

# CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture  
Organization of  
the United Nations



World Health  
Organization

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## STANDARD FOR BERRY FRUITS

CXS 349-2022

Adopted in 2022

## 1. SCOPE

The purpose of the standard is to define the quality requirements for berries, as defined in Section 2, after preparation and packaging. When it is applied at stages following packaging, berry fruits 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 conforming to this standard.

## 2. DEFINITION OF PRODUCE

This standard applies to berries<sup>i</sup> found in the list below and shall be supplied fresh to the consumer; berries intended for industrial processing are excluded.

Common names	Family
1. Umbu ( <i>Spondias tuberosa</i> Arruda ex Koster)	Anacardiaceae
2. Andean blackberry ( <i>Rubus glaucus</i> Benth)	Rosaceae
3. Blackberries ( <i>Rubus</i> spp.)	
4. Cloudberries ( <i>Rubus chamaemorus</i> L.)	
5. Cut-leaf blackberry, evergreen blackberry ( <i>Rubus laciniatus</i> Willd)	
6. Loganberries ( <i>Rubus loganobaccus</i> L. H. Bailey) and hybrids of these species	
7. Raspberries ( <i>Rubus idaeus</i> L.)	
8. Saskatoon berry ( <i>Amelanchier Alnifolia</i> (Nutt.) Nutt. ex M.Roem.)	
9. Andean blueberry ( <i>Vaccinium meridionale</i> Swartz)	
10. Bilberries ( <i>Vaccinium myrtillus</i> L.)	
11. Blueberries ( <i>Vaccinium corymbosum</i> L., <i>Vaccinium formosum</i> Andrews, <i>Vaccinium angustifolium</i> Ait., <i>Vaccinium virgatum</i> Ait.)	
12. Cowberries, Lingonberry ( <i>Vaccinium vitis idaea</i> L.)	
13. Cranberries ( <i>Vaccinium macrocarpon</i> Ait.)	
14. Pushgay, Mortiño or Colombian blueberry ( <i>Vaccinium floribundum</i> Kunth)	
15. Wild cranberries ( <i>Vaccinium oxycoccos</i> L.)	
16. Gooseberries ( <i>Ribes uva-crispa</i> L.)	Grossulariaceae
17. White, red, and black currants ( <i>Ribes rubrum</i> L., <i>Ribes nigrum</i> L.)	
18. Acerola or West Indian Cherry ( <i>Malpighia emarginata</i> DC).	Malpighiaceae
19. Craboo or Nance ( <i>Byrsonima crassifolia</i> (L.) Kunth).	

<sup>i</sup> Berries as in the *Classification of Foods and Animal Feeds*, in Volume 2 of the Codex Alimentarius (1993).

20. Camu, CAMU-CAMU ( <i>Myrciaria dubia</i> Mc Vaugh)	Myrtaceae
21. Jaboticaba ( <i>Myrciaria cauliflora</i> (Mart.) O. Berg)	
22. Strawberry-Guava ( <i>Psidium cattleianum</i> Sabine)	
23. Surinam cherry ( <i>Eugenia uniflora</i> L.)	
24. Brazil cherry ( <i>Eugenia brasiliensis</i> Lam.)	
25. Goji berris ( <i>Lycium barbarum</i> L.)	Solanaceae
26. Elderberry ( <i>Sambucus nigra</i> L.)	Viburnaceae/Adoxaceae
27. White mulberry ( <i>Morus alba</i> L.)	Moraceae
28. Black mulberry ( <i>Morus nigra</i> L.)	
29. Common barberry ( <i>Barberries vulgaris</i> L.)	Berberidaceae

### 3. PROVISIONS CONCERNING QUALITY

#### 3.1 Minimum requirements

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

- intact/whole;
- fresh in appearance;
- sound; berries, affected by rotting or deterioration such as to make it unfit for consumption is excluded;
- clean; practically free of any visible foreign matter;<sup>ii, iii</sup>
- practically free from pests;<sup>iv</sup>
- practically free from damage caused by pests;
- free of abnormal external moisture excluding condensation following removal from cold storage;
- free of any foreign smell and/or taste; including bitter taste in the case of bilberries;
- free of damage caused by low and/or high temperature; and
- the peduncle may be missing in non-panicle berries, provided that the rest is clean, and the juice does not drip from the breaking point.

The development and condition of the berries after packing must be such as to enable them to:

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

##### 3.1.1 Minimum maturity requirements

The berries must have reached an appropriate degree of development and/or maturity in accordance with the criteria to the species, variety, commercial type and to the area in which they are grown, that allows the proper development of its organoleptic characteristics. The berries must not be overripe. Some berry fruits such as gooseberries may be presented as firm ripe.

<sup>ii</sup> The loose peduncles among berries that are harvested with them are not considered as foreign matter.

<sup>iii</sup> The pruinose/natural bloom/fuzz on the surface of the produce of which this is a characteristic is not considered a foreign matter.

<sup>iv</sup> The provision for pests applies without prejudice to the applicable plant protection rules applied by governments in line with the International Plant Protection Convention (IPPC).

## 3.2 Classification

The berries are classified into three classes, if it corresponds to a practice for that variety, defined below:

### 3.2.1 *Extra class*

The berries in this class must be of superior quality and they must be characteristic of the variety and/or commercial type of the species or in the case of wild berries characteristic of the species concerned.

- Bilberries and blueberries should be practically free of twins or doubles (agglomerated), and attached stems and must be practically covered with bloom or wax, according to the varietal characteristics.
- Red and white currant panicles must be completely filled.
- Black currant panicles may not be completely filled, and single berries are allowed.

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, the pulp or flesh and presentation in the package.

### 3.2.2 *Class I*

The berries in this class must be of good quality and characteristics of the variety, and/or commercial type of the species or in the case of wild berries, characteristic of the species concerned. Currant (red, white, and black) panicles may be less evenly spaced.

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

- very slight defects in shape;
- very slight leakage of juice, depending on the species and variety;
- slight defects in skin and colouring, depending on the species and variety; and
- very slight bruising

### 3.2.3 *Class II*

This class includes berries that do not qualify for inclusion in the higher classes (class I and extra class) but satisfy the minimum requirements specified in Section 3.1. Currant (red, white, and black) panicles may be less evenly spaced.

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

- slight leakage of juice, depending on the species and variety;
- slight defects in shape;
- defects in skin and colouring, depending on the species and variety; and
- slight bruising.

## 4. PROVISIONS CONCERNING SIZING

Sizing of berry fruits is optional. However, berries may be sized in accordance with existing trade practices. When sized in accordance with existing trade practices, the package may be labelled with the size and method used.

## 5. PROVISIONS CONCERNING TOLERANCES

### 5.1 Quality tolerances

At all marketing stages, tolerances in respect of quality and size (if sized) 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).<sup>1</sup>

### 5.1.1 **Extra class**

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

### 5.1.2 **Class I**

Ten percent allowed by number or weight, of berries not satisfying the requirements of this class, but meeting those of class II. Included within this tolerance, is 2 percent tolerance for decay, soft rot and/or internal breakdown.

### 5.1.3 **Class II**

Ten percent allowed by number or weight, of berries not satisfying the requirements of this class. Included therein within this tolerance, is 3 percent tolerance for decay, soft rot and/or internal breakdown.

## 5.2 **Size tolerances**

For all classes (if sized), a maximum of 10 percent by number or weight of berries not satisfying the size indicated is allowed.

## 6. **PROVISIONS CONCERNING PRESENTATION**

### 6.1 **Uniformity**

The contents of each package must be uniform and contain only berries from the same origin, species, variety or commercial type, or in the case of wild berries, species, quality, colour and size (if sized). The visible part of the contents of the package must be representative of the entire contents. Berry fruits in extra class and class I must be practically uniform in ripeness.

However, a mixture of berries of distinctly different species and/or varieties may be packed together, as long as they are uniform in quality and each species and/or variety being from the same origin.

### 6.2 **Packaging**

Berries 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.

Berries 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).<sup>2</sup>

#### 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 berries.

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),<sup>3</sup> 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 and/or commercial type.

Each package may be labelled "Mixture of berry fruits", in the case of a mixture of distinctly different species and/or varieties of berry fruits. The species and/or varieties in the package must be indicated. "Wild" or equivalent denomination may be included, where appropriate.

### 7.1.2 **Origin of produce**

Each package must include country of origin<sup>v</sup> and, optionally, district where grown or national, regional or local place name.

In the case of a mixture of distinctly different species and/or varieties of berries of different origins for each species and variety, the indication of each country of origin shall appear next to the name of the species or variety 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)<sup>4</sup> 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 produce**

Country of origin<sup>vi</sup> and, optionally, district where grown, or national, regional, or local place name.

In the case of a mixture of distinctly different species and/or varieties of berries of different origins, the indication of each country of origin shall appear next to the name of the species and/or variety concerned.

### 7.2.2 **Commercial specifications**

- class;
- variety and/or commercial type; “wild” or equivalent denomination, where appropriate;
- weight or size (if sized);
- net weight (optional); and
- crop year (optional).

## 8. **FOOD ADDITIVES**

No food additives are permitted in berry fruits.

## 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).<sup>5</sup>

## 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),<sup>6</sup> the *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CXC 53-2003),<sup>7</sup> 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).<sup>8</sup>

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<sup>v</sup> The full or a commonly used name should be indicated.

<sup>vi</sup> See note v above.

## NOTES

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<sup>1</sup> FAO and WHO. 2003. *Guidelines for Food Import Control Systems*. Codex Alimentarius Guideline, No. CXG 47-2003. Codex Alimentarius Commission. Rome.

<sup>2</sup> 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.

<sup>3</sup> FAO and WHO. 1985. *General Standard for the Labelling of Pre-packaged Foods*. Codex Alimentarius Standard, No. CXS 1-1985. Codex Alimentarius Commission. Rome.

<sup>4</sup> FAO and WHO. 2021. *General Standard for the Labelling of Non-Retail Containers of Foods*. Codex Alimentarius Standard, No. CXS 346-202. Codex Alimentarius Commission. Rome.

<sup>5</sup> 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.

<sup>6</sup> FAO and WHO. 1969. *General Principles of Food Hygiene*. Codex Alimentarius Code of Practice, No. CXC 1-1969. Codex Alimentarius Commission. Rome.

<sup>7</sup> 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.

<sup>8</sup> 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.