CODEX ALIMENTARIUS
INTERNATIONAL FOOD STANDARDS

Food and Agriculture Organization of the United Nations
World Health Organization

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STANDARD FOR CANNED BAMBOO SHOOTS

CXS 241-2003

Adopted in 2003. Revised in 2011. Amended in 2015, 2020, 2022, 2023.

2022 Amendment

Following decisions taken at the Forty-fifth Session of the Codex Alimentarius Commission in December 2022, amendments were made in Section 8.2 Labelling of non-retail containers.

2023 Amendment

Following decisions taken at the Forty-sixth Session of the Codex Alimentarius Commission in December 2023, amendments were made in Section 9. Methods of analysis and sampling.

1. SCOPE

This standard applies to canned bamboo shoots, complying with the characteristics of edible varieties from species of bamboo shoots, as indicated in, but not limited to, Section 2.2 below, and offered for direct consumption, including for catering purposes or for repacking or for further processing.

2. DESCRIPTION

2.1 Product definition

Canned bamboo shoots is the product:

(a) prepared from edible bamboo shoots in packing media with or without fermentation;

(b) processed by heat, in an appropriate manner, before or after being hermetically sealed in a container, so as to prevent spoilage;

(c) the pH value of the product shall be as follows:

(i) natural fermented bamboo shoots product – pH lower than 4.0;

(ii) acidified bamboo shoots product – pH 4.0 – 4.6; and

(iii) non-fermented, non-acidified bamboo shoots product – pH higher than 4.6.

2.2 Species

- *Bambusa* spp;
- *Dendrocalamus* spp;
- *Gigantochloa* spp;
- *Phyllostachys* spp;
- *Melocanda humilis*;
- *Thyrsostachys siamensis*;
- *Nastus elatus.*

2.3 Styles

2.3.1 ***Whole*** – bamboo shoots with tips and flesh trimmed to remove the outer surfaces and hard bases.

2.3.2 ***Half*** – whole bamboo shoots cut longitudinally into halves.

2.3.3 ***Slice*** – bamboo shoots cut into uniform slices.

2.3.4 ***Strip*** – bamboo shoots cut into fine strips of regular size.

2.3.5 ***Dice*** – bamboo shoots cut into cubes of regular size.

2.3.6 ***Other styles***

Any other presentation of the product should be permitted provided that the product:

(a) is sufficiently distinctive from other forms of presentation laid down in the standard;

(b) meets all relevant requirements of the standard, including requirements relating to limitations on defects, drained weight, and any other requirements which are applicable to that style which most closely resembles the style or styles intended to be provided for under this provision; and

(c) is adequately described on the label to avoid confusing or misleading the consumer.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Composition

3.1.1 ***Basic ingredients***

Bamboo shoots as defined in Section 2 and liquid packing medium appropriate to the product.

3.1.2 ***Packing media***

3.1.2.1 Basic ingredients

Water and if necessary, salt.

3.1.2.2 Other permitted ingredients

Packing media may contain ingredients subject to labelling requirements of Section 8 and may include, but is not limited to:

(a) sugars, as defined in the *Standard for Sugars* (CXS 212-1999),[1] and/or other foodstuffs with sweetening properties such as honey, as defined in the *Standard for Honey* (CXS 12-1981);[2]

(b) aromatic plants, spices or extracts thereof, seasoning;

(c) vinegar;

(d) regular or concentrated fruit juice as defined in the *General Standard for Fruit Juices and Nectars* (CXS 247-2005);[3]

(e) oil; and

(f) tomato puree as defined in the *Standard for Processed Tomato Concentrates* (CXS 57-1981).[4]

3.2 Quality criteria

Canned bamboo shoots shall have normal colour, flavour and odour and shall possess a texture characteristic of the product.

3.2.1 *Defects and allowances*

The maximum permissible limitations for irregularities and shape are shown in Table 1.

Table 1

Item	Style	Limitations
1	Whole or half	(a) none if less than 3 per can; (b) 1 unit if 3 – 5 per can; (c) 2 units if 6 – 9 per can; (d) 3 units per every 10 if more than 10 per can.
2	Slice, strip, dice	20% by drained weight.

3.3 Classification of "defectives"

A container that fails to meet one or more of the applicable quality requirements, as set out in Section 3.2 (except those based on sample averages), should be considered as a "defective".

3.4 Lot acceptance

A lot should be considered as meeting the applicable quality requirements referred to in Section 3.2 when:

(a) for those requirements which are not based on averages, the number of "defectives", as defined in Section 3.3, does not exceed the acceptance number (c) of the appropriate sampling plan with an acceptable quality limit (AQL) of 6.5; and

(b) the requirements of Section 3.2, which are based on sample averages, are complied with.

4. FOOD ADDITIVES

4.1 Acidity regulators

Acidity regulators used in accordance with Table 3 of the *General Standard for Food Additives* (CXS 192-1995)[5] are acceptable for use in foods conforming to this standard. In addition:

INS No.	Name of the food additive	Maximum level
INS 334; 335 ii; 337	Tartrates	1 300 mg/kg As tartaric acid

5. CONTAMINANTS

5.1 The products 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]

5.2 The products covered by this standard shall comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission.

6. HYGIENE

6.1 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),[7] the *Code of Hygienic Practice for Low and Acidified Low Acid Canned Foods* (CXC 23-1979),[8] and other relevant Codex texts such as codes of hygienic practice and codes of practice.

6.2 The product 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).[i,9]

7. WEIGHTS AND MEASURES

7.1 Fill of container

7.1.1 *Minimum fill*

The container should be well filled with the product (including packing medium) which should occupy not less than 90 percent (minus any necessary head space according to good manufacturing practices) of the water capacity of the container. The water capacity of the container is the volume of distilled water at 20 ºC which the sealed container will hold when completely filled.

7.1.2 *Classification of "defectives"*

A container that fails to meet the requirement for minimum fill of Section 7.1.1 should be considered as a "defective".

7.1.3 *Lot acceptance*

A lot should be considered as meeting the requirement of Section 7.1.1 when the number of "defectives", as defined in Section 7.1.2, does not exceed the acceptance number (c) of the appropriate sampling plan with an AQL of 6.5.

7.1.4 *Minimum drained weight*

The drained weight of the product should be not less than 50 percent of the net weight, calculated on the basis of the weight of distilled water at 20 ºC which the sealed container will hold when completely filled.[ii]

7.1.4.1 Lot acceptance

The requirements for minimum drained weight should be deemed to be complied with when the average drained weight of all containers examined is not less than the minimum required, provided that there is no unreasonable shortage in individual containers.

8. LABELLING

The product covered by the provisions of this standard shall be labelled in accordance with the *General Standard for the Labelling of Pre-packaged Foods* (CXS 1-1985).[10] In addition, the following specific provisions apply:

8.1 Name of the product

8.1.1 The name of the product shall be "Bamboo Shoots" or "Boiled Bamboo Shoots" or "Fermented Bamboo Shoots". The style, as appropriate, shall be declared as part of the name.

8.1.2 ***Other styles*** – if the product is produced in accordance with the other styles provision (Section 2.3.6), the label should contain in close proximity to the name of the product such additional words or phrases that will avoid misleading or confusing the consumer.

8.1.3 If an added ingredient, as defined in Section 3.1.2.2, alters the flavour characteristic of the product, the name of the food shall be accompanied by the term "flavoured with X" or "X flavoured" as appropriate.

8.2 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).[11]

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[i] For products that are rendered commercially sterile in accordance with the *Code of Hygienic Practice for Low and Acidified Low Acid Canned Foods* (CXC 23-1979), microbiological criteria are not recommended as they do not offer benefit in providing the consumer with a food that is safe and suitable for consumption.

[ii] For non-metallic rigid containers such as glass jars, the basis for the determination should be calculated on the weight of distilled water at 20 °C which the sealed container will hold when completely filled less 20 ml.

9. 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) relevant to the provisions in this standard shall be used.

NOTES

[1] FAO and WHO. 1999. *Standard for Sugars*. Codex Alimentarius Standard, No. CXS 212-1999. Codex Alimentarius Commission. Rome.
[2] FAO and WHO. 1981. *Standard for Honey*. Codex Alimentarius Standard, No. CXS 12-1981. Codex Alimentarius Commission. Rome.
[3] FAO and WHO. 2005. *General Standard for Fruit Juices and Nectars*. Codex Alimentarius Standard, No. CXS 247-2005. Codex Alimentarius Commission. Rome.
[4] FAO and WHO. 1981. *Standard for Processed Tomato Concentrates*. Codex Alimentarius Standard, No. CXS 57-1981. Codex Alimentarius Commission. Rome.
[5] FAO and WHO. 1995. *General Standard for Food Additives*. Codex Alimentarius Standard, No. CXS 192-1995 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. 1979. *Code of Hygienic Practice for Low and Acidified Low Acid Canned Foods*. Codex Alimentarius Code of Practice, No. CXC 23-1979. 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.
[10] FAO and WHO. 1985. *General Standard for the Labelling of Pre-packaged Foods*. Codex Alimentarius Standard, No. CXS 1-1985. Codex Alimentarius Commission. Rome.
[11] 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.