འབྲུག་སྤྱི་ཞའི་གནས་ཚད།

BHUTAN STANDARD

Herbal Tea

ICS 67.140.10

BHUTAN STANDARDS BUREAU

The National Standards Body of Bhutan

THIMPHU 11001

_____, 2020

Price group B

འབྲུག་སྤྱི་ཞའི་གནས་ཚད།

BHUTAN STANDARD

Herbal Tea

PDF disclaimer

This PDF may contain embedded typefaces. In accordance with Adobe's Licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The Bhutan Standards Bureau accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

COPYRIGHT PROTECTED DOCUMENT

Director General
Bhutan Standards Bureau
Rijug Lam
Thimphu-11001
Tel: 00975-2-325104/325401
Fax: 00975-2-323712/328298
Web: www.bsb.gov.bt
Published in Thimphu, Bhutan

Table of contents

FOREWORD

This Bhutan Standard for Herbal Tea was developed 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.

Consumption of tea has become popular beverages and its popularity reflects increasing consumer appreciation for the wide range of natural and refreshing tastes they offer and also due to its sensory properties. Therefore, there is need to have a standard that provides common understanding of tea to promote trade in the world market; to improve consumer's knowledge about these products; and to guide the manufacturers and traders respectively on safety and quality during production and importation of the tea and enable to export their tea products.

This standard is subject 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

Herbal teas are produced in numerous countries around the world and is blended or consumed in many ways. The desired characteristics of a Tea and the resulting brew depend on many factors including the type of water used for brewing, the preparation method and on individual tastes.

The purpose of this Bhutan Standard for Herbal Tea are to define the quality of ingredients for manufacturing the tea and to set requirements such as physico-chemical properties, labelling and packaging, hygiene, sampling and marking.

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

BHUTAN STANDARD FOR HERBAL TEA

1 Scope

This Bhutan Standard prescribes the requirements, sampling and test methods for herbal tea. Any use for medicinal purposes is not within the scope of this standard.

2 Normative references

The following referenced 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 any amendments) applies.

ISO 1575 *Tea - Determination of total ash*

ISO 1577 *Tea – Determination of acid insoluble ash*

ISO 1573 *Tea – Determination of loss in mass at 103^{0}C*

ISO 1839 *Tea – Sampling*

ISO 4833–1 *Microbiology of the food chain – Horizontal method for the enumeration of microorganisms – Part 1: Colony count at 30 degrees Celsius by the pour plate technique*

ISO 16649-2 *Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli -- Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide*

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*

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

BTS 268:2020 CODEX STAN 1-1985 *General standards for the labelling of prepackaged foods*

BTS 139:2019 SARS 0014:2018 *Food hygiene- General principles – Code of practice.*

3 Terms and definition

For the purposes of this document, the following terms and definitions apply;

3.1 Adulteration

Materials or substances intentionally added to the product for economic gain (or avoiding loss) or for intentional harm.

3.2 Extraneous matter

Any material which is not from the intended plant's part e.g. sand, stones, metallic chips and any foreign matter.

3.3 Herbal tea

Tea made from parts of plants (roots, flowers, leaves, barks, fruits, seeds or twigs) which do not originate from *Camellia sinensis* (L.) O. Kuntze and which are intended for the same use as tea. Herbal tea are also blends of herbal material with tea as a minor component which do not fall under the category 'flavoured tea'.

3.4 Contaminants

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

4 Requirement of physico-chemical properties

4.1 General requirement

4.1.1 The tea shall be clean and reasonably free from extraneous matter when inspected visually

4.1.2 The tea shall be free from pests and damage caused by them affecting the general appearance of the products

4.1.3 The tea shall be free from any additives such as colouring agents and artificial flavoring

4.1.4 The tea shall be free from preservatives

4.1.5 The tea shall be free from non-characteristics odour of the tea

4.1.6 The tea shall be free from adulteration and

4.1.7 The tea shall be free from contamination.

4.2 Specific properties and characteristics of ingredients for herbal tea

The ingredients for herbal tea shall be as described in ***Annex B***.

4.3 Chemical requirement

The tea shall conform to the requirements specified in the ***Annex A***, *table 1*. The methods quoted are recommended, however laboratories may use the validated test methods for determination of listed chemical parameters.

4.4 Contaminants

4.4.1 Mycotoxins

The tea shall conform to mycotoxins' maximum levels (MLs) specified in the ***Annex A****, table 2*. Specific methods for determination of mycotoxins for herbal tea is not prescribed. Laboratories may use validated test methods for determination of listed mycotoxins.

4.4.2 Heavy metals

The tea shall conform to heavy metals contaminants specified in the ***Annex A,*** *table 3*. Specific methods for determination of heavy metals for herbal tea are not prescribed. Laboratories may use validated test methods for determination of listed heavy metals.

4.4.3 Microbiological

Tea shall conform to microbial acceptable limits specified in ***Annex A,*** *Table 4*. The methods quoted are recommended, however the laboratories may use the validated test methods for enumeration of listed microbes.

4.4.4 Pesticide residue

The tea shall conform to the limits as defined in FAO/WHO Codex Alimentarius.

5 Packaging and labelling

5.1 Packaging

The tea shall be packed in food grade materials that will safeguard the hygienic, nutritional and organoleptic qualities of the product. The tea shall be packed in close and dry container which does not affect the quality of the product.

5.2 Labelling

The labelling shall be carried out in accordance with BTS 268:2020 CODEX STAN 1-1985 *General standards for the labelling of prepackaged foods*.

6 Hygiene

The tea should be prepared and handled in accordance with BTS 139:2019 SARS 0014:2018 *Food hygiene- General principles – Code of practice.*

7 Sampling

Sampling shall be carried out according to the procedure described in ISO 1839 *Sampling.*

8 Marking

The packages of tea should be marked in accordance with any relevant legal requirements and agreements between the interested parties.

BIBLIOGRAPHY

[1] ISO 11287:2011 (E), Green Tea – Definition and basic requirements

[2] ISO 3720:2011 (E), Black tea – Definition and basic requirements

[3] CXS 193: 1995, General standard for contaminants and toxins in food and fee

[4] ASEAN Stan 40:2014, ASEAN STANDARD FOR TEA

[5] DKS 2676: 2017 Herbal and Fruit infusions- Specification. Kenya Bureau of Standards

[6] IS 3633: 2003, Black tea – Specification

[7] IS 15344:2003, Green tea - Specification

[8] Standards/ Guidelines for Tea. (2010). Sri Lanka Tea Board.

[9] Guidelines on the Registration of Herbal Medicines (2004), Republic of Philippines

[10] *Tea and Herbal Infusion Europe*. (2014). Compendium of guidelines for herbal and Fruit infusion.

[11] British Pharmacopoeia. (2019). *Herbal drugs, herbal drug preparations and herbal medicine products materials for use in the manufacturer of homoeopathic preparations.* The Stationary Office, London.

Annex A

(Normative)

Table 1 – Chemical requirement for Herbal Tea

Product	*Max. Total Ash % dry mass*	*Max. Acid Insoluble Ash % dry mass*	*Max. Loss on Drying %*	*Min. Volatile oil, % v/w*
Basil (Leaves)	17.7	6.0	10.0	
Cardamom	6.0	3.5		≥ 4.0
Chamomile (Flower)	8.0	2.5	11.0	
Cinnamon (Bark)	6.0			≥ 1.0
Dandelion (Whole habit)	17.0	5.0	10.0	
Ginger (Rhizome)	6.0			
Gooseberry (Fruit)	7.0		10.0	
Roselle (Flower)	10	2.5	15.0	
Hypericum (Flower)	4.1	0.12	12.0	
Jasmine (flower)	8.4	0.3	7.0	
Orange (Peel)	7			
Lemon Balm	12.0	2.5	13.0	
Lemongrass (Herb)		5.0	11.0	
Magnolia officinalis (Flower)	8.0		11.0	
Moringa (Leaves)	13.2	0.41	5.0	
Azadirachta indica (Leaf)	10.0		10.0	
Nettle (Leaf)	20.0	5.0	14.0	
Peppermint (Leaf)	15.0	2.5	13.0	
Picrorhiza (Root)	2.45	0.3	12.0	
Rosehip (Fruit)		1.5	14.0	
Rheum australe (	3.0	0.4	12.0	
Safflower (Flower)	10.0	3.0	11.0	
Sea Buckthorn (Fruit)	2.2	0.4	6.0	
Sweet Orange (Flower)	10.0	2.5	12.0	
Sweet Orange (Fruit)	10.0	3.0	12.0	
Terminalia belerica (Fruit)	7.0		5.0	
Terminalia chebula (Fruit)	5.0		10.0	
Turmeric (Rhizome)	7.0	0.12	10.0	

Test methods

ISO 1575 – Determination of total ash

ISO 1577 – Determination of acid insoluble ash

ISO 1573 – Determination of loss in mass at 103^0C

Table 2 – Maximum mycotoxins residue limits (Clause 4.4.1)

Characteristics	**Limit** (µg/kg)
Aflatoxin B1	2
Aflatoxin B1,B2, G1,G2 (As sum)	4
Ochratoxin A	20

Table 3 – Maximum heavy metal limits (Clause 4.4.2)

Characteristics	**Limit** (mg/kg)
Lead *(Pb)*	5.0
Cadmium *(Cd)*	1
Mercury (Hg)	0.5
Arsenic (As)	0.3

Table 4 –Maximum microbial contaminants limits (Clause 4.4.3)

Characteristics	**Limit** (cfu/g)	**Test methods**
Aerobic Bacteria	10^7	ISO 4833-1
Yeast and Moulds	10^4	ISO 21527-2
Escherichia coli	Absent	ISO 16649-2
Salmonellae	Absent	ISO 6579-1

Annex B

(Normative)

Specific properties and characteristics of ingredients for herbal tea

BASIL (leaves) - Whole or crushed dried pieces of herb consisting of leaves, tender stem and flower parts (often calyx) of *Ocimum tenuiflorum* (syn. *Ocimum sanctum*) belonging to the family Lamiaceae. The herbs has sweet, pungent, clove-like, somewhat bitter green/herbaceous aroma.

Identification: Leaves simple, opposite, petiolate, ovate or elliptical with an acute or obtuse apex, up to 5 cm long and 3.5 cm wide, green or purple, with an entire or serrated margin and pubescent on the surfaces. Fragments of petiole and stem twisted, hairy, purplish-brown or dark green-black, subquadrangular, petiole thin up to 3 cm long, stem herbaceous or woody and fibrous, thicker and highly branched. Fragments of Calyx, if present, membranous, veined, 3 to 4 mm long, ovoid or campanulate bi-lipped with upper lip broadly obovate and shortly apiculate, lower lip longer with two short lateral and larger central mucronate teeth. Corolla about 4 mm long, pubescent; fruit consisting of 4 nutlets enclosed in a calyx, each nutlets sub globose, highly compressed, nearly smooth; pale brown or reddish with a small black hilum and each with one seed. Seed rounded to ovoid brown about 0.1 cm long.

CARDAMOM (Pods) – Dried and crushed fruits of *Elettaria cardamomum* belonging to the family Zingiberaceae. The odour and taste of the seeds, strongly aromatic.

*Identification: Macroscopical f*ruit - a trilocular inferior capsule, up to about 2 cm long, ovoid or oblong, dull green to pale bluff, plump or slightly shrunken, obtusely triangular in cross section, nearly smooth or longitudinally striated. Seeds in each loculus two rows, forming an adherent mass attached to the axile placenta. Seed: Pale to dark reddish brown, about 4 mm long and 3 mm broad, irregularly angular, marked with six to eight transverse wrinkles, with longitudinal channel containing the raphe, each seed envelope by a colourless membranous aril. Transversely cut surface of seed showing a brown testa, white starchy perisperm, grooved on one side, yellowish endosperm and paler embryo.

CHAMOMILE (Flower) - Consist of the dried whole or crushed inflorescence from *Matricaria recutita* L. (syn. *Matricaria chamomilla* L.) including a technically unavoidable amount of other aerial plant parts. The smell and taste are typically similar to coffee.

Identification: The flowers heads are white and yellowish - grey. Composed of solitary hemispherical capitula, made up of a solid conical receptacle bearing the florets, each subtended by a transparent small pelea.

CINNAMON (Bark) – Dried bark, freed from outer cork and the underlining parenchyma, of the shoots grown on cut stock *Cinnamomum verum* J.Presl (also known as *Cinnamomum zeylanicum*). The bark tastes slightly sweeter and non-spicy unlike bark of *Cinnamomum cassia.*

Identification: The bark is about 0.2 – 0.8 mm thick and occurs in closely packed compound quills made up of single or double quills. The outer surface is smooth, yellowish – brown with faint scars marking the position of leaves and axillary buds and has fine, whitish and wavy longitudinally striations. The inner surface is slightly darker and longitudinally striated. The fracture is short and fibrous.

DANDELION (Whole habit) – Mixture of whole or fragmented, dried aerial and underground parts of *Taraxacum officinale* F.H.Wigg. The herbs has characteristic bitter taste.

Identification: The underground parts consists of dark brown or blackish fragments 2-3 cm long, deeply wrinkled longitudinally on the outer surface. The thickened crown shows many scars left by the rosette of leaves. The fracture is short. A transverse sections shows a greyish-white or brownish cortex containing concentric layer of brownish lactiferous vessel and a porous, pale yellow, non-radiate wood. Leaf fragments

are green, glabrous or densely pilose. They are crumpled and usually show a clearly visible midrib on the inner surface. The lamina with deeply dentate margin, is crumpled. The solitary flower heads, on hollow stems, consist of an involucre of green, foliaceous bracts surrounding the yellow florets, all of which are lingulate; a few achenes bearing a white, silky, outspread pappus may be present. The plants tastes bitter.

GINGER (Rhizome) - Dried, whole or cut rhizome of *Zingiber officinale* Roscoe belonging to the family Zingiberaceae. The rhizome has characteristics aromatic odour, spicy and burning taste.

Identification: The colour of rhizome varies from dark yellow to light brown and Rhizome laterally compressed, bearing short, flattened and obovate branches on the upper side, each sometime having a depressed scar at the apex.

GOOSEBERRY (Fruits) - Crushed fruits of *Phyllanthus emblica* (syn. *Emblica officinalis*) belonging to the family Phyllanthaceae. The fruit tastes astringent taste.

Identification: The fruit is irregular and oval shaped and measures about 2 cm in diameter, pericarp has dark brownish colour when matured and often grooved with sporadic greyish white patches.

ROSELLE/ HIBISCUS (Flower) - Whole or crushed dried calyxes and epicalyxes from *Hibiscus sabdariffa* L. which are collected during the fruiting period. It has faint smell and a sour taste.

Identification: The calyx is joined in the lower half to form an urceolate structure, the upper half dividing to form 5 long acuminate recurved tips. The tips have a prominent, slightly protruding midrib and a large, thick nectary gland about 1mm in diameters.

HYPERICUM (Flower) – Whole dried flower of *Hypericum hookerianum* L. belonging to the family Hypericaceae. It has characteristic balsamic odor and mildly bitter.

Identification: Inflorescence 1-5-flowered, from apical node, nearly round-topped; bracts deciduous, lanceolate or narrowly oblong to obovate-spatulate. Pedicels 3-16 mm. Flowers 3-6 cm in diam., ± deeply cupped; buds broadly ovoid to subglobose, apex broadly obtuse to round. Sepals spreading-incurved, obovate or obovate-spatulate to subcircular or elliptic or oblong-elliptic, subequal, 5-10 × 4-8 mm; laminar glands lines, sometimes interrupted near apex, often becoming impressed (sepals apparently ribbed) margin entire or rarely very finely eroded-denticulate, apex rounded or rarely rounded-apiculate to obtuse. Petals deep golden to pale yellow, broadly obovate to subcircular, 1.5-3 × 1.5-2.5 cm, ca. 3 × as long as sepals; margin entire, eglandular; apiculus obtuse to rounded or absent. Stamen fascicles each with 60-80 stamens, longest 5-9 mm, 0.25-0.35 × as long as petals. Ovary broadly ovoid, 5-7(-8) × 4-5(-6) mm; styles 2-4(-7) mm, 0.35-0.7(-0.9) × as long as ovary, free, gradually outcurved toward apex. Capsule ovoid to ovoid-conic, 0.9-1.7 cm × 7-12 mm. Seeds dark reddish brown, 0.7-1 mm, not or scarcely carinate; testa linear-reticulate.

JASMINE (Flower) – Whole, dried flower of *Cestrum nocturnum* belonging to the family Solanaceae. The flower has strong floral aroma.

Identification: The flowers are greenish white and perfumed. Individual flowers are supported by a bract, calyx small, bell-shaped, corolla salver shaped or tubular, yellowish-green, stamens 5, filaments with linear appendages at the base and ovary 2-celled, seated on a disk, style slender, stigma capitate, above the stamens.

ORANGE (Peel) – Dried and crushed peel (thick pitted rind) of *Citrus reticulata* belonging to the family Rutaceae. The smell and taste are piquant and aromatic, typical of mandarin orange and faintly bitter. Product residues from etheric oil extraction, pectin production etc. are not used.

LEMON BALM (Leaves) - Shall consist of the whole or crushed dried leaves and parts of the upper shoots from *Melissa officinalis* L. The smell and taste are piquant, aromatic and reminiscent of lemon.

Identification: The leaf has petiole of varying length; the lamina is broadly ovate, acute at the apex and round to cordate at the base; the margins are crenate to dentate. The upper surface is intense green, the lower surface is paler green and shows conspicuous midrib and a raised, reticulate venation; scattered hairs occurs the upper surface and along with veins the lower surface, which is also finely punctuate.

LEMONGRASS (Herb) - Dried, cut aerial plant parts from *Cymbopogon sp*. The leaves have parallel venation and are light green to soft brown. The smell and taste are clearly lemon-like.

MAGNOLIA OFFICINALIS (Flower) – Steamed and dried unopened flower of *Magnolia officinalis* Rehder et E.H. Wilson. The flower has sweet fragrance and pungent flavour.

Identification: The greyish-yellow pedicel is short and densely tomentose. The brown or reddish brown flower bus is elongated, conical, 4-7 cm long and 1.5 – 2.5 cm in diameter at base. The stamens are numerous with fine, short filaments and a linear, yellowish brown anther. The carpels are free and numerous, spirally arranged on a conical receptacle.

MORINGA (Leaflets) - Whole or crushed dried Leaflets of *Moringa oleifera* belonging to the family Moringaceae. The leaves has unique aroma and bitter in taste.

Identification: The leaves are compound and leaflets are alternate. Leaflets have bright green color on dorsal and pale green on ventral surface, measures about 2-2.5cm long 1-1.5 cm wide, shape is ovate/oblong, margins are entire and has reticulate venation.

NEEM (leaflets) – Whole, dried leaflets of *Azadirachta indica* A. Juss *var.* Neem belonging to the family Meliaceae.

Identification: Leaflet thin and fragile, ovate to lanceolate, 3 to 10 cm long and 1 – 2.5 cm wide, curved with a serrate margin; base markedly asymmetrical, apex acuminate and terminating in a fine point; upper surface dark brownish-green, lower surface paler with distinct midrib and lateral veins running to the midrib; both surface glabrous.

NETTLE (Leaf) – Aerial parts of *Urtica dioca* L. and *Urtica urens* L or a mixture of the two species collected during the flowering period and dried. The leaf fragments are shrivelled and often crumpled up into a ball.

Identification: The leaves are dark green, dark greyish-green or brownish green on the upper surface and paler on the lower surface; scattered stinging hairs occurs on both the surfaces, also small trichomes that are more numerous along the margins and on the veins on the lower surface. The lamina is strongly shrunken, ovate or oblong up to 100 mm king and 50 mm wide with coarsely serrated margin and a cordate or rounded base. The venation is reticulate and distinctly prominent on the lower surface. The petiole is green or brownish green, rounded of flattened, about 1 mm wide, longitudinally furrowed and twisted; it bears stinging hairs and covering trichomes.

PEPPERMINT (Leaf) – Whole or crushed dried leaves of *Mentha* × *Piperita* L. It has penetrating odour reminiscent of menthol.

Identification: The leaf is entire, broken or cut, thin fragile and crumpled. The lamina of leaf is oval or lanceolate, dentate sharply and has acuminate apex. The margin sharply dentate and the base asymmetrical.

PICRORHIZA (Rhizome) – Dried, crushed and powdered rhizomes of *Picrorhiza kurroa* ex Benth also known as *Neopicrorhiza scrophulariiflora.* Rhizomes are 1 cm in diameter and coarsely rooting from nodes. Rhizome has bitter taste.

RHEUM AUSTRALE (Rhizome) – Dried, crushed and powdered rhizomes of *Rheum australe* belonging to the family Polygonaceae. . It has a characteristic odor; tastes slightly astringent and bitter when chewed and is yellowish brown to light brown in color.

Identification: The outer surface of roots are smooth, longitudinally wrinkled or sunken, yellowish brown and mottled with alternating striate of grayish white parenchyma and brownish or reddish medullary rays. The fracture is uneven and granular; the fractured surface is pinkish brown.

ROSEHIP (Fruit) - Peel of rose-hips, whole or crushed, consisting of the dried cupule of the spurious fruit of various types of the species *Rosa L*. belonging to the Rosaceae family, predominantly without the short hairs found at the base of the fruit.

SAFFLOWER (Flower) - Dried disk florets from *Carthamus tinctorius* L. The flower has mild and pleasant taste with sweet aroma.

Identification: The flower is orange – yellow or reddish-orange, tubular, gamopetalous, actinomorphic florets are separate from the capitulum. Each florets consist of a long, filliform tube, about 1 cm long divided into 5 equal, narrow, lanceolate lobes, about 0.5 cm long. From the opening of the tube emerges the hollow cylindrical formed by the fused yellow anther, in which filliform style persists, thickened near the apex.

SEA BUCKTHRON (Fruit) – Crushed fruits of *Hippophae salicifolia* D.Don belonging to the family Elaeagnaceae. The fruit has acidic taste.

Identification: The fruit is squeezed after harvest to remove the liquid. The fruit is Fruit globose, 5-7x5-7mm, orange-yellow to greenish brown, are bitter and sour in taste and have a delicate aroma, resembling that of a pineapple.

SWEET ORANGE *(leaves)* - Consist of whole or crushed dried leaves and petioles from different varieties of *Citrus sinensis* (L.) Osbeck.

Identification: The leaves are large and oval, slightly pointed, with clearly articulated petiole. The leaf is leathery, increases in thickness towards the margins, yellow-green and is dotted with oil reservoirs. The smell is aromatic and the taste is sweetish, aromatic and heavy.

SWEET ORANGE *(flowers)* consist of the whole or crushed dried inflorescence and petals of certain varieties of *Citrus sinensis* (L.) Osbeck. The smell is aromatic and the taste is sweetish, aromatic and heavy.

TERMINALIA BELERICA (Fruit) – Consist of dried pericarp of *Terminalia belerica* Roxb. belonging to the family Combretaceae. It has bitter and acidic taste.

Identification: The dried fruits are sub-spherical, about 3 to 5 cm in diameter, slightly depressed at the upper end and more or less tapering to the scar of the pedicel at the lower end. The surface is brown to yellowish brown with a grey velvety sheen, irregularly wrinkled and sometimes with faint, incomplete, longitudinally ridges. Cut transversely, the fruit shows the pericarp about 4-5 mm thick enclosing a very hard and yellowish-white seed.

TERMINALIA CHEBULA (Fruit) – Consist of pericarp of mature fruits of *Terminalia chebula* Retz. belonging to the family Combretaceae. It has sweet, sour and astringent in taste.

Identification: The dried fruits are sub-globular to ovoid, about 3 to 4 cm in long and 1.5 cm wide, bluntly pointed at the tip and tapering towards the base. The surface is yellowish to greenish, sometimes brown, shiny and more or less wrinkled and has distinct longitudinal ridges. Cut transversely, the fruit shows the pericarp about 3 to 4 mm thick, non-adherent to the very hard, creamy white seed.

TURMERIC (Rhizome) – Dried and crushed rhizome of *Curcuma longa* L. with roots and outer surface removed, belonging to the family Zingiberaceae. It has bitter, pepper like flavour and earthy aroma.

Identification: The rhizome is ovate, oblong-ovoid, pyriform or cylindrical, often branched, up to 6 cm and 15mm thick. The primary rhizome shows scars from the lateral branches. The surface is slightly dusty, spotted and brownish yellow, yellow or brownish grey, finely striated. The fracture is granular, smooth, non-fibrous, slightly glossy, uniformly orange yellow; it shows a narrow cortex that is darker on the outside.

FOOD AND AGRICULTURE TECHNICAL COMMITTEE (TC 02)

Organization	*Representative(s)*
National Dairy Research and Development Centre, Thimphu	Mr. Phuntsho T Norbu (Chairperson)
Bhutan Agriculture and Food Regulatory Authority, Thimphu	Mr. Jamyang Phuntsho
Bhutan Agriculture and Food Regulatory Authority, Thimphu	Mrs. Gyem Bidha (Alternate)
Bhutan Agro Industries Limited, Thimphu	Mrs. Jigme Wangmo (Alternate)
Bhutan Exporters Association, Phuentsholing	Mr. Dorji Tshering
Bhutan Livestock Development Corporation Limited, Thimphu	Mr. Sithar Dorji
Bhutan Livestock Development Corporation Limited, Thimphu	Mr. Pema Khandu (Alternate)
Department of Agriculture, Ministry of Agriculture and Forests, Thimphu	Mrs. Pema Choden
Department of Agriculture, Ministry of Agriculture and Forests, Thimphu	Mr. Jimba Rabgyel (Alternate)
Department of Agricultural Marketing and Cooperatives, Ministry of Agriculture and Forests, Thimphu	Mr. Dawa Tshering
Department of Agricultural Marketing and Cooperatives, Ministry of Agriculture and Forests, Thimphu	Mr. Tashi Tshering (Alternate)
Department of Industry, Ministry of Economic Affairs, Thimphu	Mr. Tashi Dorji
National Post Harvest Centre, Paro	Mr. Dechen Tshering
Office of Consumer Protection, Ministry of Economic Affairs, Thimphu	Mr. Jigme Dorji
Office of Consumer Protection, Ministry of Economic Affairs, Thimphu	Chencho Zangmo (Alternate)
Bhutan Standards Bureau, Thimphu	Mr. Sonam Phuntsho, Director General (Ex-officio member)

Member Secretary
Phurpa Wangdi
Standardization Division
Bhutan Standards Bureau

SUB-COMMITTEE ON TEA (TC02/SC02)

Organization	*Representative (s)*
Bhutan Cordyceps sinensis, Thimphu	Mr. Chencho Wangdi (Chairperson)
Bhutan Agriculture and Food Regulatory Authority, Thimphu	Ms. Namgay Dema
Bhutan Agriculture and Food Regulatory Authority, Thimphu	Mr. Kinley Dorji (Alternate)
Bhutan Cordyceps sinensis, Thimphu	Mr. Phub Dorji (Alternate)
Bhutan Herbal Tea, Paro	Ms. Sonam Choki
Bhutan Herbal Tea	Ms. Dhan Kumari (Alternate)
Menjong Sorig Pharmaceuticals Corporation Limited (MSPCL)	Mr. Tashi
Menjong Sorig Pharmaceuticals Corporation Limited (MSPCL)	Mr. Samten (Alternate)
One Gewog One Product, Thimphu	Mr. Sonam Tobgay

Member Secretary
Phurpa Wangdi
Standardization Division
Bhutan Standards Bureau