

(Dzongkha Title)

# DRAFT BHUTAN STANDARD

Cereal Cookies



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**BHUTAN STANDARDS BUREAU**

The National Standards Body of Bhutan

THIMPHU 11001

(Dzongkha Title)

**BHUTAN STANDARD**

**Cereal Cookies**

DRAFT BHUTAN STANDARDS FOR PUBLIC COMMENTS

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**FOREWORD**

This Bhutan Standard for cereal cookies was adopted by Bhutan Standards Bureau after the draft finalized by the Food and Agriculture Technical Committee TC 02 and approved by the Bhutan Standards Bureau Board (BSB Board) on Date Month Year.

This standard is subjected to systematic review after five years to keep pace with the market trends, industrial and technological developments. Any suggestions and further information may be directed to the concerned Technical Committee.

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## Introduction

Agriculture plays an important role in the Bhutanese economy, and major cereals grown in Bhutan are; Rice (*Bja*), Maize (*Gayza*), Wheat (*Ka*), Barley (*Nah*), Buckwheat (*Bjo* or *Jarey*), Millets (*Memja* or *Cham*), and Perilla (*Zimtse*), inclusive of Quinoa (*Ashi Heychum*). These are rich in vitamins, high mineral content and are not only diets for Bhutanese people but has cultural and religious significance. With the recent trend of health consciousness, cereals are processed into cookies as part of value addition and income generation by entrepreneurs in the country. Cookies are processed from cereal flours in combination with other essential and desired ingredients.

This standard for cereal cookies will ensure that they are safe, consistent in quality, and appropriately labeled.

The use of standard remains voluntary and when referenced by regulatory authorities as a basis for legislation, the standards become mandatory.

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**BHUTAN STANDARD****Cereal Cookies****1 Scope**

This Bhutan Standard specifies the requirements and methods of sampling and test for cookies baked from cereal flours intended for human consumption.

This Bhutan Standard does not apply to fortified cookies, high energy cookies and any other baked products.

**2 Normative References**

The following documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including amendments) applies.

ISO 7251 *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

ISO 24333: 2009 *Cereals and cereal products — sampling*

BTS 51: 2018 SARS 0006: 2018 *Biscuits - Specification*

BTS 139: 2019 SARS 00014: 2018 *Bhutan Standard for Food Hygiene-General Principles-Code of Practice*.

BTS 268: 2020 CXS 1-1985 *Bhutan Standard for the labelling of Prepackaged Foods*.

BTS 281 ISO 4831 *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number technique*

BTS 322 ISO 4833-1 *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony count at 30 °C by the pour plate technique*

BTS 324 ISO 21527-2 *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0.95*

BTS 333 ISO 6888-1 *Microbiology of the food chain — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Method using Baird-Parker agar medium*

BTS 334 ISO 6579-1 *Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella — Part 1: Detection of Salmonella spp.*

**3 Terms and Definitions**

For the purpose of this standard, the following terms and definitions shall apply;

**3.1 Cereal Flours**

The product prepared from grains like wheat, rice, maize, oats, barley, millet, quinoa, sorghum, rye, and buckwheat by grinding or milling process to a suitable degree of fineness.



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### **3.2 Contaminant**

Contaminant means any biological or chemical agent, foreign matter not intentionally added to the flour which may compromise food safety or suitability.

### **3.3 Extraneous Matters**

All organic and inorganic matter other than the product.

### **3.4 Food additives**

Any substance not normally consumed as a food by itself but are added intentionally to maintain and improve its safety, freshness, taste, texture and appearances.

### **3.5 Foreign Matter**

Any material that is introduced or present at any point of its production or distribution that affects the quality and safety of the product.

### **3.6 Ingredients**

Any substance, including food additives, that is added to achieve a desired product.

## **4 Ingredients**

The product shall be baked from ingredients that are of fresh and good quality, free from extraneous matter, excessive moisture on visual inspection, substances hazardous to health, and shall comply with all relevant national food laws and standards.

### **4.1 Cereal Flours**

**4.1.1** The cereals flour shall conform to the available national standards or relevant regulations where ever applicable.

### **4.2 Fat**

**4.2.1** The following materials, singly or in combination shall be used:

Hydrogenated vegetable oil, bakery shortening, refined edible vegetable oils, butter, butter oil, ghee, margarine and others.

**4.2.2** They shall conform to the relevant national standards or regulations where ever applicable.

### **4.3 Water**

It shall comply to the relevant national standards or regulations where ever applicable.

### **4.4 Dairy and Non-dairy Milk/Creamer**

**4.4.1** The following materials shall be used;

Milk, milk powder, condensed milk, soya milk, oat milk, almond milk, coconut milk and others.

**4.4.2** They shall conform to the relevant national standards or regulations where ever applicable.

### **4.5 Leavening Agents**

**4.5.1** The following materials shall be used;

Baking powder, sodium bicarbonate, yeast (*Saccharomyces cerevisiae*) and any other approved aerating agent

**4.5.2** They shall conform to the relevant national standards or regulations where ever applicable.

### **4.6 Sweetener**

**4.6.1** The following materials shall be used;

Sugars, Jaggery, honey, syrup and any other permitted sweetener.

**4.6.2** They shall conform to the relevant national standards or regulations where ever applicable.

**4.7 Other Raw Materials and Additives.**

**4.7.1** They shall conform to the relevant national standards or regulations where ever applicable.

**5 Quality Factors**

**5.1 Quality Factors - General**

The product shall meet the following general requirements as listed below:

**5.1.1** Shall be properly baked so that they are soft and crunchy.

**5.1.2** Shall have uniform texture and appearance.

**5.1.3** Shall have an agreeable flavor, typical of their types.

**5.1.4** Shall be free from any soapy or objectionable taste and odour.

**5.1.5** Shall be free from fungal or mould growth and pests' infestation.

**5.1.6** Shall be free from any other harmful foreign matter.

**5.2 Quality Factors - Specific**

**5.2.1** The product shall conform to the following chemical compositional requirements as specified under **table 1**;

**Table 1 – Quality Factors-Specific**

S/N	Parameter	Limit	Recommended Test Method
1	Moisture, <i>Max</i>	6%	BTS 51: 2018 SARS 0006: 2018
2	Acid Insoluble Ash (on dry basis), percent by mass, <i>Max</i>	0.05 %	BTS 51: 2018 SARS 0006: 2018
3	Acidity of extracted fat (as oleic acid), percent by mass, <i>Max</i>	1 %	BTS 51: 2018 SARS 0006: 2018

The test methods are only recommendation and laboratories may use any validated method of analysis.

**6 Contaminants**

The test methods are only recommendation and laboratories may use any validated method of analysis.

**6.1 Heavy Metal**

The product shall be free from heavy metals in amounts which may represent a hazard to health. If present, they shall not exceed the limits specified in **table 2**;

Table 2- Heavy metal limits

S/N	Parameter	Limit, <i>Max</i> (mg/kg)	Recommended Test Methods
1	Lead (Pb)	2.2	BTS 51: 2018 SARS 0006: 2018
2	Arsenic (As)	1.1	BTS 51: 2018 SARS 0006: 2018

## 6.2 Mycotoxins

The product shall be free from mycotoxins limits established by the available Codex Alimentarius Commission or relevant national regulations.

## 6.3 Microbiological

The product shall conform to the following microbiological limits specified in *table 3*;

Table 3 - Microbiological limit

S/N	Type of Microorganisms	Limits ( <i>Max</i> )	Recommended Test Methods
1	<i>E. coli</i> per g	Absent	ISO 7251
2	<i>Salmonella Spp.</i> per 25 g	Absent	ISO 6579
3	Yeast and Mould, cfu/g	10 <sup>3</sup>	ISO 21527-2
4	Total plate count, cfu/g	10 <sup>4</sup>	ISO 4833-1
5	<i>Staphylococcus aureus</i> , cfu/g	10 <sup>2</sup>	ISO 6888-1
6	Coliform, MPN/g	10 <sup>2</sup>	ISO 4831

## 7 Food Additives

Permissible food additives and preservatives may be added within the permissible level as specified in BTS 271: 2020 CODEX STAN 192-1995.

## 8 Hygienic Requirement

The product shall be prepared and handled in accordance with the BTS 139: 2019 SARS 0014:2018 Bhutan Standard on Food Hygiene - General Principles - Code of Practice or relevant national regulations.

## 9 Storage

- 9.1 The received raw material shall be stored in a clean and food grade container. They shall be stored as per the manufacturer's instructions.
- 9.2 The product shall be packed in a clean and airtight food grade packaging material.
- 9.3 The packaging material and the packed product shall be stored in a dry, cool and away from the direct sun exposure.

**9.4** Suitable pest control program shall be in place and be effective to ensure that there are no signs of pest infestation.

**9.5** Suitable waste management and waste disposal shall be in place.

## **10 Sampling**

Sampling shall be carried out according to the procedure described in BTS 51: 2018 SARS 0006: 2018.

## **11 Packaging**

### **11.1 Primary Packaging**

**11.1.1** The product shall be packed in airtight food grade packing materials which will safeguard the hygienic, nutritional, and organoleptic qualities of the product.

**11.1.2** The packing material shall be made of substances which are safe and suitable for their intended use. They should not impart any toxic substance.

### **11.2 Secondary Packaging**

**11.2.1** Individual packages shall be packed in strong cardboard cartons suitable for multiple handling.

### **11.3 Labelling**

The labelling shall be in accordance to BTS 268: 2020 CXS 1-1985 Bhutan Standard for the labelling of Prepackaged Foods.

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