

BHUTAN STANDARD FOR MAIZE AND MAIZE PRODUCTS

1. PREAMBLE

This standard is issued pursuant to the Food Rules and Regulations of Bhutan 2007. This standard is based mainly on the Codex General Standard for maize (CODEX STAN 153-1985 revised 1995).

2. SCOPE

This standard applies to maize (corn) for human consumption, i.e. ready for its intended use as human food, presented in packaged form or sold loose from the package directly to the consumer. This standard specifies requirements for whole grain shelled dent maize, *Zea mays indentata* L., and/or shelled flint maize, *Zea mays indurata* L., or their hybrids. It shall also apply to maize grits and “Tengma” (Bhutanese beaten corn).

3. DESCRIPTION

3.1 Product Definition

Maize (corn) is the mature shelled grains of the species defined in the scope.

Kharang is maize grits.

Tengma/Seap (Bhutanese beaten corn) is roasted and pounded maize used as breakfast cereal.

Ashom Bokpi is the maize flour.

4. ESSENTIAL COMPOSITION AND QUALITY FACTORS

4.1 Quality Factors – General

- 4.1.1 Maize shall be whole or broken kernels safe and suitable for human consumption. It shall be sweet, hard, clean and wholesome.
- 4.1.2 Maize shall be free from added colouring matter, abnormal flavours, odours and living insects.
- 4.1.3 Maize shall be free from filth in amounts which may represent a hazard to human health.

4.2 Quality Factors – Specific

4.2.1 **Moisture content** 15.5% m/m max; not more than 16.0 per cent by weight (obtained by heating the pulverized grains at 130 degree C to 133 degree C for two hours).

4.2.2 **Extraneous matter** is all organic and inorganic materials other than maize, broken kernels, other grains and filth.

4.2.2.1 **Filth** are impurities of animal origin (including dead insects) 0.1% m/m max

4.2.2.2 Toxic or noxious seeds

The products covered by the provisions of this standard shall be free from the following toxic or noxious seeds in amounts which may represent a hazard to human health.

- Corn cockle (*Agrostemma githago* L.)
- Jimson weed (*Datura* ssp.)
- Amaranthus
- Parthenium (*Parthenium hysterophorus*)

4.2.2.3 **Other organic extraneous matter** which is defined as organic components other than edible grains of cereals (foreign seeds, stems, etc.) (1.5% m/m max).

4.2.2.4 **Inorganic extraneous matter** which is defined as any inorganic component (stones, dust, etc.) (0.5% m/m max).

4.2.3 **Other edible grains** - Not more than 3 per cent by weight.

4.2.4 **Damaged grains**- Not more than 5 per cent by weight.

4.2.5 **Weevilled grains**- Not more than 10 per cent by count.

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 9 per cent by weight.

4.2.6 **Uric acid**- Not more than 100 mg per kg.

5. CONTAMINANTS

5.1 Heavy metals

Maize shall be free from heavy metals in amounts which may represent a hazard to human health.

5.2 Crop protectants residues

The limit for the following pesticides/weedicides are prescribed as below

Chloropyrifos 0.5mg/kg

Cypermethrion 2.0mg/Kg

Butachlor 0.5 mg/Kg

Maize shall comply with those maximum residue limits established by the Codex Alimentarius Commission for maize.

5.3 Mycotoxins

Aflatoxin not more than 10 micrograms per kilogram

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 *Recommended International Code of Practice – General Principles of Food Hygiene* (CAC/RCP 1-1969) and other Codes of Practice recommended by the Codex Alimentarius Commission which are relevant to this product.

6.2 To the extent possible in good manufacturing practice, the product shall be free from objectionable matter.

7. PACKAGING

7.1 Maize (corn) shall be packaged in containers which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product.

7.2 The containers, including 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 odour or flavour to the product.

7.3 When the product is packaged in sacks, these must be clean, sturdy and strongly sewn or sealed.

8. LABELLING

8.1 Name of the product

- 8.1.1 The name of the product to be shown on the label shall be “maize” or the name of the product “Kharang” for maize grits, “Tengma/seap” for Bhutanese beaten corn and “Ashom Bokpi” for maize flour
- 8.1.2. It shall conform to the provisions of the standard for labelling of pre-packaged foods.

9. FURTHER PROCESSING

The food grains meant for grinding/processing shall be clean, free from all impurities including foreign matter (extraneous matter).