US 818

# UGANDA STANDARD

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## Fruit juices and nectars — Specification

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**Compliance with this standard does not, of itself confer immunity from legal obligations**

**A Uganda Standard does not purport to include all necessary provisions of a contract. Users are responsible for its correct application**



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# Foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Tourism, Trade and Industry established under Cap 327, of the Laws of Uganda. UNBS is mandated to co-ordinate the elaboration of standards and is

(a) a member of International Organisation for Standardisation (ISO) and

(b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and

(c) the National Enquiry Point on TBT/SPS Agreements of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

This Uganda Standard has been developed as a result of a need to provide guidance to industry in production and regulation of fruits juices and related products. This Uganda Standard is based on the Codex general standard for fruit juices and nectars (CODEX STAN 247-2005).

This Uganda Standard, US 818:2009, was developed by the subcommittee on Fruits, spices and vegetables and related products and processes (SC 4) under supervision of technical committee on Food and Agriculture standards (UNBS/TC 2).

This standard is issued in conjunction with the following standards:

- US 62-1 Specification for fruit drinks - Part 1: Fruit juice drinks
- US 62-2 Standard specification for fruit drinks - Part 2: Comminuted fruit drinks

This standard replaces the following standards:

- US 19 CS 139:1993 Standard specification for concentrated pineapple juice with preservatives for manufacturing
- US 23 CS 47:1993 Standard specification for lemon juice preserved exclusively by physical means
- US 25 CS 85 Standard specification for pineapple juice preserved exclusively by physical means
- US 26 CS 138:1993 Standard specification for pineapple juice concentrate (preserved exclusively by physical means
- US 56:2000 Standard specification for orange juice preserved exclusively by physical means
- US 58:2000 Standard specification for black currant juice (preserved exclusively by physical means)
- US 59:2000 Standard specification for black currant concentrate (preserved exclusively by physical means)
- US EAS 66-2:2000 Tomato products - Specification - Part 2: Tomato juice
- US EAS 66-3: 2000 Tomato products - Specification - Part 3: Tomato concentrates (puree and paste)

# Fruit juices and nectars — Specification

## 1 Scope

This Uganda Standard specifies requirements and methods of sampling and test for fruits juices, nectars and concentrated fruit juices intended for direct human consumption or for further processing.

## 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.

US 7, *General standard for labeling of prepackaged foods*

US 28, *Code of practice for hygiene in the food and drink manufacturing industry*

US 45, *General standard for food additives*

US 201, *Drinking (Potable) water — Specification*

US 500, *General requirements for nutrition labelling*

US 508, *General requirements for nutrition and health claims*

US 566, *Use of nutrition terms — Requirements*

US 570, *Code of hygienic practice for dried fruits*

US 738, *General standard for contaminants and toxins in foods*

US 217-2/EAS 217-2, *Methods for the microbiological examination of foods — Part 2: General Guidance for the Enumeration of Micro-Organisms-Colony Count Technique at 30 °C*

US 217-8/EAS 217-8, *Methods for microbiological examination of foods —Part 8: Enumeration of yeasts and moulds*

US ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

US ISO 763, *Fruits and vegetable products — Determination of ash insoluble in hydrochloric acid*

US ISO 2448, *Fruit and vegetable products — Determination of ethanol content*

US ISO 2172, *Fruit juice — Determination of solids content — Pyknometric method*

US ISO 2173, *Fruit and vegetable products — Determination of soluble solids — Refractometric method*

US ISO 5522, *Fruits, vegetables and derived products – Determination of total sulphur dioxide content*

 

US ISO 5523, *Liquid fruit and vegetable products – Determination of sulphur dioxide content – (Routine method)*

## 3 Terms and definitions

For the purposes of this standard the following terms and definitions shall apply.

**3.1**
**authenticity**
maintenance of the product's essential physical, chemical, organoleptical, and nutritional characteristics of the fruit(s) from which it comes

**3.2**
**brix**
soluble solids content of the juice

## 4 Description

### 4.1 Species description

The species indicated as the botanical name in the Table 1 shall be used in the preparation of fruit juices, fruit purées and fruit nectars bearing the product name for the applicable fruit.

For fruit species not included in the Table 1, the correct botanical or common name shall apply.

### 4.2 Product description

#### 4.2.1 Fruit juice

Fruit juice 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.

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, organoleptical 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 shall be obtained by suitable physical means, and all of which shall 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 obtained as follows:

a) fruit juice directly expressed by mechanical extraction processes; and

b) fruit juice from concentrate by reconstituting concentrated fruit juice (4.2.2) with potable water that meets the requirements of US 201.

 

### 4.2.2 Concentrated fruit juice

Concentrated fruit juice is the product that complies with the definition given in 3.2.1, 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 Table 1.

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 (see Note 1 in Clause 5) aromatic substances and volatile flavour components, all of which shall be obtained by suitable physical means, and all of which shall be recovered from the same kind of fruit. Pulp and cells (see Note 2 in Clause 5) obtained by suitable physical means from the same kind of fruit may be added.

### 4.2.3 Water extracted fruit juice

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,
- dehydrated whole fruit; or
- dehydrated/powdered fruit juice

Water extracted fruit juice may be concentrated and reconstituted.

The solids content of the finished product shall meet the minimum Brix level for reconstituted juice specified in the Table 1.

### 4.2.4 Fruit purée for use in the manufacture of fruit juices and nectars

Fruit purée for use in the manufacture of fruit juices and nectars is the unfermented but fermentable product obtained by suitable processes for example, by sieving, grinding, and milling the edible part of the whole or peeled fruit without removing the juice. The fruit shall be sound, appropriately mature, and fresh or preserved by physical means or by treatment(s) applied in accordance with the applicable provisions of the Codex Alimentarius Commission.

Fruit purée may have restored aromatic substances and volatile flavour components, all of which shall be obtained by suitable physical means, and all of which shall 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.

### 4.2.5 Concentrated fruit purée for use in the manufacture of fruit juices and nectars

Concentrated fruit purée for use in the manufacture of fruit juices and nectars 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 Table 1.

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

### 4.2.6 Dehydrated/powdered fruit juice (fruit juice powder)

Dehydrated/powdered fruit juice is the product obtained from fruit juice of one or more kinds by the physical removal of virtually all the water content.

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#### 4.2.7 Fruit nectar

Fruit nectar is the unfermented but fermentable product obtained by adding water with or without the addition of sugars (5.1.2.1,syrups (5.1.2.2) and/or honey (5.1.2.3) , and/or food additive sweeteners (US 45) to products described in 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.2.5 or to a mixture of those products.

Aromatic substances, volatile flavour components, pulp and cells all of which shall be recovered from the same kind of fruit and be obtained by suitable physical means may be added. That product moreover shall conform to the requirements defined for fruit nectars in Table 1.

A mixed fruit nectar is obtained from two or more different kinds of fruit.

NOTE 1 Introduction of aromas and flavours are allowed to restore the level of aromatic substances and volatile flavour components in accordance with good manufacturing practices (GMP).

NOTE 2 For citrus fruits, pulp or cells are the juice sacs obtained from the endocarp.

## 5 Essential composition and quality factors

### 5.1 Composition

#### 5.1.1 Basic Ingredients

##### 5.1.1.1 Directly expressed fruit juices

The Brix level for directly expressed fruit juices 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 blendings with the juice of the same kind of fruit.

##### 5.1.1.2 Reconstituted juice and nectar

The Brix level for the fruit juice that requires reconstitution of concentrated juices or dehydrated/powdered fruit juice (fruit juice powder) shall be in accordance with the minimum Brix level established in Table 1, exclusive of the solids of any added optional ingredients and additives.

If there is no Brix level specified in Table 1, the minimum Brix shall be calculated on the basis of the soluble solids content of the single strength juice used to produce such concentrated juice.

The potable water used in reconstitution shall, at a minimum, meet the requirements of US 201.

#### 5.1.2 Other permitted ingredients

##### 5.1.2.1 Sugars

Sucrose, glucose (dextrose anhydrous) or fructose with less than 2 % moisture may be added only to products intended for sale to the consumer or for catering purposes.

Both sugars and acidifying agents (listed in US 45) shall not be added to the same fruit juice.

 

**Table 1– Requirements for name and Brix content of common fruit juices and nectars**

| Botanical Name | Fruit's Common Name | Minimum Brix level for reconstituted fruit juices and reconstituted purée | Minimum Juice and/or purée content (% v/v)[b] for fruit nectars |
|---|---|---|---|
| *Actinidia deliciosa* (A. Chev.) C. F. Liang & A. R. Fergoson | Kiwi | ( * )[b] | ( * )[c] |
| *Anacardium occidentale* L. | Cashewapple | 11.5 | 25.0 |
| *Ananas comosus (L.) Merrill Ananas sativis L. Schult. f.* | Pineapple | 10 | 40.0 |
| *Annona muricata* L. | Soursop | 14.5 | 25.0 |
| *Annona squamosa* L | Sugar Apple | 14.5 | 25.0 |
| *Averrhoa carambola* L. | Carambola / Starfruit | 7.5 | 25.0 |
| *Carica papaya* L. | Papaya | ( * )[b] | 25.0 |
| *Chrysophyllum cainito* | Star Apple | ( * )[b] | ( * )[c] |
| *Citrullus lanatus (Thunb.)* Matsum. & Nakai var. Lanatus | Water Melon | 8.0 | 40.0 |
| *Citrus aurantifolia* (Christm.) (swingle) | Lime | 8.0[c] | According to the legislation of the importing country |
| *Citrus aurantium* L. | Sour Orange | ( * )[b] | 50.0 |
| *Citrus limon* (L.) Burm. *f. Citrus limonum* Rissa | Lemon | 8.0[c] | According to the legislation of the importing country |
| *Citrus paradisi* Macfad | Grapefruit | 10.0[c] | 50.0 |
| *Citrus paradisi, Citrus grandis* | Sweetie grapefruit | 10.0 | 50.0 |
| *Citrus reticulata* Blanca | Mandarine/ Tangerine | 11.8[c] | 50.0 |
| *Citrus sinensis (L.)* | Orange | 10. | 50.0 |
| *Cocos nucifera* L.[d] | Coconut | 5.0 | 25.0 |
| *Cucumis melo* L. | Melon | 8.0 | 35.0 |
| *Cucumis melo* L subsp. *melo* var. *inodorus* H. Jacq. | Casaba Melon | 7.5 | 25.0 |
| *Cucumis melo* L. subsp. *melo* var. *inodorus* H. Jacq | Honeydew Melon | 10.0 | 25.0 |
| *Cydonnia oblonga* Mill. | Quince | 11.2 | 25.0 |
| *Diospyros khaki* Thunb. | Persimmon | ( * )[b] | 40.0 |
| *Empetrum nigrum* L. | Crowberry | 6.0 | 25.0 |
| *Eribotrya japonesa* | Loquat | ( * )[b] | ( * )[c] |
| *Eugenia syringe* | Guavaberry Birchberry | ( * )[b] | ( * )[c] |
| *Eugenia uniflora* Rich. | Suriname Cherry | 6.0 | 25.0 |

[a] If a juice is manufactured from a fruit not mentioned in the above list, it shall, nevertheless, comply with all the provisions of the Standard, except that the minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

[b] No data currently available. The minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

[c] Acid corrected as determined by the method for total titratable acids in Clause 10 on Methods of Analysis.

[d] This product is 'coconut water' which is directly extracted from the coconut without expressing the coconut meat

| Botanical Name | Fruit's Common Name | Minimum Brix level for reconstituted fruit juices and reconstituted purée | Minimum Juice and/or Purée Content (% v/v)[b] for Fruit Nectars |
|---|---|---|---|
| *Ficus carica* L. | Fig | 18.0 | 25.0 |
| *Fortunella* Swingle sp. | Kumquat | ( * )[b] | ( * )[c] |
| *Fragaria x. ananassa* Duchense(*Fragaria chiloensis* Duchesne *x Fragaria virginiana* Duchesne) | Strawberry | 7.5 | 40.0 |
| *Genipa americana* | "Genipap" | 17.0 | 25.0 |
| *Hippophae elaeguacae* | Sea Buckthorn | ( * )[b] | 25.0 |
| *Hipppohae rhamnoides* L. | Buckthornberry = Sallow-thornberry | 6.0 | 25.0 |
| *Litchi chinensis* Sonn. | Litchi/Lychee | 11.2 | 20.0 |
| *Lycopersicum esculentum* L. | Tomato | 5.0 | 50.0 |
| *Malpighia sp.* (Moc. & Sesse) | Acerola (West Indian Cherry) | 6.5 | 25.0 |
| *Malus domestica* Borkh. | Apple | 10 | 50.0 |
| *Malus prunifolia* (Willd.) Borkh. *Malus sylvestris* Mill. | Crab Apple | 15.4 | 25.0 |
| *Mammea americana* | Mammee Apple | ( * )[b] | ( * )[c] |
| *Mangifera indica* L | Mango | 13.5 | 25.0 |
| *Morus sp.* | Mulberry | ( * )[b] | 30.0 |
| *Musa species* including *M. acuminata* and *M. paradisiaca* but excluding other plantains | Banana | 12 | 25.0 |
| *Passiflora edulis* | Yellow Passion Fruit | ( * )[b] | ( * )[c] |
| *Pasiflora edulis Sims. f. edulus Passiflora edulis Sims. f. Flavicarpa O. Def.* | Passion Fruit | 12[c] | 25.0 |
| *Passiflora quadrangularis* | Passion Fruit | ( * )[b] | ( * )[c] |
| *Phoenix dactylifera* L. | Date | 18.5 | 25.0 |
| *Pouteria sapota* | Sapote | ( * )[b] | ( * )[c] |
| *Prunus armeniaca* L. | Apricot | 11.5 | 40.0 |
| *Prunus avium* L. | Sweet Cherry | 20.0 | 25.0 |
| *Prunus cerasus* L. | Sour Cherry | 14.0 | 25.0 |
| *Prunus cerasus* L. cv. Stevnsbaer | Stonesbaer | 17.0 | 25.0 |
| *Prunus domestica* L. subsp. *domestica* | Plum | 12.0 | 50.0 |
| *Prunus domestica* L. subsp. *domestica* | Prune | 18.5 | 25.0 |
| *Prunus domestica* L. subsp. *domestica* | Quetsche | 12.0 | 25.0 |

[a] If a juice is manufactured from a fruit not mentioned in the above list, it shall, nevertheless, comply with all the provisions of the standard, except that the minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

[b] No data currently available. The minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

[c] Acid corrected as determined by the method for total titratable acids in the Section on Methods of Analysis.

[d] This product is 'coconut water' which is directly extracted from the coconut without expressing the coconut meat

| Botanical Name | Fruit's Common Name | Minimum Brix level for reconstituted fruit juices and reconstituted purée | Minimum Juice and/or Purée Content (% v/v)[b] for Fruit Nectars |
|---|---|---|---|
| *Prunus persica* (L.) Batsch var. *nucipersica* (Suckow) c. K. Schneid. | Nectarine | 10.5 | 40.0 |
| *Prunus persica* (L.) Batsch var. *persica* | Peach | 10.5 | 40.0 |
| *Prunus spinosa* L. | Sloe | 6.0 | 25.0 |
| *Psidium guajava* L. | Guava | 8.5 | 25.0 |
| *Punica granatum* L. | Pomegranate | 12.0 | 25.0 |
| *Pyrus arbustifolia* (L.) Pers. | Aronia/Chokeberry | (*)[b] | (*)[c] |
| *Pyrus communis* L. | Pear | 12.0 | 40.0 |
| *Ribes nigrum* L. | Black Currant | 11.0 | 30.0 |
| *Ribes rubrum* L. | Red Currant | 10.0 | 30.0 |
| *Ribes rubrum* L. | White Currant | 10.0 | 30.0 |
| *Ribes uva-crispa* | Red Gooseberry | (*)[b] | 30.0 |
| *Ribes uva-crispa* L. | Goosberry | 7.5 | 30.0 |
| *Ribes uva-crispa* L. | White Goosberry | (*)[b] | 30.0 |
| *Rosa canina* L. | Cynorrhodon | (*)[b] | 40.0 |
| *Rosa sp.* L. | Rosehip | 9.0 | 40.0 |
| *Rubus chamaemorus* L. | Cloudberry | 9.0 | 30.0 |
| *Rubus chamaemorus* L. *Morus* hybrid | Mulberry | (*)[b] | 40.0 |
| *Rubus fruitcosus* L. | Blackberry | 9.0 | 30.0 |
| *Rubus hispidus* (of North America) *R. caesius* (of Europe) | Dewberry | 10.0 | 25.0 |
| *Rubus idaeus* L. *Rubus strigosus* Michx. | Red Raspberry | 8.0 | 40.0 |
| *Rubus loganobaccus* L. H. Bailey | Loganberry | 10.5 | 25.0 |
| *Rubus occidentalis* L. | Black Raspberry | 11.1 | 25.0 |
| *Rubus ursinus* Cham. & Schltdl. | Boysenberry | 10.0 | 25.0 |
| *Rubus vitifolius x Rubus idaeus Rubus baileyanis* | Youngberry | 10.0 | 25.0 |
| *Sambucus nigra* L. *Sambucus canadensis.* | Elderberry | 10.5 | 50.0 |
| *Solanum quitoense* Lam. | "Lulo" | (*)[b] | (*)[c] |
| *Sorbus aucuparia* L. | Rowanberry | 11.0 | 30.0 |
| *Sorbus domestica* | Sorb | (*)[b] | 30.0 |
| *Spondia lutea* L. | "Cajá" | 10.0 | 25.0 |
| *Spondias tuberosa* Arruda ex *Kost.* | "Umbu" | 9.0 | 25.0 |
| *Syzygiun jambosa* | Pome Apple | (*)[b] | (*)[c] |
| *Tamarindus indica* | Tamarind (Indian date) | 13.0 | Adequate content to reach a minimum acidity of 0.5 |

[a] If a juice is manufactured from a fruit not mentioned in the above list, it shall, nevertheless, comply with all the provisions of the Standard, except that the minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

[b] No data currently available. The minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

[c] Acid corrected as determined by the method for total titratable acids in the Section on Methods of Analysis.

d This product is 'coconut water' which is directly extracted from the coconut without expressing the coconut meat

| Botanical Name | Fruit's Common Name | Minimum Brix Level for Reconstituted Fruit Juices and Reconstituted Purée | Minimum Juice and/or Purée Content (% v/v)[b] for Fruit Nectars |
|---|---|---|---|
| *Theobroma cacao* L. | Cocoa pulp | 14.0 | 50.0 |
| *Theobroma grandiflorum* L. | "Cupuaçu" | 9.0 | 35.0 |
| *Vaccinium macrocarpon* Aiton *Vaccinium oxycoccos* L. | Cranberry | 7.5 | 30.0 |
| *Vaccinium myrtillus* L. *Vaccinium corymbosum* L. *Vaccinium angustifolium* | Bilberry/Blueberry | 10.0 | 40.0 |
| *Vaccinium vitis-idaea* L. | Lingonberry | 10.0 | 25.0 |
| Vitis *Vinifera* L. or *hybrids thereof* Vitis *Labrusca* or *hybrids thereof* | Grape | 16.0 | 50.0 |
| | Other: High acidity | | Adequate content to reach a minimum acidity of 0.5 |
| | Other: High pulp content, or Strong flavour | | 25.0 |
| | Other: Low acidity, Low pulp content, or Low/medium flavour | | 50.0 |

[a] If a juice is manufactured from a fruit not mentioned in the above list, it shall, nevertheless, comply with all the provisions of the Standard, except that the minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

[b] No data currently available. The minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

[c] Acid corrected as determined by the method for total titratable acids in Clause 10 on Methods of Analysis.

[d] This product is 'coconut water' which is directly extracted from the coconut without expressing the coconut meat

### 5.1.2.2 Syrups

Syrups, 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 (4.2.1), concentrated fruit juices (4.2.2), concentrated fruit purée (4.2.5) and fruit nectars (4.2.6).

Both syrups and acidifying agents (listed in US 45) shall not be added to the same fruit juice.

### 5.1.2.3 Honey

Sugars derived from fruits and/or honey may be added only to fruit nectars (4.2.6).

### 5.1.2.4 Lemon and lime juice

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 as defined in 4.2.1, 4.2.2, 4.2.3, 4.2.4 and 4.2.5.

Lemon juice or limejuice, or both, may be added up to 5 g/L anhydrous citric acid equivalent to fruit nectars as defined in 4.2.6.

### 5.1.2.5 *Citrus reticulata* juice

The juice from *Citrus reticulata* and/or hybrids with r*eticulata* 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.

#### 5.1.2.6 Salt and spices and aromatic herbs

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

#### 5.1.2.7 Nutrients

For the purposes of product fortification, essential nutrients such as vitamins and minerals may be added to products fruit juice (4.2.1). Such additions shall comply with national legislation established for this purpose.

NOTE Any optional ingredients added are subject to ingredient labelling requirements (see Clause 9).

### 5.2 Quality criteria

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

The fruit juices and fruit nectars shall conform to the requirements in Table 2.

**Table 2 — Requirements for fruits juices and nectars**

| Characteristic | Requirement | Method of test |
|---|---|---|
| Ethanol content, mg/kg, max. | 3 | US ISO 2448 |
| Acid insoluble ash, mg/kg, max. | 20 | US ISO 763 |
| Brix, minimum | See Table 1 | US ISO 2172<br>US ISO 2173 |

### 5.3 Verification of composition, quality and authenticity

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

The verification of a sample's authenticity/quality may 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 and processing aids

Food additives listed in Tables 1 and 2 of the US 45 in food categories 14.1.2.1 (Fruit juice), 14.1.2.3 (Concentrates for fruit juice), 14.1.3.1 (Fruit nectar) and 14.1.3.3 (Concentrates for fruit nectar) may be used in foods subject to this standard.

Food processing aids listed in Table 3 may be used in the processing of products subject to this standard.

 

**Table3 – Maximum level of use of food processing aids in line with good manufacturing practices**

| Function | Substance |
|---|---|
| Antifoaming Agent | Polydimethylsiloxane[a)] |
| Clarifying Agents | Adsorbent clays (bleaching, natural or activated earths) |
| | Adsorbent resins |
| | Activated carbon (only from plants) |
| | Bentonite |
| | Calcium hydroxide[b)] |
| | Cellulose |
| | Chitosan |
| | Colloidal silica |
| | Diatomaceous earth |
| | Gelatin (from skin collagen) |
| | Ion exchange resins (cation and anion) |
| Filtration Aids | Isinglass[c)] |
| Flocculating Agents | Kaolin |
| | Perlite |
| | Polyvinylpolypyrrolidone |
| | Potassium casseinate[c)] |
| | Potassium tartrate[b)] |
| | Precipitated calcium carbonate[b)] |
| | Rice hulls |
| | Silicasol |
| | Sodium caseinate[c)] |
| | Sulphur dioxide[b), d)] |
| | Tannin |
| Enzyme preparations[e] | Pectinases (for breakdown of pectin),<br>Proteinases (for breakdown of proteins),<br>Amylases (for breakdown of starch) and<br>Cellulases (limited use to facilitate disruption of cell walls). |
| Packing gas[f] | Nitrogen<br>Carbon dioxide |

a) 10 mg/L is the maximum residue limit of the compound allowed in the final product.

b) Only in grape juice

c) Use of these processing aids should take into account their allergenic potential. If there is any carry over of these processing aids into finished product, they are subject to ingredient declaration in accordance with US 7.

d) 10 mg/L maximum limit (as residual $SO_2$) when determined in accordance with US ISO 5522 and US ISO 5523

e) Enzyme preparations may be used as processing aids provided these preparations do not result in a total liquefaction and do not substantially affect the cellulose content of the processed fruit.

f) May also be used for example, for preservation

# 7 Contaminants

## 7.1 Pesticide residues

The products covered by the provisions of this standard shall conform to those maximum residue limits for pesticides established by the Codex Alimentarius Commission for these products.

## 7.2 Other contaminants

The products covered by the provisions of this standard shall conform to those maximum levels for contaminants and toxins in US 738.

# 8 Hygiene

**8.1** The products covered by the provisions of this Standard shall be prepared and handled in accordance with US 28 and other relevant Codes of Hygienic Practice and Codes of Practice.

**8.2** The products shall conform to microbiological criteria in Table 4.

**Table 4 – Microbiological limits in fruit juices and nectars**

| Microorganism | Limit | Method of test |
|---|---|---|
| Total plate count, (cfu/g), maximum | 1000 | US 217-2/EAS 217-2 |
| *Eschericia coli,* (cfu/g), maximum | Not detected | US ISO 7251 |
| Yeasts and moulds, (cfu/g), maximum | 30 | US 217-8/EAS 217-8 |

# 8 Packaging

The products covered by the provisions of this standard shall be packaged in clean food grade packaging material to protect the product from contamination. The packaging materials and process shall not contaminate the product or otherwise affect its technological, nutritional or sensory quality.

# 9 Labelling

## 9.1 General labeling requirements

The products covered by the provisions of this Standard shall be labelled in accordance with US 7, US 500, US 508 and US 566 and the requirements in 9.2, and 9.3.

## 9.2 Containers destined for the final consumer

### 9.2.1 Name of the product

#### 9.2.1.1 General

The name of the product shall bear the name of the fruit used as defined in 4.1.

The fruit name shall be filled in the blank of the product name mentioned under this clause. These names may only be used if the product conforms to the definition in 4.1 or which otherwise conform to this standard.

 

#### 9.2.1.2 Fruit Juice (4.2.1)

The name of the product shall be "_____ juice" or "juice of _____".

#### 9.2.1.3 Concentrated fruit juice (4.2.2)

The name of the product shall be "concentrated ____ juice" or "____ juice concentrate".

#### 9.2.1.4 Water extracted fruit juice (4.2.3)

The name of the product shall be "water extracted_____ juice" or "water extracted juice of _____".

#### 9.2.1.5 Fruit Purée (4.2.4)

The name of the product shall be "_____ purée" or "Purée of _____".

#### 9.2.1.6 Concentrated Fruit Purée (4.2.5)

The name of the product shall be "concentrated _____ purée" or " _____ purée concentrated".

#### 9.2.1.7 Fruit Nectars (4.2.6)

The name of the product shall be "____ nectar" or "nectar of ____".

#### 9.2.1.8 Fruit juice blend

In the case of fruit juice products (4.1) 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.

#### 9.2.1.9 Products from concentrate

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" shall be entered in conjunction with or close to the product name, standing out well from any background, in clearly visible characters, not less than half the height of the letters in the name of the juice.

### 9.2.2 Additional requirements

#### 9.2.2.1 Products prepared by physically removing water from the fruit juice

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 1, it shall be labelled "concentrated".

#### 9.2.2.2 Products one or more of the optional sugar or syrup ingredients are added

For products defined in 4.2.1 to 4.2.5, where one or more of the optional sugar or syrup ingredients as 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.

#### 9.2.2.3 Products to be reconstituted before consumption

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 shall bear appropriate directions for reconstitution on a volume/volume basis with water to the applicable Brix value in the Table 1 for reconstituted juice.

#### 9.2.2.4 Varietal denominations

Distinct varietal denominations may be used in conjunction with the common fruit names on the label where such use is not misleading.

#### 9.2.2.5 Juice content declaration

Fruit nectars and mixed fruit nectars shall be conspicuously labelled 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 half the height of the letters in the name of the juice.

#### 9.2.2.6 Nutrition declaration

Any added essential nutrients declaration shall be labelled in accordance with US 500, US 508 and US 566.

An ingredient declaration of “ascorbic acid” when used as an antioxidant does not, by itself, constitute a “Vitamin C” claim.

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 any nutrient content claims related to the reduction in sugars shall conform to US 500, US 508 and US 566.

#### 9.2.2.7 Pictorial representations

A pictorial representation of fruit(s) on the label shall not mislead the consumer with respect to the fruit so illustrated.

#### 9.2.2.9 Products containing added carbon dioxide

Where the product contains added carbon dioxide the term “carbonated” or “sparkling” shall appear on the label near the name of the product.

#### 9.2.2.10 Tomato juice containing spices and/or aromatic herbs

Where tomato juice contains spices and/or aromatic herbs in accordance with Section 5.1.2.6 the term “spiced” and/or the common name of the aromatic herb shall appear on the label near the name of the juice.

#### 9.2.2.11 Juice containing added pulp, cells, aromatic substances or volatile flavour components

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.

 

### 9.3 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. For non retail containers, the information required shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, and the name and address of the manufacturer or packer shall appear on the container.

## 10 Methods of sampling and test

The products covered by the provisions of this standard shall be tested using appropriate standard methods declared in this standard. Other test may be performed using the methods of ISO standards, and the AOAC standards.

# Bibliography

[1] US 19 CS 139:1993 *Standard specification for concentrated pineapple juice with preservatives for manufacturing*

[2] US 23 CS 47:1993 *Standard specification for lemon juice preserved exclusively by physical means*

[3] US 25 CS 85 *Standard specification for pineapple juice preserved exclusively by physical means*

[4] US 26 CS 138:1993 *Standard specification for pineapple juice concentrate (preserved exclusively by physical means*

[5] US 56:2000 *Standard specification for orange juice preserved exclusively by physical means*

[6] US 58:2000 *Standard specification for black currant juice (preserved exclusively by physical means)*

[7] US 59:2000 *Standard specification for black currant concentrate (preserved exclusively by physical means)*

[8] US 62-1:1999 *Specification for fruit drinks - Part 1: Fruit juice drinks*

[9] US 62-2:1999 *Standard specification for fruit drinks - Part 2: Comminuted fruit drinks*

[10] US EAS 66-2:2000 *Tomato products - Specification - Part 2: Tomato juice*

[11] US EAS 66-3: 2000 *Tomato products - Specification - Part 3: Tomato concentrates (puree and paste)*

 

## Certification marking

Products that conform to Uganda standards may be marked with Uganda National Bureau of Standards (UNBS) Certification Mark shown in the figure below.

The use of the UNBS Certification Mark is governed by the Standards Act, and the Regulations made thereunder. This mark can be used only by those licensed under the certification mark scheme operated by the Uganda National Bureau of Standards and in conjunction with the relevant Uganda Standard. The presence of this mark on a product or in relation to a product is an assurance that the goods comply with the requirements of that standard under a system of supervision, control and testing in accordance with the certification mark scheme of the Uganda National Bureau of Standards. UNBS marked products are continually checked by UNBS for conformity to that standard.

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ICS 67.160.20

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