
Mixed fruit juices - Specification

Foreword

Standard has been prepared under the direction of the Technical committee for fruit and vegetable (TC-13) and published by Ethiopian Standard Agency (ESA).

The standard has been developed to address observed needs and to support the local industry in order to make progress through upraising competitiveness and maintain comparative market advantage both domestically and internationally.

In the preparation of this standard reference has been made to the following:

CAC GL 11-1991 - Guidelines for Mixed Fruit Juices.

Codex Stan 192, General Standard for Food Additives.

Codex Stan 193, General Standard for contaminants.

Acknowledgment has been made for the use of information from the above publications.

Mixed fruit juices - specification

1. Scope

This Ethiopian standard specifies the requirements for mixed fruit juices intended for human consumption.

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.

CES 73, General standard for prepackaged foods –Labeling.

ES 577, Recommended code of practice-General principle of food hygiene.

ES 929, Code of practice-food hygiene management.

ES ISO 2447, Fruits, vegetables and derived products - Determination of tin content.

ES ISO 2448, Fruits and vegetable products - Determination of ethanol content.

ES 2834, Sampling plans for prepackaged foods (AQL6.5).

ES ISO 4833-1, Microbiology of the food chain - Horizontal method for the enumeration of microorganisms - Part 1: Colony count at 30 °C by the pour plate technique.

ES ISO 5522, Fruits, vegetables and derived products - Determination of total sulphur dioxide content.

ES ISO 6579-3, Microbiology of the food chain - Horizontal method for the detection, Enumeration and serotyping of Salmonella - Part 3 Guidelines for serotyping of Salmonella spp.

ES ISO 6633, Fruits, vegetables and derived products - Determination of lead content - Flameless atomic absorption spectrometric method.

ES ISO 6636-2, Fruits, vegetables and derived products - Determination of zinc content - Atomic absorption spectrometric method.

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

ES ISO 7952, Fruits, vegetables and derived products - Determination of copper content - Method using flame atomic absorption spectrometry.

ES ISO 9526, Fruits, vegetables and derived products - Determination of iron content by flame atomic absorption spectrometry.

ES ISO 17239, Fruits, vegetables and derived products - Determination of arsenic content - Method using hydride generation atomic absorption spectrometry.

ES ISO 21527-1, Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of yeasts and moulds - Part 1: Colony count technique in products with water activity greater than 0,95.

ES 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.

ES ISO 22002-1, Prerequisite programmes on food safety -Part 1 Food manufacturing.

3. Terms and definitions

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

3.1

mixed juice

is the unfermented but fermentable juice, pulpy, turbid or clear, intended for direct consumption, as obtained by a mechanical process, from two or more species of sound ripe fruits or the flesh thereof, preserved exclusively by physical means. The juices may have been concentrated and later reconstituted with water suitable for the purpose of maintaining their essential composition and quality factors.

3.2

food grade packaging material

made of substances which are safe and suitable for their intended use and which will not impart any toxic substance or undesirable odor or flavor to the product.

3.3

brix

percent of soluble solids content of a liquid as determined by a refractometer calibrated at 20 °C and read as 'degrees Brix' on the International Sucrose Scale.

4. Requirements

4.1 General requirements

4.1.1 Mixed juice shall be:

clean, sound, and free from evidence of foreign material such as dirt, silt, sand, thorns, insect parts, hair, wood, glass, and metal.

4.1.2 Organoleptic Properties

Natural volatile juice components may be restored to any juice obtained from the same type of fruits from which natural volatile juice components have been removed.

4.2 Specific requirements

4.2.1 Soluble Solids

The soluble fruit solids content of each fruit juice (exclusive of added sugars) should not be less than a value which corresponds to the soluble solids content of the ripe fruit as determined by refractometer at 20 °C, uncorrected for acidity and read as °Brix on the International Sucrose Scales. However, in the case of fruit juices for which a Codex Standard has been elaborated, the minimum soluble fruit solids content stated therein should apply.

4.2.2 Sugars

One or more of the solid sugars, as defined by the Codex Alimentarius Commission, may be added. In the case of a fruit juice being reconstituted from concentrate, one or more of the sugars, as defined by the Codex Alimentarius Commission, may be added. The quantity of sugars added, calculated as dry sugar, and should not exceed 100 g/kg. The addition of sugars should not be permitted when the juice has been acidified in accordance with Sections 5.1.

4.2.3 Ethanol Content

The ethanol content should not exceed 3 g/kg as determined by ES ISO 2448.

4.2.4 Use of Concentrates

Only concentrates obtained from the same type of fruit as contained in the mixture may be used.

4.2.5 The maximum limit of Citric acid and Malic acid will be limited by GMP.

Note: The addition of the acids is not permitted when the juice contains sugars added in accordance with Section 4.2.2.

4.2.6 The maximum limit of Carbon dioxide will be limited by GMP.

5. Food additives

Mixed juice may contain only permitted additives in accordance with Codex Stan 192.

6. Contaminants

The products covered by this Standard shall comply with the maximum levels of the General Standard for Contaminants and Toxins in Food and Feed (Codex Stan 193).

6.1 Pesticide residues

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

6.2 Metal contaminants

Mixed juice shall not exceed levels of metals specified in Table 2 below.

Table 2 - Metal contaminants

Contaminants	Limit (mg/kg, max.)	Test Methods
Arsenic (As)	0.2	ES ISO 17239
Lead (Pb)	0.3	ES ISO 6633
Tin (Sn)	200.0	ES ISO 2447
Copper (Cu)	5.0	ES ISO 7952
Zink (Zn)	5.0	ES ISO 6636-2
Iron (Fe)	15.0	ES ISO 9526
Sulfur dioxide	10	ES ISO 5522

Note: The sum of copper, iron and zinc shall not be more than 20 mg/kg.

7. Hygiene

7.1 Mixed juice shall be manufactured and handled in a hygienic manner in accordance with ES 577, ES 929 and ES ISO 22002-1.

7.2 Mixed juice shall be free of pathogenic microorganisms and shall conform to the microbiological requirements in Table 3 below.

Table 3 — Microbiological limits

Characteristics	Limits	Test methods
Total plate count, cfu/g, Max.	100	ES ISO 4833-1
Yeast/moulds, cfu/g, Max.	10	ES ISO 21527-1 ES ISO 21527- 2
<i>Escherichia coli</i> , MPN/g	Absent	ES ISO 7251
<i>Salmonella</i> sp., per 25 g	Absent	ES ISO 6579-3

7. Packaging and Labeling

7.1 Packaging

7.1.1 Shall be clean, sound, free from insects and fungi infection and the packing material shall be of food grade quality.

7.1.2 The containers, including packaging material, shall be made of substances which are safe and

ES 6713:2021

suitable for their intended use. They shall not impart any toxic substance or undesirable odor or flavor to the product.

NOTE: Packaging materials may be required to meet different regulations in Ethiopia.

7.2 Labeling

The labeling shall comply with the requirements of CES 73, and shall be legibly and indelibly marked with the following:

a) Name of the product:

- "mixed fruit juice" where either the word "fruit" is replaced by the names of the types of fruits used in descending order of their quantitative predominance in the product, or this name is followed by the types of fruits in the same order. If more than two juices are used, their names may be given separately on the label in proximity to the name of the food. In this case the name of the product should be denominated "mixed fruit juice".
- If the quantity of added sugar or sugars, calculated as dry sugar, exceeds 15 g/kg of the product, the words "x added" should plainly and conspicuously accompany the name of the product where "x" represents the name or names of the sugar or sugars added, or the word "sugar(s)". Instead of the term "x added" the term "sweetened" may be used.
- In the case of mixed fruit juice made wholly or partially from concentrated juice, the fact of reconstitution should be declared as follows : "mixed x juice made from concentrate or from concentrated juices" where "x" represents the names of all fruits which have been concentrated.

This information should be given in close proximity to the name of the food or in another prominent position on the label.

b) Name and physical and postal address of manufacturer, exporter/importer;

c) Batch or identification code;

d) Net weight in Kgs;

e) Expiry date;

f) List of ingredients;

Additional:

Where the food contains more than 2 g/kg of carbon dioxide the term "carbonated" shall appear in close proximity to the name of the food and carbon dioxide shall also be declared in the list of ingredients.

g) Storage instruction;

h) Country of origin;

i) Date of manufacture;

j) Any other information required by the purchaser.

8. Method of sampling

Sampling of mango puree and mango concentrate puree shall be done in accordance with ES 2834.

Organization and Objectives

The Ethiopian Standards Agency (ESA) is the national standards body of Ethiopia established in 2010 based on regulation No. 193/2010. ESA is established due to the restructuring of Quality and Standards Authority of Ethiopia (QSAE) which was established in 1998.

ESA's objectives are:-

- ❖ Develop Ethiopian standards and establish a system that enable to check whether goods and services are in compliance with the required standards,
- ❖ Facilitate the country's technology transfer through the use of standards,
- ❖ Develop national standards for local products and services so as to make them competitive in the international market.

Ethiopian Standards

The Ethiopian Standards are developed by national technical committees which are composed of different stakeholders consisting of educational institutions, research institutes, government organizations, certification, inspection, and testing organizations, regulatory bodies, consumer association etc. The requirements and/or recommendations contained in Ethiopian Standards are consensus based that reflects the interest of the TC representatives and also of comments received from the public and other sources. Ethiopian Standards are approved by the National Standardization Council and are kept under continuous review after publication and updated regularly to take account of latest scientific and technological changes.

Orders For all Ethiopian Standards, International Standard and ASTM standards, including electronic versions, should be addressed to the Documentation and Publication Team at the Head office and Branch (Liaisons) offices. A catalogue of Ethiopian Standards is also available freely and can be accessed in from our website.

ESA has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of ESA.

International Involvement

ESA, representing Ethiopia, is a member of the International Organization for Standardization (ISO), and Codex Alimentarius Commission (CODEX). It also maintains close working relations with the international Electro-technical Commission (IEC) and American Society for Testing and Materials (ASTM). It is a founding member of the African Regional Organization for standardization (ARSO).

More Information?

Contact us at the following address.

The Head Office of ESA is at Addis Ababa.

☎ 011- 646 06 85, 011- 646 05 65

☎ 011-646 08 80

✉ 2310 Addis Ababa, Ethiopia

E-mail: info@ethiostandards.org,

Website: www.ethiostandards.org



National Standards Mark