (except green) may be packed together in a sales package, provided they are uniform in quality and, for each variety concerned, in origin.

6.2 Packaging

Ware potatoes 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.

Ware potatoes shall be packed in each package in compliance with the appropriate sections of the *Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables* (CXC 44-1995).

6.2.1 Description of Containers

The packages shall meet the quality, hygiene, ventilation and resistance characteristics to ensure suitable handling, shipping and preserving of the ware potatoes. 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 Prepackaged Foods* (CXS 1-1985), the following specific provisions apply:

7.1.1 Nature of Produce

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

7.1.2 Origin of Produce

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

In case of a mixture of distinctly different varieties of ware potatoes of different origins, the indication of each country of origin shall appear next to the name of the variety concerned.

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, either printed on the package itself or on a label secured to the fastening (if the labels are placed inside the packages (string bag), this should be done in such a way that the indications concerning marking are readable from the outside). For produce transported in bulk these particulars must appear on a document accompanying the good, and attached in a visible position in the transport vehicle, unless the document is replaced by an electronic solution in that case the identification should be machine readable and easily accessible.

7.2.1 Identification

Name and address of exporter, packer and/or dispatcher. Identification code (optional)⁵.

7.2.2 Nature of Produce

Each shall be labeled as to the name of the produce and may be labeled as to name of the variety <and/or commercial type. The shape of the tuber may be marked (optional) on the label such as oval, round and long.

7.2.3 Origin of Produce

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

In the case of a mixture of distinctly different varieties of ware potatoes of different origins, the indication of each country of origin shall appear next to the name of the variety concerned.

7.2.4 Commercial Identification

- Class (if classified)
- Size (if sized)
- cooking type, flesh colour, shape of tuber (optional)

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 contaminants and toxins in accordance with 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).

⁴ The full or a commonly used name should be indicated.

⁵ 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.