

BHUTAN STANDARD FOR BHUTHANESE CHILLI AND CHILLI POWDER

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 commercial varieties of chilli peppers grown from *Capsicum spp.*, of the *Solanaceae* family, to be supplied fresh to the consumer, (CODEX STAN 307-2011).

2. SCOPE

This standard applies to chilli grown in Bhutan and the chilli powder obtained from it.

I. BHUTANESE CHILLI

3. DESCRIPTION

Chillies whole - means the dried ripe fruits or pods of the *Capsicum annum* L and *Capsicum frutescens* L. varieties ShaEma, BaegopEma, (fresh and dried produce) Super Solo (fresh and salad purposes) and *add others common in Bhutan* like Dallae or cherry pepper. The ShaEma, BaegopEma and Super Solo are wrinkled when dried.

ShaEma

- Fruit orientation: Pendent
- Fruit shape: Elongated, shoulder at the calyx area and with blunt tips
- Fruit colour (not ripe): Green
- Fruit colour (ripe): Red
- Fruit length: 8 cm, width: 2.4 cm
- Average fruit weight: 23.7 g
- Seed percentage: 8%
- Pedicel length: 3.1 cm
- Fruit wall thickness: 0.3 cm (thick)
- Pungency : Mild
- Number of lobes: 3

BaegopEma

- Fruit orientation: Pendent
- Fruit shape: Elongated, no shoulder, calyx covering the entire base of fruit and with pointed tips
- Fruit colour (not ripe): Green
- Fruit colour (ripe): Red

- Fruit length: 8.7 cm width: 1.7 cm
- Average fruit weight: 20.5 g
- Seed percentage: 9%
- Pedicel length: 3.2 cm
- Fruit wall thickness: 0.25 cm (thick)
- Pungency : Mild
- Number of lobes: 3

Super Solu

- Pungency is milder than ShaEma though fruit shape is similar but with pointed tips.
- Fruit length is 18.5 cm, width is 4 cm.
- Weight is 80 gm and fruit wall is thicker than ShaEma.
- Not Suitable as dried chilli as it is difficult to dry and quality of dried chilli is poor.

“Dallae” Cherry pepper

- Fruit shape round
- Fruit colour (ripe) red
- Fruit size 1 to 1.5 inches
- Pungency hot
- Suitable for making pickle

4. PROVISIONS CONCERNING QUALITY

4.1 Minimum Requirements

In all classes, subject to the special provisions for each class and the tolerances allowed, the chilli must be:

- i. whole, the stalk (stem) may be missing, provided that the break is clean and the adjacent skin is not damaged;
 - ii. sound, produce affected by rotting or deterioration such as to make it unfit for consumption is excluded;
 - iii. firm;
 - iv. clean, practically free of any visible foreign matter;
 - v. practically free of pests and damage caused by them affecting the general appearance of the produce;
 - vi. free of abnormal external moisture excluding condensation following removal from cold storage;
 - vii. free of any foreign smell and/or taste;
 - viii. free of damage caused by low and/or high temperatures.
- 4.2 Chilli must be harvested at an appropriate degree of development in accordance with the criteria proper to the variety and the area in which they are grown.

The development and condition of the chilli must be such as to enable them to withstand transport and handling and to arrive in satisfactory condition at the place of destination.

5. ESSENTIAL COMPOSITION AND QUALITY FACTORS

The pods shall be free from mould, living and dead insects, insect fragments, and rodent contamination. The product shall be free from extraneous coloring matter (Sudan red and other artificial colors), coating of mineral oil and other harmful substances.

It shall conform to the following standards:

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| a. Extraneous matter: | Not more than 1.0 percent by weight |
| b. Unripe and marked fruits: | Not more than 2.0 percent by weight |
| c. Broken fruits, seed & fragments : | Not more than 5.0 percent by weight |
| d. Moisture: | Not more than 11.0 percent by weight |
| e. Total ash on dry basis: | Not more than 8.0 percent by weight |
| f. Ash insoluble in dil.HCl on dry basis: | Not more than 1.3 percent by weight |
| g. Insect damaged matter: | Not more than 1.0 percent by weight |

6. CONTAMINANTS

Aflatoxins: The maximum level of aflatoxin permitted shall be 10µg/kg total aflatoxin.

The produce covered by this standard shall comply with the maximum residue limits for pesticides/fungicides as follows;

Chloropyrifos	10mg/kg
Copper Oxychloride	20 mg/kg
Cypermethrin	10 mg/kg
Dimethoate	3 mg/kg
Fenvelerate	0.03 mg/kg
Malathion	1mg/Kg
Mancozeb	10mg/kg
Carbendazin	20mg/Kg
Dicofol	1mg/kg

7. MICROBIOLOGICAL REQUIREMENTS

Salmonella absent in 25 gm

8. HYGIENE

It is recommended that the produce 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), Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

The produce should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997).

9. PACKING

Shall be packed in packages which prevent deterioration during transport and storage.

10. LABELLING

Shall be labelled as “Bhutanese Chilli” and it shall conform to the provisions of the standard for labelling of pre-packaged foods.

II. BHUTANESE CHILLI POWDER

1. DESCRIPTION

Bhutanese chilli powder means the powder obtained by coarse grinding clean ripe fruits or pods of Bhutanese varieties of *Capsicum annum* L and *Capsicum frutescens* L.

It shall be free from mould, living and dead insects, insect fragments and rodent contamination.

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

The powder shall be dry, free from dirt, extraneous colouring matter, flavouring matter, mineral oil and other harmful substances. The chilli powder, coarsely ground, bright red in colour, may contain any edible vegetable oil to a maximum limit of 2.0 percent by weight. It may contain visible chili seeds, pieces of pericarp of chilli. Special varieties of Bhutanese chili powder may in addition contain seed powders of *Perillafrutescens*, Schazwan pepper and other selected spices, and have to be labelled.

It shall conform to the following standards:

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| i. Moisture: | Not more than 11.0 percent by weight |
| ii. Total ash on dry basis: | Not more than 8.0 percent by weight |
| iii. Ash insoluble in dilute HCl on dry basis: | Not more than 1.3 percent by weight |
| iv. Crude fibre: | Not more than 30.0 percent by weight |
| v. Non-volatile ether extract on dry basis : | Not less than 12.0 percent by weight |

3. CONTAMINANTS

Aflatoxins: The maximum level of aflatoxin permitted shall be 10 µg/kg total aflatoxin.

The produce covered by this Standard shall comply with the maximum residue limits for pesticides/fungicides as follows;

Chloropyrifos	10mg/kg
Copper oxychloride	20 mg/kg
Cypermethrin	10 mg/kg
Dimethoate	3mg/kg
Fenvelerate	0.03 mg/kg
Malathion	1mg/Kg
Manozeb	10mg/kg
Carbendazin	20mg/Kg
Dicofol	1mg/kg

It shall be free from Sudan Red and other artificial colours.

4. MICROBIOLOGICAL REQUIREMENTS

Salmonella absent in 25 gm

5. ADULETERANTS

Free from Sudan dye, brick powder, orange peel and other colouring matters like Rodamine B.

6. HYGIENE

The produce 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), Code of Hygienic Practice for Fresh Fruits and

Vegetables (CAC/RCP 53-2003), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice. The produce should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997).

7. PACKING

Shall be packed in packages which prevent deterioration during transport and storage.

8. LABELLING

- 8.1. Shall be labelled as “Bhutanese Chilli powder” or “Bhutanese Chili powder added with powders of Perilla/Schezwanpepper etc
- 8.2. It shall conform to the provisions of the standard for labelling of pre-packaged foods.