
Canned Jackfruits-Specification

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Foreword

This Ethiopian Standard has been prepared under the direction of the Technical Committee for Fruits and vegetables(Tc-13) and published by the Institute of Ethiopian Standards (IES).

In preparing this Ethiopian Standard reference have been made to the following:

Acknowledgements are made for the use of information from the above publication.

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Canned Jackfruits-Specification

1. Scope

This Ethiopian standard specifies requirements for canned jackfruits which applies to its commercial varieties grown from *Artocarpus heterophyllus* Lam., of the Moraceae family offered for direct consumption, including for catering purposes or for repackaging if required.

2. Terms and Definition

For the purpose of this standard the following terms and definition shall apply.

2.1

blemish

surface discoloration and spots arising from physical, pathological, insect or other agents that definitely contrast with the overall colour, and which may penetrate into the flesh. Examples include bruises, scab and dark discoloration.

2.2

extraneous matters

peels of seeds and fiber strands that adhere to the fruit or are found loose in the pack.

3. Product Description

Canned jackfruits are the products:

3.1 Prepared from substantially sound fruits, fresh, frozen, thermally processed, or processed by other physical methods having reached appropriate maturity for processing. None of its essential characteristic elements are removed. It may undergo operations such as washing, peeling, coring, stemming, grading, cutting, etc.;

3.2 (a) Packed with or without a suitable liquid packing medium, including other optional ingredients as indicated in section 3.2;

(b) Vacuum packaged with packing medium that does not exceed 20 percent of the product's net weight and when the container is sealed in such conditions as to generate an internal pressure in accordance with good manufacturing practicesⁱ; and

3.3 Processed in an appropriate manner, before or after being hermetically sealed in a container, so as to prevent spoilage and to ensure product stability in normal storage conditions at ambient temperature.

4. Essential Composition

4.1 Basic ingredients

jack fruit and liquid packing medium as indicated in section 3.3 below.

4.2 Optional ingredients

spices and culinary herbs, spice oilⁱⁱ.

4.3 Packing media

In accordance with the Guidelines for packing media for canned fruits (CXG 51-2003).

ⁱHigh vacuum products typically have an internal pressure of approximately 300 millibars or more below atmospheric pressure (depending on container size and other relevant factors).

ⁱⁱIn accordance with the relevant Codex standards for spices and culinary herbs when available

5. Requirements

5.1 General requirements

Canned jackfruits shall:

- 5.1.1 be light to golden yellow in color, and free from undesirable flavor and odor;
- 5.1.2 have a uniform appearance and consistency and characteristic of the product;
- 5.1.3 be free from foreign matter;
- 5.1.4 be prepared from sound produce, excluding any fruit that is rotten, spoiled, or deteriorated;
- 5.1.5 be made from practically free of mechanical and/or physiological damaged fruits; and
- 5.1.6 be made from practically free of pests and diseases, and internal damage caused by them affecting the general appearance of the produce

5.2 Specific Requirements

5.2.1 Allowance for defects

The product shall be reasonably free from defects such as extraneous matters and blemished to the extent indicated Table 1 below.

Table 1 Defects limit of canned jackfruits

S.No	Defects	Packaging size	
		500 g or less	More than 500 g
1	Blemished, Max.	3 blemished bulbs	10% by weight
2	Extraneous matters, Max.	2 pieces	4 pieces

6. Food Additives

The product shall contain only permitted additives complying with Codex. Stan.192

7. Contaminants

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).

7.1 Heavy Metal contaminants

Canned jackfruits shall not contain metal contaminants in excess of the quantities specified in Table 2 below.

Table 2 Heavy Metal Contaminants

S.No	Characteristics	Maximum (mg/kg)	Test Methods
1	Lead (Pb)	0.1	ES ISO 6633
2	Arsenic (As)	0.5	ES ISO 6634
3	Tin (Sn)	250	ES ISO 2447

7.2 Pesticide residues

The products covered by this standard shall conform to the pesticide residue limits prescribed by the Codex Alimentarius Commission of the respective commodity.

8. Hygiene

- 8.1** It is recommended that the products 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), the Code of hygienic practice for canned fruit and vegetable products (CXC 2-1969), and other relevant Codex texts such as codes of hygienic practice and codes of practice.
- 8.2** The products 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).
- 8.3** The product shall be free of pathogenic microorganisms and shall conform to the microbiological requirements in Table 3 below.

Table 3 Microbiological requirements of canned jackfruit

S.No	Characteristics	Limit	Test Methods
1	Total plate count, (cfu/g), Max.	10 ²	ES ISO 4833-1
2	<i>E. coli</i> , cfu/g	Absent	ES ISO 7251
3	<i>Clostridium botulinum</i> , cfu/25 g	Absent	ES ISO 17919
4	<i>Bacillus cereus</i> , cfu/g	Absent	ES ISO 7932
5	Yeasts and moulds, (cfu/g), Max.	10	ES ISO 21527-1 ES ISO 21527-1

9. Packaging and Labelling

9.1 Packaging

- 9.1.1** The product shall be packed in clean, sound, free from insects and fungi infection and the packing material shall be of food grade quality.
- 9.1.2** The containers, including packaging material, shall be made of substances which are safe and suitable for their intended use. They shall not impart any toxic substance or undesirable odor or flavor to the product.

9.2 Labelling

The labeling shall comply with the requirements of CES 73, and shall be legibly and indelibly marked with the following:

- Name of the product as “**Canned Jackfruit**”;
- Name and physical address of the manufacturer;
- Declaration of preservative by common name or international numbering; if any
- Batch/Lot number;
- List of ingredients;
- Nutritional information
- Net content (mass) in SI unit;

- h) Country of origin;
- i) Date of packing/manufacture (dd/mm/yy);
- j) Expiry date (dd/mm/yy);
- k) Instruction for use
- l) Storage condition.

10. Sampling Method

Sampling shall be carried out in accordance with Annex A.

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Annex A
(Normative)
Sampling Plans for Prepackaged Foods (AQL = 6.5)
Sampling Plan 1
Normal Operations

Net weight is equal to or less than 1 kg (2.2 lb)

Lot size (N)	Sample size (n)	Acceptance number (C)
4 800 or less	6	1
4 801 – 24 000	13	2
24 001 – 48 000	21	3
48 001 – 84 000	29	4
84 001 – 144 000	48	6
144 001 – 240 000	84	9
More than 240 000	126	13

Net weight is greater than 1 kg (2.2 lb) but not more than 4.5 kg (10 lb)

Lot size (N)	Sample size (n)	Acceptance number (c)
2 400 or less	6	1
2 401 – 15 000	13	2
15 001 – 24 000	21	3
24 001 – 42 000	29	4
42 001 – 72 000	48	6
72 001 – 120 000	84	9
More than 120 000	126	12

Net weight is greater than 4.5 kg (10 lb)

Lot size (N)	Sample size (n)	Acceptance number (c)
600 or less	1	1
601 – 2 000	13	2
2 001 – 7 200	21	3
7 201 – 15 000	29	4
15 001 – 24 000	48	6
24 001 – 42 000	84	9
More than 42 000	126	13

Sampling Plan 2 In Case of Disputes

Net weight is equal to or less than 1 kg (2.2 lb)

Lot size (N)	Sample size (n)	Acceptance number (c)
4 800 or less	13	2
4 801 – 24 000	21	3
24 001 – 48 000	29	4
48 001 – 84 000	48	6
84 001 – 144 000	84	9
144 001 – 240 000	126	13
More than 240 000	200	19

Net weight is greater than 1 kg (2.2 lb) but not more than 4.5 kg (10 lb)

Lot size (N)	Sample size (n)	Acceptance number (c)
2 400 or less	13	2
2 401 – 15 000	21	3
15 001 – 24 000	29	4
24 001 – 42 000	48	6
42 001 – 72 000	84	9
72 001 – 120 000	126	13
More than 120 000	200	19

Net weight is greater than 4.5 kg (10 lb)

Lot size (N)	Sample size (n)	Acceptance number (c)
600 or less	13	2
601 – 2 000	21	3
2 001 – 7 200	29	4
7 201 – 15 000	48	6
15 001 – 24 000	84	9
24 001 – 42 000	126	13
More than 42 000	200	19

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- ❖ Develop Ethiopian standards and establish a system that enable to check whether goods and service are in compliance with the required standards,
- ❖ Facilitate the country's technology transfer through the use of standards,
- ❖ Develop national standards for local products and services so as to make them competitive in the international market.
- ❖ Conduct standards related research and provide training and technical support.

Ethiopian Standards

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