

BHUTAN MANDATORY STANDARD FOR GENERAL FRUIT JUICES AND NECTARS

1. PREAMBLE

This Standard is issued pursuant to the Food Rules and Regulations of Bhutan 2017 and is based on the Codex General Standard for Fruit Juices and nectars (Codex Stan 247-2005)

2. SCOPE

This standard applies to General fruit juices and nectars as defined in section 3

3. DEFINITION:

Fruit juice (Canned, Bottled, Flexible and/ Or aseptically packed) is the unfermented but fermentable liquid obtained from the edible part of sound, appropriately mature and fresh fruit or of fruit maintained in sound condition by suitable means including post-harvest surface treatments.

Fruit Nectar is the non-carbonated soft drink made with fruit juice and contains other ingredients' such as preservative and sugar.

4. DESCRIPTION

Some juices may be processed with pips, seeds and peel, which are not usually incorporated in the juice, but some parts or components of pips, seeds and peel, which cannot be removed by Good Manufacturing Practices (GMP), will be acceptable.

The juice is prepared by suitable processes, which maintain the essential physical, chemical, organoleptic and nutritional characteristics of the juices of the fruit from which it comes. The juice may be cloudy or clear and may have restored aromatic substances and volatile flavour components, all of which must be obtained by suitable physical means, and all of which must be recovered from the same kind of fruit. Pulp and cells obtained by suitable physical means from the same kind of fruit may be added.

A single juice is obtained from one kind of fruit. A mixed juice is obtained by blending two or more juices or juices and purées, from different kinds of fruit.

Fruit juice is processed by heat, in an appropriate manner, before or after being sealed in a container, so as to prevent spoilage. The juice may have been concentrated and later reconstituted with water suitable for the purpose of maintaining the essential composition and quality factors of the juice. It may contain salt.

Fruit juice is obtained either directly expressed by mechanical extraction processes or from concentrate by reconstituting concentrated fruit juice with potable water.

Concentrated fruit juice is the product that complies with the definition given above, except water has been physically removed in an amount sufficient to increase the Brix level to a value at least 50% greater than the Brix value established for reconstituted juice from the same fruit, *as indicated in the Annex*. In the production of juice that is to be concentrated, suitable processes are used and may be combined with simultaneous diffusion of the pulp cells or fruit pulp by water provided that the water extracted soluble fruit solids are added in-line to the primary juice, before the concentration procedure.

Fruit juice concentrates may have restored aromatic substances and volatile flavour components, all of which must be obtained by suitable physical means, and all of which must be recovered from the same kind of fruit. Pulp and cells obtained by suitable physical means from the same kind of fruit may be added.

Water Extracted Fruit Juice is the product obtained by diffusion with water of:

- Pulpy whole fruit whose juice cannot be extracted by any physical means, or
- Dehydrated whole fruit.

Such products may be concentrated and reconstituted. The solids content of the finished product shall meet the minimum Brix level for reconstituted juice specified in the Annex.

Fruit purée for use in the manufacture of Fruit Juices is the unfermented but fermentable product obtained by suitable processes e.g. by sieving, grinding, and milling the edible part of the whole or peeled fruit without removing the juice. The fruit must be sound, appropriately mature, and fresh or preserved by physical means or by treatment(s).

Fruit purée may have restored aromatic substances and volatile flavour components, all of which must be obtained by suitable physical means, and all of which must be recovered from the same kind of fruit. Pulp and cells obtained by suitable physical means from the same kind of fruit may be added.

Concentrated fruit purée for use in the manufacture of Fruit Juices is obtained by the physical removal of water from the fruit purée in an amount sufficient to increase the Brix level to a value at least 50% greater than the Brix value established for reconstituted juice from the same fruit, *as indicated in the Annex*.

Concentrated fruit purée may have restored aromatic substances and volatile flavour components, all of which must be obtained by suitable physical means, and all of which must be recovered from the same kind of fruit.

Fruit Nectar is the unfermented but fermentable product obtained by adding water with or without the addition of sugars, honey and/or syrups, and/or food additive sweeteners as listed in the *Codex General Standard for Food Additives (GSFA)* to products, or to a mixture of those products. Aromatic substances, volatile flavour components, pulp and cells all of which must be recovered from the same kind of fruit and be obtained by suitable physical means may be added. That product moreover must meet the requirements defined for fruit nectars in the Annex. Mixed fruit nectar is obtained from two or more different kinds of fruit.

SPECIES

The species indicated as the Latin name in the Annex shall be used in the preparation of fruit juices, fruit purées and fruit nectars bearing the product name for the applicable fruit. For the fruit species not included in the Annex, the correct Latin or common name shall apply

5. ESSENTIAL COMPOSITION AND QUALITY FACTORS

5.1 COMPOSITION

5.1.1 Basic Ingredients

- (a) For directly expressed fruit juices, the Brix level shall be the Brix as expressed from the fruit and the soluble solids content of the single strength juice shall not be modified, except by blending with the juice of the same kind of fruit.
- (b) The preparation of fruit juice that requires reconstitution of concentrated juices must be in accordance with the minimum Brix level established in the Annex, exclusive of the solids of any added optional ingredients and additives. If there is no Brix level specified in the Table, minimum Brix shall be calculated on the basis of the soluble solids content of the single strength juice used to produce such concentrated juice.
- (c) For reconstituted juice and nectar, the potable water used in reconstitution shall, at a

minimum, meet the water quality specified in Bhutan.

5.1.2 Other Permitted Ingredients

Except as otherwise provided, the following shall be subject to ingredient labelling requirements:

(a) Sugars with less than 2% moisture as defined in the *Standard for Sugars* (CODEX STAN 212-1999): sucrose, dextrose anhydrous, glucose, fructose, may be added to all products defined in Section 4 (The addition of ingredients listed in Section 5.1.2(a) and 5.1.2(b) applies only to products intended for sale to the consumer or for catering purposes).

(b) Syrups (as defined in the *Standard for Sugars*), liquid sucrose, invert sugar solution, invert sugar syrup, fructose syrup, liquid cane sugar, isoglucose and high fructose syrup may be added only to fruit juice from concentrate, as defined in Section 4, concentrated fruit juices, as defined in Section 4.

(c) Subject to national legislation of the importing country, lemon (*Citrus limon* (L.) Burm. f. *Citrus limonum* Rissa) juice or lime (*Citrus aurantifolia* (Christm.)) juice, or both, may be added to fruit juice up to 3 g/l anhydrous citric acid equivalent for acidification purposes to unsweetened juices (Fruit juice, Fruit juice from concentrate, water extracted fruit juice, Fruit puree and concentrated fruit puree), all as defined in as defined in Section 4 .

(d) The addition of both sugars (defined in subparagraphs (a) and (b) and acidifying agents to the same fruit juice is prohibited.

(e) Subject to national legislation of the importing country, the juice from *Citrus reticulata* and/or hybrids with *reticulata* may be added to orange juice in an amount not to exceed 10% of soluble solids of the *reticulata* to the total of soluble solids of orange juice.

(f) Salt and spices and aromatic herbs (and their natural extracts) may be added to tomato juice.

(g) For the purposes of product fortification, essential nutrients (e.g. vitamins, minerals) may be added to products defined in Section 4. Such additions shall comply with the texts of the Codex Alimentarius Commission established for this purpose.

5.2 QUALITY CRITERIA

The fruit juices shall have the characteristic colour, aroma and flavour of juice from the same kind of fruit from which it is made.

The fruit shall retain no more water from washing, steaming or other preparatory operations than technologically unavoidable.

5.3 AUTHENTICITY

Authenticity is the maintenance of the product's essential physical, chemical, organoleptic, and nutritional characteristics of the fruit(s) from which it comes.

5.4 VERIFICATION OF COMPOSITION, QUALITY AND AUTHENTICITY

Fruit juices and nectars should be subject to testing for authenticity, composition, and quality where applicable and where required.

The verification of a sample's authenticity/quality can be assessed by comparison of data for the sample, generated using appropriate methods included in the Standard, with that produced for fruit of the same type and from the same region, allowing for natural variations, seasonal changes and for variations occurring due to processing.

6. FOOD ADDITIVES

Food additives added should be as per Bhutan Mandatory Standard for Food Additives. In addition, in case the Bhutan Mandatory Standard of Food Additives does not contain the information of food additives needed to be added in fruit juices/ nectars, the food additives listed in Table 1 and 2 of the General Standard for Food Additives of Codex may be permitted. Also the processing aids mentioned in the Codex General Standard of fruit juices may be permitted in quantities as per maximum levels of food use in line with Good Manufacturing Practices.

7. MICROBIOLOGICAL REQUIREMENTS

The product shall be free from microorganisms capable of development under normal conditions of storage.

The product should not contain any microbial metabolites in amounts which may pose a hazard to human health.

The product shall be free from pathogenic microorganisms.

10.1 CONTAINERS DESTINED FOR THE FINAL CONSUMER

10.1 .1The Name of the Product

The name of the product shall be the name of the fruit used as defined in Section4. The fruit name shall be filled in the blank of the product name mentioned under this Section. These names may only be used if the product conforms to the definition in Section 4 or which otherwise conform to this Standard.

- i. Fruit Juice defined under Section 4
- ii. The name of the product shall be “ _____ juice” or “juice of _____”.
- iii. Concentrated Fruit Juice defined under Section 4
- iv. The name of the product shall be “concentrated _____ juice” or “ _____ juice concentrate”.
- v. Water Extracted Fruit Juice defined under Section 4
- vi. The name of the product shall be “water extracted _____ juice” or “water extracted juice of _____”.
- vii. Fruit Purée defined under Section 4
- viii. The name of the product shall be “ _____ purée” or “Purée of _____”.
- ix. Concentrated Fruit Purée defined under Section 4
- x. The name of the product shall be “concentrated _____ purée” or “ _____ purée concentrated”.
- xi. Fruit nectars defined under section 4
- xii. The name of the product shall be “ _____ nectar” or “nectar of _____”.
- xiii. In the case of fruit juice products, fruit nectar and mixed fruit juice/nectar (as defined in Section 4) manufactured from two or more fruits, the product name shall include the names of the fruit juices comprising the mixture in descending order of proportion by weight (m/m) or the words "fruit juice blend", " a fruit juice mixture", "mixed fruit juice" or other similar wording.
- xiv. For fruit juices, fruit nectars and mixed fruit juice/nectar, if the product contains or is prepared from concentrated juice and water or the product is prepared from juice from concentrate and directly expressed juice or nectar, the words “from concentrate” or “reconstituted” must be entered in conjunction with or close to the product name, standing out well from any background, in clearly visible characters, not less than 1/2 the height of the letters in the name of the juice.

10.1.2 Additional Requirements

The following additional specific provisions apply:

- i. For fruit juices, fruit nectars, fruit purée and mixed fruit juices/nectars/purées, if the product is prepared by physically removing water from the fruit juice in an amount sufficient to increase the Brix level to a value at least 50% greater than the Brix value

- established for reconstituted juice from the same fruit, as indicated in table of the Annex, it shall be labeled “concentrated”.
- ii. For products defined in Sections 4 where one or more of the optional sugar or syrup ingredients are added, the product name shall include the statement called “sugar(s) added” after the fruit juice or mixed fruit juice’s name. When food additive sweeteners are employed as substitutes for sugars in fruit nectars and mixed fruit nectars, the statement, “with sweetener(s),” shall be included in conjunction with or in close proximity to the product name.
 - iii. Where concentrated fruit juice, concentrated fruit purée, concentrated fruit nectar or mixed concentrated fruit juice/nectar/purée is to be reconstituted before consumption as fruit juice, fruit purée, fruit nectar or mixed fruit juices/nectars/purées, the label must bear appropriate directions for reconstitution on a volume/volume basis with water to the applicable Brix value in the Annex for reconstituted juice.
 - iv. Distinct varietal denominations may be used in conjunction with the common fruit names on the label where such use is not misleading.
 - v. Fruit nectars and mixed fruit nectars must be conspicuously labeled with a declaration of “juice content __%” with the blank being filled with the percentage of purée and/or fruit juice computed on a volume/volume basis. The words “juice content __%” shall appear in close proximity to the name of the product in clearly visible characters, not less than 1/2 the height of the letters in the name of the juice.
 - vi. An ingredient declaration of “ascorbic acid” when used as an antioxidant does not, by itself, constitute a “Vitamin C” claim.
 - vii. Any added essential nutrients declaration should be labeled in accordance with the *General Guidelines on Claims* (CAC/GL 1-1979), *Guidelines on Nutrition Labelling* (CAC/GL 2-1985) and the *Guidelines for Use of Nutrition Claims* (CAC/GL 23-1997).
 - viii. For fruit nectars in which a food additive sweetener has been added in order to replace wholly or in part the added sugars or other sugars or syrups, including honey and/or sugars derived from fruits as listed in Sections 3.1.2(a) and (b), any nutrient content claims related to the reduction in sugars should conform to the *General Guidelines on Claims* (CAC/GL 1-1979), *Guidelines for Use of Nutrition Claims* (CAC/GL 23-1997)

and *Guidelines on Nutrition Labelling (CAC/GL 2-1985)*.

- ix. A pictorial representation of fruit(s) on the label should not mislead the consumer with respect to the fruit so illustrated.
- x. Where the product contains added carbon dioxide the term “carbonated” or “sparkling” shall appear on the label near the name of the product.
- xi. Where tomato juice contains spices and/or aromatic herbs in accordance with Section 3.1.2(f), the term “spiced” and/or the common name of the aromatic herb shall appear on the label near the name of the juice.
- xii. Pulp and cells added to juice over that normally contained in the juice shall be declared in the list of ingredients. Aromatic substances, volatile flavour components, pulp and cells added to nectar over that normally contained in the juice shall be declared in the list of ingredients.

10.2 NON-RETAIL CONTAINERS

Information for non-retail containers not destined to final consumers shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, net contents and the name and address of the manufacturer, packer, distributor or importer, as well as storage instructions, shall appear on the container, except that for tankers the information may appear exclusively in the accompanying documents.

However, lot identification, and the name and address of the manufacturer, packer, distributor or importer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

ANNEX 1

Minimum Brix level for reconstitutes Juice and reconstituted Puree and minimum juice and /or Puree content for fruit nectars (% v/v) at 20°C.

Latin name	Common name of fruits	Minimum Brix Level for Reconstituted Fruit Juices and Reconstituted Purée	Minimum Juice and/or Purée Content (% v/v) for Fruit Nectars

<i>Ananus comosus, A. sativus</i>	Pine apple	12.8	40
<i>Anona squamosa</i>	Sugar apple	14.5	25
<i>Averrhoa carambola</i>	Carambola/ Star fruit	7.5	25
<i>Citrullus lunatus</i>	Water melon	8.0	40
<i>Citrus aurantifolia</i>	Lime	8.0	-
<i>Citrus lemon/ C.limomum</i>	Lemon	8.0	-
<i>Cirus paradisica, C.grandis</i>	Grape fruit	10.0	50
<i>Citrus reticulate</i>	Mandarin/Tangerine	11.8	50
<i>Citrus sinensis</i>	Orange	11.2-11.8	50
<i>Cucumis melo</i>	Melon	8.0	35
<i>Cucumis melo var inodorus</i>	Casaba Melon	7.5	25
<i>Cucumis melo var inodorus</i>	Honey dew melon	10.0	25
<i>Empeterum nigrum</i>	Crow berry	6.0	25
<i>Eugenia uniflora</i>	Suriname cherry	6.0	25
<i>Ficus carica</i>	Fig	18.0	25
<i>Fragaria ananasa</i>	Straw berry	7.5	40
<i>Hippohae rhamnoides</i>	Buckthorn berry	6.0	25
<i>Litchi chinensis</i>	Litchi	11.2	20
<i>Lycopersicon esculentum</i>	Tomato	5.0	50
<i>Malus domestica</i>	Apple	10.0-11.5	50
<i>Malus prunifolia</i>	Crab apple	15.4	25
<i>Mangifera indica</i>	Mango	13.5	25
<i>Musa spp.</i>	Banana	12.0	25
<i>Passiflora edulis</i>	Passion fruit	-	25
<i>Prunus armenicana</i>	Apricot	11.5	40
<i>Prunus avium</i>	Sweet cherry	20.0	25
<i>Prunus cerasus</i>	Sour cherry	14.0	25
<i>Prunus cerasus var</i>	Stones baer	17.0	25
<i>Stevenbaer</i>	Plum	12.0	50
<i>Prunus domestica var</i>	Prune	18.5	25

<i>domestica</i>	Qustsche	12.0	25
<i>Prunus domestica</i> var	Nectarine	10.5	40
<i>domestica</i>	Peach	10.5	40
<i>Prunus domestica</i> var	Sloe	6.0	25
<i>domestica</i>	Guava	8.5	25
<i>Prunus persica</i> var	Pome granate	12.0	25
<i>nucipersica</i>	Pear	12.0	40
<i>Prunus versica</i> var <i>versica</i>	Black currant	11.0	30
<i>Prunus spinosa</i>			
<i>Psidium guajava</i>			
<i>Punica granatum</i>	Red / White currant	10.0	30
<i>Pyrus communis</i>	Goosberry	7.5	30
<i>Ribes nigrum</i>	Rose hip	9.0	40
	Cloud berry	9.0	30
	Black berry	9.0	30
<i>Ribes rubrum</i>			
<i>Ribes uva crisper</i>	Dew berry	10.0	25
<i>Rosa</i> sp.	Red raspberry	8.0	40
<i>Rubus chamaemorus</i>	Logan berry	10.5	25
<i>Rubus fruitcosus</i>	Black raspberry	11.1	25
	Boysun berry	10.0	25
<i>Rubus hispidosus</i>			
<i>Rubus idaeus, R strigosus</i>	Young berry	10.0	25
<i>Rubus loganobaccus</i>	Elder berry	10.5	50
<i>Rubus occidentalis</i>	Rowan berry	11.0	30
<i>Rubus ursimus</i>	Tamarind	13.0	Adequate content
<i>Rubus vitifolius, R. idaeus,</i>			To reach min.
<i>R. baileyanus</i>	Cran berry	10.0	Acidity 0.5
<i>Sambucus nigra, S. candensis</i>			7.5

<i>Sorbus aucuparia</i>			
<i>Tamarindus indicus</i>	Bilburn/blue berry	10.0	
	Lingon berry	10.0	40
<i>Vaccinium macroncarpon, V.</i>	Grapes	16.0	25
<i>Occicoccum</i>			50
<i>Vaccinium myrtylus,</i>			
<i>V.corymbosum,</i>			
<i>V.angustifolim</i>			
<i>Vaccinium idaea</i>			
<i>Vitis vinifera or hybrid</i>			
<i>thereof</i>			
<i>Vitis labrusca or hybrid</i>			
<i>thereof</i>			