

འབྲུག་རྒྱལ་ཁབ་གནས་ཚད།

# BHUTAN STANDARD

Buckwheat flour



ICS 67.060

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BHUTAN STANDARDS BUREAU  
The National Standards Body of Bhutan  
THIMPHU 11001

འབྲུག་གློ་ཕྱེའི་གནས་ཚད།

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## **FOREWORD**

This Bhutan Standard for Buckwheat flour 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 [Day Month](#) 2020.

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.

## **Introduction**

Buckwheat (*Fagopyrum* spp.) is a pseudo cereal that belongs to the family Polygonaceae. The seeds (achenes) are usually classified among the cereal grains because of their similar usage. The grain is gluten free and considered as a functional food. Grains are generally used as dehulled groats in porridge and breakfast cereals. The flour is used in the preparation of cakes, pancakes, biscuits and noodles.

The purpose of this Bhutan Standard for buckwheat flour is to specify the requirements *viz.* on general, chemical properties, contaminants and labelling of products.

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 FOR BUCKWHEAT FLOUR

### 1 Scope

This Bhutan Standard prescribe requirements for buckwheat flour for direct consumption prepared from grain of sweet buckwheat (*Fagopyrum esculentum*) and bitter buckwheat (*F. tataricum*), which is prepackaged, ready for sale to the consumer.

This Bhutan Standard does not apply to any product prepared from buckwheat flour.

### 2 Normative references

The following documents are indispensable for 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 24333:2009 *Cereals and cereal products — sampling*

CODEX STAN 193-1995 *General standard for contaminants and toxins in food and feed*

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.*

### 3 Terms and definition

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

#### 3.1 Buckwheat flour

The product prepared from the grain of sweet and bitter buckwheat or mixtures thereof, by grinding or milling processes in which the hull are partly removed and the remainder is comminuted to a suitable degree of fineness. Herein referred to as 'flour.'

#### 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

Any materials which affects the quality of the flour.

#### 3.4 Hull

Outer covering of grain.

### 4 Requirements

#### 4.1 General requirements

Flour shall meet the following general requirements as listed below:

4.1.1 Shall be of white to grey color.

4.1.2 Shall be reasonably free from extraneous matter when inspected visually.



**4.1.3** Shall not contain flour from other cereals.

**4.1.4** Shall be safe and suitable for human consumption.

**4.1.5** Shall be free from abnormal flavours, musty, sour or other undesirable odor, obnoxious smell, discoloration and caked lumps.

**4.1.6** 98% or more flour shall pass through 0.21mm to 0.4mm.

**4.1.7** Shall be free from filth such as impurities of plant and animal origin including insects, rodent hair and excreta

**4.1.8** Shall be free from micro-organisms and substances originating from micro-organisms or other poisonous or deleterious substances in amounts that may constitute a hazard to human health.

## **4.2 Chemical requirements**

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

**Table 1- Chemical requirements**

<b>Sl. No.</b>	<b>Parameter</b>	<b>Limit</b>
1	Ash	2.5% <i>max.</i>
2	Moisture	12% <i>max.</i>
3	Protein	8% <i>min.</i>

Laboratories may use any validated method of analysis.

## **4.3 Contaminants**

The analyses of contaminants shall be done from laboratories using any validated method.

### **4.3.1 Heavy metal**

The flour 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 limit**

<b>Sl. No.</b>	<b>Parameter</b>	<b>Limit, <i>Max.</i> (mg/kg)</b>
1	Lead (Pb)	0.1
2	Cadmium(Cd)	0.02
3	Arsenic(As)	0.1
4	Mercury(Hg)	0.01

### **4.3.2 Pesticide residues**

The flour shall comply with those maximum residue limits established by the available Codex Alimentarius Commission or relevant national standard on pesticide residues.

### 4.3.3 Mycotoxins

The flour shall be free from mycotoxins in amounts which may represent a hazard to health. If present, it shall not exceed the limits specified in *table 3*;

**Table 3- Mycotoxins Levels (MLs)**

Sl. No	Parameter	Limit, <i>Max.</i> (mg/kg)
1	Aflatoxin B1, B2, G1, G2 (total)	0.02
2	Orchatoxin A	0.005

### 4.3.4 Microbiological

The flour shall conform to the following microbiological limits specified in *table 4*;

**Table 4- Microbiological limit**

Sl. No.	Type of Microorganisms	Limit
1	Coliform	< 500 MPN/gm
2	E-Coli	Absent/gm
3	Salmonella	Absent/25gm

## 5 Hygienic requirement

The flour shall be prepared and handled in accordance with the BTS 139: 2019 SARS 0014:2018 *Bhutan Standard for food hygiene- General principles- Code of practice*.

## 6 Storage

**6.1** The flour shall be stored immediately after being milled in a clean and airtight food grade packaging material

**6.2** Establishment shall have clearly defined boundaries and be away from toxic chemicals exposure/odor producing industries.

**6.3** The packed product shall be stored in a dry, cool and well-ventilated area.

**6.4** Suitable pest control program shall be in place and be effective to ensure that there are no signs of pest infestation. (Eg. flies, rats, lizards, etc)

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

## 7 Sampling

Sampling shall be carried out according to the procedure described in ISO 24333: 2009.

## **8 Packaging**

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

**8.2** The packaging material shall be made of substances which are safe and suitable for their intended use. They should not impart any toxic substance or undesirable odor or flavor to the product.

**8.3** When the flour is packaged in sacks, they shall be thermoplastic lined, clean, sturdy and properly sewn or sealed.

## **9 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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