CODEX ALIMENTARIUS
INTERNATIONAL FOOD STANDARDS

Food and Agriculture Organization of the United Nations
World Health Organization

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STANDARD FOR QUICK-FROZEN RASPBERRIES

CXS 69-1981

Adopted in 1981. Amended in 2019, 2022.

2022 Amendment

Following decisions taken at the Forty-fifth Session of the Codex Alimentarius Commission in December 2022, amendments were made in Section 6.4 Labelling of non-retail containers.

2023 editorial correction

An editorial correction was made to Section 3.2.2 to read “refractometer at 20°C” instead of “refractomer at 20°C”.

1. SCOPE

This standard (formerly CAC/RS 69-1974), shall apply to quick-frozen raspberries of the species *Rubus idaeus* L. as defined below and offered for direct consumption without further processing, except for repacking if required. It does not apply to the product when indicated as intended for further processing or for other industrial purposes.

2. DESCRIPTION

2.1 Product definition

Quick-frozen raspberries are the product prepared from fresh, clean, sound, ripe and stemmed raspberries of firm texture conforming to the characteristics of *Rubus idaeus* L. (red, yellow or black varieties).

2.2 Process definition

Quick-frozen raspberries is the product subjected to a freezing process in appropriate equipment and complying with the conditions laid down hereafter. This freezing operation shall be carried out in such a way that the range of temperature of maximum crystallization is passed quickly. The quick-freezing process shall not be regarded as complete unless and until the product temperature has reached -18 °C (0 °F) at the thermal centre after thermal stabilization. The recognized practice of repacking quick-frozen products under controlled conditions is permitted.

2.3 Handling practice

The product shall be handled under such conditions as will maintain the quality during transportation, storage and distribution up to and including the time of final sale. It is recommended that during storage, transportation, distribution and retail, the product be handled in accordance with the provisions in the *Code of Practice for the Processing and Handling of Quick-Frozen Foods* (CXC 8-1976).[1]

2.4 Presentation

Style

Quick-frozen raspberries may be presented as free-flowing (i.e. as individual berries not adhering to one another) or non-free-flowing (i.e. as a solid block).

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Optional ingredients

Sugars (sucrose, invert sugar, invert sugar syrup, dextrose, fructose, glucose syrup, dried glucose syrup).

3.2 Composition

3.2.1 *Raspberries prepared with dry sugars*

The total soluble solids content of the liquid extracted from the thawed, comminuted sample shall be not more than 35 percent m/m nor less than 18 percent m/m expressed as sucrose, as determined by refractometer at 20 °C.

3.2.2 *Raspberries prepared with syrup*

The amount of syrup used shall be not more than that required to cover the berries and fill the spaces between them. The total soluble solids content of the liquid extracted from the thawed, comminuted sample shall be not more than 30 percent m/m nor less than 15 percent m/m expressed as sucrose, as determined by refractometer at 20 °C.

3.2.3 *Definition of "defective" for composition*

Any sample unit that falls outside the limits for the soluble solids range specified in 3.2.1 and 3.2.2 shall be regarded as a "defective" provided that it does not exceed the limits of the range by more than five percent soluble solids.

3.2.4 *Lot acceptance for composition*

A lot is considered acceptable for compositional criteria when the number of "defectives" does not exceed the acceptance number (c) of an appropriate sampling plan with an acceptable quality limit (AQL) of 6.5. (See relevant Codex texts on methods of analysis and sampling.).

3.3 QUALITY FACTORS

3.3.1 *General requirements*

Quick-frozen raspberries shall be:

(a) of good, reasonably uniform colour, characteristic of the variety;

(b) clean, sound and practically free from foreign matter; and

(c) free from foreign flavour and odour;

and with respect to visual or other defects with a tolerance shall be:

(d) practically free from sand and grit;

(e) when presented as free-flowing, practically free from berries adhering one to another and which cannot be easily separated when in the frozen state;

(f) reasonably free from uncoloured berries;

(g) practically free from completely uncoloured berries;

(h) reasonably free from stalks (cap stems);

(i) practically free from extraneous vegetable matter;

(j) reasonably free from damage or blemish due to pathological injury or pests;

(k) normally developed;

(l) of similar varietal characteristics; and

(m) reasonably free from disintegrated berries or berries not intact.

3.3.2 ***Analytical characteristics***

Mineral impurities – not more than 0.05 percent m/m on a whole product basis (berries and packing medium, if any).

3.3.3 ***Free-flowing characteristics***

(a) When presented as "free-flowing", a tolerance of ten percent m/m shall be allowed for berries which adhere to one another and not easily separated in the frozen state.

(b) The sample unit for the determination of the requirement for "free-flowing" is the entire contents of the container or as large a quantity as practicable.

3.3.4 ***Definition of visual defects***

(a) ***Partially uncoloured berries*** – 25 percent to 75 percent of the surface area without the colour characteristic of the variety;

(b) ***Completely uncoloured berries*** – 75 percent or more of the surface area without the colour characteristic of the variety;

(c) ***Stalks (cap stems)*** – a stalk or portions of stalk, either loose or attached to the berry, and greater than 3 mm in length;

(d) ***Extraneous vegetable matter (E.V.M.)*** – calyces or portion of calyces, leaves or other harmless extraneous vegetable material;

(e) ***Blemished*** – any damage ***whether*** due to pathological injury or pests which materially affect the appearance of the berry;

Minor blemishes are those that do not exceed the area of a circle having a diameter of 5 mm.

Major blemishes are those that exceed the area of a circle having a diameter of 5 mm.

(f) ***Not normally developed*** – berries containing shrivelled parts in the fruit fresh (drupelets);

(g) ***Dissimilar varieties*** – berries that are significantly different in colour or shape due to varietal characteristics;

(h) ***Disintegrated or not intact*** – berries in which more than 25 percent of the berry is missing or berries which are crushed, broken or smashed into small pieces or flattened into a pulpy mass.

3.3.5 ***Standard sample unit***

The sample unit for segregation and evaluating visual effects shall be 300 grammes of drained berry ingredient (see relevant Codex texts on methods of analysis and sampling).

3.3.6 *Tolerances for visual defects*

Based on standard sample unit size of 300 grammes, visual defects shall be assigned points in accordance with Table 1. The maximum number of defects permitted is the "Total Allowable Point" rating indicated for the respective categories "minor", "major", "serious" and "total".

TABLE 1

(Sample unit – 300 grams drained berries)

Defect	Unit of measurement	Defect categories			
		Minor	Major	Serious	Total
(a) Partially uncoloured berries	Each berry	1			
(b) Completely uncoloured berries	Each berry			4	
(c) Stalks (cap stems)	Each piece		2		
(d) E.V.M.	Each cm²		2		
(e) Blemished					
Minor	Each berry	1			
Major	Each berry		2		
(f) Not normally developed	Each berry	1			
(g) Dissimilar varieties	Each berry		2		
TOTAL ALLOWABLE POINTS		15	10	4	20
(h) Disintegrated or not intact	Maximum of 35% m/m				

3.3.7 *Definition of "defective" for quality criteria*

Any sample unit taken in accordance with an appropriate sampling plan with an AQL 6.5 (see relevant Codex texts on methods of analysis and sampling) shall be regarded as a "defective" for the respective characteristics as follows:

(a) that exceeds the tolerance for mineral impurities (3.3.2);

(b) that exceeds the tolerance for "free-flowing" (3.3.3);

(c) that exceeds the "Total Allowable Points" for "Visual Defects" in **any one or more** of the categories in Table 1 (3.3.6);

(d) that exceeds the tolerance for "Disintegrated" in Table 1 (3.3.6).

3.3.8 *Lot acceptance for quality criteria*

A lot is considered acceptable for quality criteria when the number of "defectives", as defined in paragraph 3.3.7, does not exceed the acceptance number (c) of an appropriate sampling plan with an AQL of 6.5 (see relevant Codex texts on methods of analysis and sampling). In applying the lot acceptance procedure, a "defective" for "free-flowing" is treated individually and in addition to the allowance for other product characteristics.

4. FOOD ADDITIVES

None permitted.

5. HYGIENE

5.1 It is recommended that the product 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),[2] and other codes of practice recommended by the Codex Alimentarius Commission which are relevant to this product.

5.2 To the extent possible in good manufacturing practice, the product shall be free from objectionable matter.

5.3 When tested by appropriate methods of sampling and examination, the product:

- shall be free from microorganisms in amounts which may represent a hazard to health;
- shall be free from parasites which may represent a hazard to health; and
- shall not contain any substance originating from microorganisms in amount which may represent a hazard to health.

6. LABELLING

In addition to the requirements of the *General Standard for the Labelling of Pre-packaged Foods* (CXS 1-1985)[3] the following specific provisions apply:

6.1 The name of the food

6.1.1 The name of the food as declared on the label shall include "raspberries". The words "quick-frozen" shall also appear on the label, except that the term "frozen"[i] may be applied in countries where this term is customarily used for describing the product processed in accordance with subsection 2.2 of the standard.

6.1.2 In addition, there shall appear on the label in conjunction with or in close proximity to the word "raspberries": (a) a reference to the colour for varieties other than the red variety: (b) the packing medium "with (name of sweetener and whether as such or as the syrup)".

6.2 Additional requirements

The packages shall bear clear directions for keeping from the time they are purchased from the retailer to the time of their use, as well as directions for thawing.

6.3 Bulk packs

In the case of quick-frozen raspberries in bulk, the information required shall either be placed on the container or be given in accompanying documents, except that the name of the food accompanied by the words "quick-frozen" (the term "frozen" may be used in accordance with subsection 6.1.1 of this standard) and the name and address of the manufacturer or packer shall appear on the container.

6.4 Labelling of 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)[4]

7. PACKAGING

Packaging used for quick-frozen raspberries shall:

(a) protect the organoleptic and other quality characteristics of the product;

(b) protect the product against microbiological and other contamination;

(c) protect the product, as far as practicable, against dehydration, heat accumulation by radiation, and, where appropriate, leakage;

(d) not pass on to the product any odour, taste; colour or other foreign characteristic, throughout the processing (where applicable) and distribution of the product up to the time of final sale.

8. METHODS OF ANALYSIS AND SAMPLING

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended Methods of Analysis and Sampling* (CXS 234-1999)[5] relevant to the provisions in this standard shall be used.

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[i] "frozen": This term is used as an alternative to "quick-frozen" in some English-speaking countries.

NOTES

[1] FAO and WHO. 1976. *Code of Practice for the Processing and Handling of Quick-Frozen Foods*. Codex Alimentarius Code of Practice, No. CXC 8-1976. Codex Alimentarius Commission. Rome.

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

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

[4] 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.

[5] FAO and WHO. 1999. *Recommended Methods of Analysis and Sampling*. Codex Alimentarius Standard, No. CXS 234-1999. Codex Alimentarius Commission. Rome.