

# DRAFT UGANDA STANDARD

Second Edition  
2010-mm-dd

---

---

## Fruit juice drinks — Specification

---

---



**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**

© UNBS 2010

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilised in any form or by any means, electronic or mechanical, including photocopying and microfilm, without prior written permission from UNBS.

Requests for permission to reproduce this document should be addressed to

The Executive Director  
Uganda National Bureau of Standards  
P.O. Box 6329  
Kampala  
Uganda  
Tel: 256 31 262688/689  
Fax: 256 41 286 123  
E-mail: unbs@infocom.com

## Foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Tourism, Trade and Industry established by the Act of Parliament of 1983, 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 Draft Uganda Standard, DUS 62:2010, was developed by the subcommittee on Fruits, vegetables, spices and related products and processes (SC 4) under supervision of technical committee on Food and Agriculture standards (UNBS/TC 2).

This Draft Uganda Standard has been developed as a result of a need to provide guidance to industry in production and regulation of fruit juice drinks.

This draft Uganda standard is issued in conjunction with the following standards that cover other categories of (soft) drinks:

### a) Waters

- US 42, Packaged water other than natural mineral water – Specification
- US 43, Packaged natural mineral waters – Specification

### b) Fruit juices and nectars

- US 818, Fruit juices and nectars – Specification

### c) Carbonated and non carbonated soft drinks (water based flavoured drinks)

- DUS 47: 2010, Carbonated and non carbonated soft drinks – Specification

### d) Cereal based beverages

- US 871, Malted cereal beverages – Specification
- US 872, Fermented (non-alcoholic) cereal beverages – Specification

This Draft Uganda Standard (DUS 62:2010) once approved will cancel and replace the following standards which have been reviewed and combined in the current draft:

- US 62-1:2000, Specification for Fruit drinks Part 1: Fruit juice drinks
- US 62-2:2000, Specification for Fruit drinks Part 2: Comminuted fruit drinks



# **Fruit juice drinks — Specification**

## **1 Scope**

This draft Uganda Standard specifies the requirements and methods of sampling and test for drinks containing fruit juice.

This draft Uganda standard does not apply to the following categories of products for which other standards apply (see foreword):

- Waters (including packaged water and packaged natural mineral waters)
- Fruit juices and nectars;
- Vegetable juices and nectars; and
- Herbal juices (ready to drink and concentrates)
- Carbonated and non-carbonated soft drinks
- Cereal based beverages

## **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 the labelling of pre-packaged foods*

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

*US 45, General standard for food additives*

*US 201, Standard specifications for drinking (potable) water*

*US 500, Guidelines for nutritional labelling of foods*

*US 508, Guidelines for nutritional and health claims for food*

*US 566 Use of Nutrition claims — Requirements*

*US 738, General standard for contaminants and toxins in food and feed*

*DUS EAS 217-2, Microbiology of foods and animal feeding stuffs — Horizontal method for the enumeration of microorganisms — Part 2: Colony count technique at 30 °C*

*DUS EAS 217-4, Microbiology of foods and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Part 4: Most probable number technique*

*DUS EAS 217-8, Microbiology of foods and animal feeding stuffs — General guidance for enumeration of yeasts and moulds — Part 8: Colony count technique at 25 °C*

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

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

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

*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*

### **3 Terms and definitions**

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

#### **3.1**

##### **fruit**

is the edible part of the plant that contains the seeds.

#### **3.2**

##### **fruit juice**

liquid obtained from the edible part of sound, appropriately mature and fresh fruit or of fruit maintained in sound condition by suitable means.

#### **3.3**

##### **fruit pulp**

the soft, juicy part of a fruit.

#### **3.4**

##### **one gas (carbonation) volume**

the amount of carbon dioxide the water volume absorbs at the standard atmospheric pressure at 15.6 °C.

#### **3.5**

##### **carbonation**

the process of addition of carbon dioxide to fruit juice drinks to achieve the characteristics of the product at the specified temperature and pressure.

#### **3.6**

##### **standardised fruit juice**

a juice made by blending single strength fruit juices to a standard or reference brix value.

#### **3.7**

##### **single strength fruit juice**

a natural liquid obtained from fruit without any blending or modification.

#### **3.8**

##### **brix**

the soluble solids content of the juice.

### **4 Product description**

Fruit juice drink is a manufactured beverage intended for human consumption which contains fruit juice, fruit pulp or other edible parts of the fruits. It may be made from a single or a mixture of two or more fruits. It may be sweetened with nutritive and/or non nutritive (intense) sweeteners with or without added carbon dioxide and other permitted food additives. These beverages may be clear, cloudy, or may contain particulate matter (e.g. fruit pieces, crushed pips, seeds and/or peel of the fruit).

## 5 Essential quality and compositional requirements

### 5.1 Quality requirements – General

Fruit juice drinks shall possess a good body, uniform colour and a well-balanced flavour

Fruit juice drinks shall be free from off-odours and off-flavours when assessed using the normal sensory tests.

Fruit juice drinks shall be free from filth (impurities of animal origin, including dead insects) when assessed using the normal senses.

Fruit juice drinks shall be practically free from objectionable matter.

The appearance and consistency of the fruit juice drinks shall be uniform and characteristic of the product.

Clear fruit juice drinks shall be of sparkling clarity and shall remain so when stored under normal storage conditions.

Fruit juice drinks shall show no turbidity (except turbidity arising from the ingredients)

Fruit juice drinks shall show no sedimentation (except sedimentation arising from the ingredients)

### 5.2 Quality requirements – Ingredients

#### 5.2.1 Fruits

Fruit juice drink shall be prepared from fruits picked at the proper stage of maturity. The fruits used shall be free from damage or contamination as to make it unfit for human consumption.

#### 5.2.2 Sugar and syrups

Sugar and/or syrups may be used for regulating acidity and/or for sweetening fruit juice drink.

Sugar and/or syrups used in the manufacture of fruit juice drinks shall comply with the requirements of Uganda Standard for sugar.

The addition of both sugars and/or syrups and acidifying agents such as ascorbic acid, malic acid, citric acid or lemon juice to same fruit juice drink is not permitted.

#### 5.2.3 Water

The water used for the manufacture of fruit juice drinks shall be potable water and complying with the requirements of US 201.

#### 5.2.4 Lemon and lime juice

Lemon juice and/or concentrated lemon juice may be used as an acidifying agent in unsweetened fruit juice drinks

#### 5.2.5 Honey and fruit sugars

Sugars derived from fruits and/or honey may be added to fruit juice drinks.

#### 5.2.6 Citrus reticulata juice

The juice from *Citrus reticulata* and/or hybrids with *reticulata* may be added to orange juice drink

### 5.2.7 Salt, spices and aromatic herbs

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

### 5.2.8 Nutrients

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

## 5.3 Composition requirements

Fruit juice drinks shall conform to the compositional requirement in Table 1.

**Table 1: Compositional requirement of fruit juice drinks**

Characteristic	Requirement	Method of test
Ethanol content, mg/kg, max.	3	US ISO 2448
Acid insoluble ash, mg/kg, max.	20	US ISO 763
Fruit juice content <sup>a</sup> , %, Min.	5	Physical inspection or verification
Sugar content, g/l, max.	150	Physical inspection or verification
Lemon and/or lime juice, g/l, expressed as anhydrous citric acid, max.	5	Physical inspection or verification
<i>Citrus reticulata</i> juice, %, max.	Only in orange juice drink, 10	Physical inspection or verification
<sup>a</sup> The fruit juice shall be standardised fruit juice whose brix conforms to the limits in Table 4, Annex A.		

## 6 Food additives

Fruit juice drinks may contain only permitted additives in accordance with US 45. The following categories are commonly used in fruit juice drinks: Colorants, antifoaming agents, emulsifiers and stabilisers, flavour enhancers, preservatives, sweeteners - natural and synthetic, acidulants, antioxidants, bittering agents and buffering agents. These may be used singly or in combination.

## 7 Contaminants

### 7.1 Pesticide residues

Fruit juice drinks shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this product.

### 7.2 Other contaminants

Fruit juice drinks shall comply with those maximum levels for contaminants and toxins as stipulated in US 738



## 8 Hygiene

Fruit juice drinks shall be produced and handled in a hygienic manner in accordance with US 28. Fruit juice drinks shall conform to the limits for microbiological contaminants in Table 2.

**Table 2 – Microbiological limits for fruit juice drinks**

Microorganisms	Maximum limit	Method of Test
Total aerobic count, CFU/mL	25	DUS EAS 217-2
Total coliforms, per 100 mL	Absent	DUS EAS 217-4
<i>E. coli</i> , per 100 mL	Absent	US ISO 7251
Yeast and moulds, CFU/mL	5	DUS EAS 217-8

## 9 Packaging

Fruit juice drinks shall be packaged in food grade containers which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product.

The containers, including packaging material, shall be made of substances which are safe and suitable for their intended use. They shall not impart any toxic substance or undesirable odour or flavour to the product.

If packages are packed in crates or other outer containers, the crates or outer containers shall be clean, neat and in good repair, and shall be capable of protecting the packages from damage during normal handling and transportation. Only packages bearing the same date of manufacture or the same batch identification (as relevant) and containing products of the same kind shall be packed together in an outer container.

## 10 Weights and Measures

Fruit juice drinks shall be packaged in accordance with the Weights and Measures legislation.

## 11 Labelling

### 11.1 General

In addition to the requirements in US 7, the specific labelling requirements in clause 11.2 – 11.5 shall apply and shall be legibly and indelibly marked on the container.

### 11.2 Name of the product

- (a) The name of the product shall be "----- drink" or "----- fruit drink", or "----- juice drink", or "----- fruit juice drink", where "-----" shall be replaced with the common name of the fruit(s) from which the drink is made.
- (b) The following designations shall be used where applicable:
  - I. If the quantity of sugar or sugars added exceeds 15 g/l, the words "contains sugar" or "sugar added" or "sweetened with sugar" shall appear in close proximity to the name of the product followed by an indication of the maximum quantity of sugar added, calculated as dry matter and expressed in grams per litre.

- II. Where the product has been sweetened exclusively with non-nutritive sweeteners, the words "contains non-nutritive sweeteners" or "sweetened with non-nutritive sweeteners" shall appear in close proximity to the name of the product followed by an indication of the quantity of non-nutritive sweeteners added.
- III. If one or more juices in the fruit juice drink is made from concentrate (concentrated juice), this fact shall be declared in close proximity to the name of the product as follows: " ....." juice drink made from concentrate or " ..... juice drink made from concentrated ..... juice", where ..... shall be replaced with the name of the fruit from which the juice is obtained.
- IV. Where the drink contains more than one gas volume of carbon dioxide the term carbonated shall appear in close proximity to name of the product.
- V. Where two or more fruits, except where lemon juice is used as an acidifying agent, are used to produce the drink, the product names shall be supplemented by a list of the fruits used, in descending order of the volume of the fruit juices or purées included. However, in the case of products manufactured from three or more fruits, the indication of the fruits used may be replaced by the words 'several fruits' or a similar wording, or by the number of fruits used.
- VI. Where nutrients have been added to the fruit juice drink, that information shall appear in close proximity to the product name, standing out well from any background, in clearly visible characters.
- VII. Where the fruit juice drink contains particulate matter such as fruit pieces, crushed pips, seeds, peels, cells this information shall be declared on the label

### **11.3 Quantitative declaration of ingredients**

The labelling shall indicate the minimum content of fruit juice, fruit purée or any mixture of those ingredients, by the declaration 'fruit content: ... % minimum'. This information shall be located in the list of ingredients after the name of the fruit juice.

### **11.4 Nutritional labelling, nutrition and health claims**

Nutritional labelling, nutrition and health claims may be made in accordance with US 500, US 508, US 566.

### **11.5 Labelling prohibitions**

The following are prohibited:

- a) If the product is a drink that contains the juice whose colour, taste or other organoleptic properties have been modified to the extent that the original juice is no longer recognizable by the end processing or if the content of the juice is less than 5%, then the source fruits shall not be depicted on the label by sketch or pictorial presentations.
- b) No fruit or fruit juice may be represented pictorially on the label except the species of fruits or fruit juices present, in the fruit juice drink in amount constituting 5% or more, provided that where two or more fruits or fruit juices are used, the combination of the fruits or fruit juices whose content individually constitutes 5% or more may be used in the pictorial.

## 12 Sampling of fruit juice drinks

### 12.1 Scale of sampling

#### 12.1.1 Lot

All containers in a consignment belonging to the same batch of manufacture shall constitute a lot. If the consignment is declared to consist of different batches of manufacture, containers of the same batch shall be grouped together and each group so formed shall constitute a separate lot.

Sample shall be tested from each lot for ascertaining conformity to the requirements of this standard.

#### 12.1.2 Sample size

The number of containers to be selected from a lot for testing for microbiological and other requirements shall depend on the size of the lot and shall be in accordance with Table 3.

**Table 3 – Number of containers to be selected for sampling**

No. of containers in the lot	No. of containers to be selected (n)	
	Microbiological	Other tests
up to 1300	12	18
1301 to 3200	18	24
3201 and above	24	30

#### 12.1.3 Sampling method

The containers to be selected for testing shall be chosen at random from the lot by the following procedure. Starting from any container, count them as 1,2,3..... up to r. Every rth containers thus counted shall be withdrawn, r being the integral part of  $N/n$ , where N is the total number of containers in the lot and n is the total number of container to be chosen (Table 3).

## 12.2 Test samples and reference samples

### 12.2.1 Samples for microbiological tests

The sample containers selected for microbiological tests (see col. 2 of Table 3) shall be divided at random into three equal sets and labelled with all particulars of sampling. One of these sets of sample containers shall be for the buyer; another for the supplier and the third set is the reference.

### 12.2.2 Samples for other tests

The sample containers selected for other tests (see col. 3 of Table 3) shall be divided at random into three equal sets and labelled with all the particulars of the sample. One of these sets of sample containers shall be for the buyer, another for the supplier and third is the reference.

### 12.2.3 Reference samples

Referee samples shall consist of set of sample containers for microbiological tests (see 12.2.1) and a set of sample containers for other tests (see 12.2.2) and shall bear the seals of the buyer and supplier or as agreed to between the two.

### **13 Methods of analysis**

Test of fruit juice drinks shall be done in accordance with the Uganda Standards stated in the relevant clauses.

## Annex A (normative)

**Table 4: Degree Brix of commonly used fruit juices in Uganda**

Name of the fruit	Brix level as expressed from the fruit <sup>1</sup> , °Brix
Orange	10.0
Passion fruit	12.0
Grape fruit	10.0
Lime	8.0
Lemon	8.0
Tomato	5.0
Mango	13.5
Guava	8.5
Apple	10.0
Apricot	13.0
Papaya	10.2
Pineapple	10.0
Tamarind	13.0
Tangerine	11.8
Bananas	18.0

---

<sup>1</sup> The brix level of fruit juice as expressed from the fruit usually varies with the conditions of production, varieties and other factors. The brix level indicated here is the brix of the commonly available fruits. Such brix may be obtained by blending fruit juices from fruits of different origins, varieties or other factors.



## **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.

Further particulars of the terms and conditions of licensing may be obtained from the Executive Director, Uganda National Bureau of Standards.



