ETHIOPIAN STANDARD

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Guava juice - Specification

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Foreword

This Ethiopian Standard has been prepared under the direction of the Technical Committee for Fruits and Vegetables (TC 13) and published by the Ethiopian Standards Agency (ESA).

In the preparation of this Ethiopian Standard references has been made to the following.

Codex Stan 148, Codex standard for guava nectar preserved exclusively by physical means.

Codex Stan 193-1997, Codex general standard for contaminants and toxins in food and feed.

Codex Stan 247, Codex general standard for fruit juices and nectars.

KSEAS 77-1, Soft fruit juices–Specification Part1: Soft drinks and fruit juices, Kenyan Standard.

US 818, Fruit juices and nectars – Specification, Uganda Standard.

SI 1071, Non-alcohol drinks, Israel Standard.

UnitedStatesDepartmentofAgriculture(USDA),CommoditySpecificationBottled juices.

Acknowledgement is made for the use of information from the above publications.

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Guava juice - Specification

1. Scope

This Ethiopian Standard specifies the requirements for guava juice preserved exclusively by physical means[1].

[1]For the purpose of this standard preservation by physical means does not include ionizing radiation.

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 58, Drinking water (other than any packaged water) - Specification.

ES 258, Fruits and derived products - Sampling.

CES 73, General standard for prepackaged foods - Labelling.

ES 366, Iron in food - Atomic absorption spectrophotometric method.

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

ES 682, Net content in prepackaged products.

ES 985, White Sugar – Specification..

ES 1202, Honey – Specification.

ES 2853, Fruits and derived products - Determination of fill container. ES ISO 750, Fruits and derived products – Determination of citric acid. ES ISO 1842, Fruits and vegetables products - Determination of PH.

ES ISO 2173, Fruit and vegetable products -Determination of soluble solids content – Refractometric method.

ES ISO 2447, Fruit and vegetable products -Determination of tin content.

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

ES 2853, Fruit and derived products - Determination of fill containers

ES ISO 4833, Microbiology – General guidance for enumeration of microorganism - Colony count technique at 25 ^{0}C.

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

ES ISO 6561, Fruits, vegetables and derived products - Determination of cadmium content flameless atomic absorption spectrometric method.

ES ISO 6634, Fruits, vegetables and derived products -Determination of arsenic content - Silver Diethyl dithiocarbamatespectro photometric.

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

ISO 7251, Microbiology – General guidance for 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 7954, Microbiology – General guidance for enumeration of yeasts and moulds – Colony count technique at 25 ^{O}C.

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

3. Terms and definitions

For the purpose of this Ethiopian Standard the following definitions shall apply.

3.1.

brix

percent of soluble solids content of a liquid as determined by a refractometer calibrated at 20 ^{0}C and read as degrees Brix' on the International Sucrose Scale.

3.2.

water capacity of the container

the volume of distilled water at 20 ^{0}C, which the sealed container will hold when completely filled.

3.3.

refractometer

it is instrument used to measure the percent soluble solids of sugar referred to as degree brix (^{0}Bx); concentration of sugars expresses in terms of number of grains of sucrose per 100g of liquid.

4. Product descriptions

Guava 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 including post harvest surface treatments applied in accordance with the applicable provisions of the codec alimentarius commission.

It 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 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.

5. Essential composition

5.1 Basic ingredient

5.1.1 Fruits

Edible part of sound, appropriately mature and fresh fruit or of fruit maintained in sound condition by suitable means.

5.1.2 Water

The water used for the manufacture of fruit drinks shall be drinking water and complying with the requirements of CES 58.

5.2 Optional ingredients

5.2.1 Sugars

Sugars as defined in Ethiopian standards with less than 2 % moisture: Sucrose, glucose (dextrose anhydrous) or fructose may be added only to products.

5.2.2 Honey

Honey, as defined in ES 1202, may be used.

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6. Requirements

6.1. General requirement

The product shall have the characteristic colour, aroma and flavour of guava, taking into consideration the addition of honey in substitution for sugars.

6.2. Specific requirements

Guava juice shall conform to the compositional requirement in Table 1 below.

Table 1 - Compositional requirement of Guava juice

Characteristics	Requirement	Test Method
Single strength fruit ingredient or the equivalent from concentrated fruit ingredient, % m/m, Min.	25	AOAC 920.151
Ethanol, mg/kg, Max.	3	ES ISO 2448
Titrable acidity (expressed as citric acid)	0.2 to 0.5	ES ISO 750
Brix, Min.	8.5	ES ISO 2172 ES ISO 2173
pH, Max.	3.2 - 4.0	ES ISO 1842

7. Food additives

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

8. 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).

8.1 Pesticide residues

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

8.2 Metal contaminants

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

Table 2 - Maximum limit for guava juice

Characteristic	Maximum level (mg/kg)	Test methods
Tin (as Sn)	250	ES ISO 2447
Zinc (as Zn)	5	ES ISO 6636-2
Lead (as Pb)	0.05	ES ISO 6633
Arsenic (as As)	0.2	ES ISO 17239
Copper (as Cu)	5	ES ISO 7952
Iron (as Fe)	15	ES ISO 9526
Mercury (as Hg)	0.05	ES ISO 6637

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

9. Hygiene

9.1. The products shall be prepared under hygienic conditions in accordance with ES 577, ES 929 and ES ISO 22002-1.

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9.2. The products shall be free from pathogenic organisms and shall comply with the microbiological limits indicated in Table3.

Table 3 - Microbiological limit

Characteristic	Requirement	Test method
Total plate count, cfu/ml, Max.	50	ES ISO 4833-1
Coliform count	Nil/ml	ES ISO 4832
Yeast and mould count, cfu/ml, Max.	5	ES ISO 21527-1 ES ISO 21527-2
Eschericia coli.	Absent	ES ISO 7251

10. Packaging and Labeling

10.1. Packaging

10.1.1. The product shall be packed which shall be clean, sound, free from insects and fungi infection and the packing material shall be of food grade quality.

10.1.2. 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 odor or flavor to the product.

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

10.2. Labelling

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;

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

c) Batch or identification code;

d) Net weight in liter;

e) Expiry date;

f) List of ingredients;

g) Storage instruction;

h) Country of origin;

i) Date of manufacture;

j) Instructions on disposal of used package;

k) Any other information required by the purchaser.

The following designations shall be used where applicable:

- No fruit or fruit nectar may be represented pictorially on the label except peach or peach nectar.
- No claim shall be made in respect of "Vitamin C" nor shall the teen "Vitamin C" appear on the label unless the product contains such quantities of "Vitamin C" as would be accepted by national authorities in the country in which the product is sold, as warranting such claim or the use of such term.
- When the product contains honey, the declaration "contains honey" shall be in close proximity to the name of the product

11. Method of sampling

Sampling of fruit juice drinks shall be done in accordance with ES 2834.

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Bibliography

AOAC 920.151, Solids (total) in fruits and fruit products.

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Ethiopian Standards Agency

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 incompliance 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 or ganizations, 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 a vailable freely and can be accessed in from our website.

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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 in ternational 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).

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