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DRAFT BHUTAN STANDARD

Turmeric Powder - Specification

ICS 67.220.10

BHUTAN STANDARDS BUREAU

The National Standards Body of Bhutan

THIMPHU 11001

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FOREWORD

This Bhutan Standard for Turmeric Powder - Specification 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.

Introduction

Turmeric powder is processed from the dried rhizomes of turmeric plant under Zingiberaceae family with its biological name *Curcuma longa*, mostly grown in tropical to sub-tropical regions up to 1500m from mean sea level. There are three released varieties (Samtenling Yu-Nga Sep, Samtenling Yu-Nga Maap and Samtenling Yu-Nga Lewang) commonly cultivated as a spice both for domestic consumption and commercial purpose.

The use of standard remains voluntary and when referenced by regulatory authorities for implementation, the standards become mandatory.

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DRAFT BHUTAN STANDARD

Turmeric Powder - Specification

1 Scope

This standard applies to the requirements for turmeric (*Curcuma longa*) in powdered form.

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:

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 271 CXS 192 *General standard for food additives.*

3 Terms and Definitions

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

3.1 Extraneous Matter

All organic or inorganic matter other than the product unintentionally added. For example - dirt, mould growth, insect infestation, etc.,

3.2 Food Additives

Food additive means any substance not normally consumed as a food by itself and not normally used as a typical ingredient of the food, whether or not it has nutritive value, the intentional addition of which to food for a technological (including organoleptic) purpose in the manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food results, or may be reasonably expected to result (directly or indirectly), in it or its by-products becoming a component of or otherwise affecting the characteristics of such foods. The term does not include contaminants or substances added to food for maintaining or improving nutritional qualities.

3.3 Foreign Flavors

Any flavors deviating from its characteristic flavor.

3.4 Insect Infestation

The presence of live or dead animals, larvae, eggs, or other insect related contaminants in food commodities.

3.5 Mustiness

The quality of smelling or tasting old or stale or moldy.

4 Quality Factors

4.1 Quality Factors - General

The product shall meet the following general requirements:

4.1.1 Shall have the characteristic smell and flavour of the spice.

4.1.2 Shall be free from mustiness or other foreign flavours.

4.1.3 Shall be free from extraneous matter.

4.1.4 Shall be free from any added coloring matter.

4.1.5 Shall be graded according to its particle size into two types, as follows:

a) coarse powder: 98 % of the product shall pass through 500 µm IS sieve

b) fine powder: 98 % of the product shall pass through 300 µm IS sieve.

4.2 Quality Factors - Specific

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

Table 1 – Quality Factors-Specific

S/N	Parameter	Limits	Recommended Test Method
1	Moisture, Max	10 %	IS 1797
2	Total Ash on dry basis, Max	9 %	IS 1797
3	Acid Insoluble Ash on dry basis, Max	1.5 %	IS 1797
4	Curcumin Content, Min	2 %	IS 10925
5	Starch on dry basis, Max	60 %	IS 4706 (Part 2)
6	Presence of lead chromate	Negative	IS 3576

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

5 Contaminants

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

5.1 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 Limit

S/N	Parameter	Limits *Max (mg/kg)*	Recommended Test Methods
1	Lead (Pb)	1.5	IS 2860
2	Arsenic (As)	0.1	IS 2860

5.2 Pesticide Residues

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

5.3 Mycotoxins

The product 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

S/N	Parameter	Limits *Max (µg/kg)*	Test Methods
1	Total Aflatoxin (B1, B2, G1, G2)	10	IS 16287
2	Aflatoxin B1	5	IS 16287
3	Ochratoxin A	15	EN 17250

5.4 Microbiological

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

Table 4 - Microbiological limit

S/N	Type of Microorganisms	Limits	Recommended Test Methods
1	Salmonella per 25 gm, Max	Absent	IS 5887 (Part 3)
2	Yeast and Mould, cfu/g, Max	1.0×10^3	ISO 7954
3	Bacillus Cereus, cfu/g, Max	1.0×10^3	IS 5887 (Part 6)

6 Food Additives

Permissible food additives and preservatives may be added within the permissible level in accordance with BTS 271 CXS 192 *General standard for food additives*

7 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.

8 Storage

8.1 The storeroom shall be dry, well protected from sun, well ventilated, free from foreign odour and proofed against entry of insects and vermin.

8.2 The store shall have adequate lighting facility.

8.3 The product shall not be kept directly on the floor.

9 Sampling

Sampling shall be carried out according to internationally accepted methods or national methods recognized internationally.

10 Packaging

10.1 The packaging material shall be clean, sound, dry, and made of food grade materials which does not affect the product and protects it from moisture absorption.

10.2 The packaging material shall be free from any fungal or insect infestation and shall not impart any foreign smell.

10.3 The product shall be securely packed and sealed.

10.4 The packaging material shall protect the product's safety and quality during transportation and storage.

11 Labelling

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

Bibliography

ISO 5562: 1983 Turmeric, whole or ground (powdered) - Specification

ISO 7251: 2005 Microbiology of food and animal feeding stuffs Horizontal method for the detection and enumeration of presumptive Escherichia coli Most probable number technique

ISO 21527-1:2008 Microbiology of food and animal feeding stuffs Horizontal method for the enumeration of yeasts and moulds, Part 1: Colony count technique in products with water activity greater than 0,95 EN

EN 17250:2020 - Foodstuffs - Determination of ochratoxin A in spices, liquorice, cocoa and cocoa products by IAC clean-up and HPLC-FLD

DEAS 917: 2017 Turmeric — Specification

BDS 991:2020 Specification for turmeric powder (Second Revision)

IS 1797: 1985 Method of test for spices and condiments

IS 2860: 1964 Methods of sampling and test processed fruits and vegetables

IS 3576: 2022 Spices and Condiments Turmeric, Whole and Ground Specification (Fourth Revision)

IS 4706 (Part 2): 1978 Methods of test for edible starches and starch products

IS 5887 (Part 3): 1999 Methods for Detection of Bacteria Responsible for Food Poisoning Part 3 General Guidance on Methods for the Detection of Salmonella

IS 5887 (Part 6) Microbiology of Food and Animal Feeding Stuffs – Horizontal Method for the Enumeration of Presumptive Bacillus Cereus, Part 6 Colony-count Technique at 30-degree C

IS 16287: 2015 ISO 16050: 2003 Foodstuffs - Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products - High performance liquid chromatographic method

IS 10925: 1984 Specification for Turmeric Oleoresin

882/2004 - Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules

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