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Banana juice — Specification

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Foreword

Rwanda Standards are prepared by Technical Committees and approved by Rwanda Standards Board (RSB) Board of Directors in accordance with the procedures of RSB, in compliance with Annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards.

The main task of technical committees is to prepare national standards. Final Draft Rwanda Standards adopted by Technical committees are ratified by members of RSB Board of Directors for publication and gazettment as Rwanda Standards.

DRS 358 was prepared by Technical Committee RSB/TC 001, *Non-alcoholic beverages*.

In the preparation of this standard, reference was made to the following standards:

RS EAS 948:2019, *Fruit juices and nectars — Specification*

The assistance derived from the above source is hereby acknowledged with thanks.

Committee membership

The following organizations were represented on the Technical Committee on *Non-alcoholic beverages* (RSB/TC 001) in the preparation of this standard.

Amazon Nutrition Cabinet

Enterprise Urwibutso

Gacuriro TVET School

H.Gavin Company

INNOPRO Ltd

MINIMEX

National Industrial Research and Development Agency (NIRDA)

NEZERWA CO.

Nyarutarama Business Incubation Center

RMP Ltd

Rwanda Food and Drugs Authority (RFDA)

SPIC Ltd

Rwanda Standards Board (RSB) – Secretariat

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Banana juice — Specification

1 Scope

This Draft Rwanda Standard specifies the requirements, sampling and test methods for banana juice intended for human consumption.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

AOAC 932.15, *Official Method Fructose in Sugars and Syrups*

AOAC 950.17, *Official Method Citric Acid in Nonalcoholic Beverages*

AOAC 950.21, *Official Method Acidity (Volatile) in Non-alcoholic Beverages*

AOAC 950.27, *Official Method Solids (Total) in Non-alcoholic Beverages*

AOAC 950.31, *Official Method, Glucose (Commercial) in Non-alcoholic Beverages*

AOAC 999.11, *Official Method, for determination of Lead, Cadmium, Copper, Iron, and Zinc in Foods. Atomic Absorption Spectrophotometry*

AOAC.950.29, *Sucrose in non-alcoholic beverages*

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

RS CAC/RCP 1, *Code of practice — General principles of food hygiene*

RS CODEX STAN 192, *General standard for food additives*

RS EAS 104, *Alcoholic beverages—Methods of sampling and test*

RS EAS 12, *Potable water — Specification*

RS EAS 16, *Plantation (mill) white sugar— Specification*

RS EAS 36, *Honey— Specification*

RS EAS 38, *Labelling of pre-packaged foods—Requirements*

RS EAS 5, *Refined white sugar — Specification*

RS EAS 749, *Brown sugars— Specification*

RS ISO 16649-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli — Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide*

RS ISO 1842, *Fruit and vegetable products — Determination of pH*

RS 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.*

RS ISO 4833-1, *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony count at 30 degrees C by the pour plate technique*

RS ISO 6579-1, *Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella — Part 1: Detection of Salmonella spp.* RS ISO 6888-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium*

RS ISO 6634, *Fruits, vegetables and derived products — Determination of arsenic content — Silver diethyldithiocarbamate spectrophotometric method*

3 Terms and definitions

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

3.1

banana juice (umuhama/umwikamire)

unfermented liquid obtained from appropriately mature and ripe banana fruits without further addition

3.2

concentrated banana juice

banana juice in which water has been reduced to increase the Brix level

3.3

banana nectar (umutobe ufunguye)

unfermented banana juice to which water has been added with or without the addition of sugars, honey and/or food additive sweeteners

3.4**extraneous matter**

inorganic matter such as sand, glass, metal, gravel, dirt, pebbles, stones, lumps of earth, clay and mud and organic matter such as chaff, straw, weed seeds and grains of crops, insects or insects' fragments, rodent hairs or any other foreign matter

3.5**food grade packaging material**

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

4 Requirements**4.1 General requirements**

Banana juice shall:

- a) be free from any extraneous matter;
- b) be free from any substances injurious to health;
- c) be free from foreign material such as grit and dirt;
- d) have the characteristic appearance, taste and aroma of natural banana juice;
- e) be free from signs of fermentation;
- f) where water has been added, it shall comply with RS EAS 12;
- g) be free from damage caused by insects and diseases; and
- h) sweeteners, such sugars and honey used in banana nectar shall comply with RS EAS 5 or RS EAS 16 or RS EAS 749 and RS EAS 36 respectively.

4.2 Specific requirements

Banana juice shall comply with the requirements stipulated in Table 1 when tested in accordance with the test methods specified therein.

Table 1 — Specific requirements for Banana juice

| S/N | Characteristic | Limits | Test methods |
|-----|----------------|--------|--------------|
|-----|----------------|--------|--------------|

| | | Concentrated banana juice | Banana juice | Banana Nectar | |
|-------|---|---------------------------|--------------|---------------|-------------|
| i. | pH | 4.0 - 5.0 | 4.0 - 5.0 | 4.0 - 5.0 | RS ISO 1842 |
| ii. | Fructose, %, min | 10.5 | 7.0 | 3.5 | AOAC 932.15 |
| iii. | Total solids (<i>Brix</i>) min | 30 | 20 [18] | 10 | AOAC 950.27 |
| iv. | Glucose, % m/m, min | 7.5 | 5.0 | 2.5 | AOAC 950.31 |
| v. | Total Acidity as anhydrous citric-acid, % m/m, max. | 1.05 | 0.7 | 0.35 | AOAC 950.17 |
| vi. | Sucrose, % m/m, max. | 5.0 - 9.0 | 5.0 - 9.0 | 5.0 - 9.0 | AOAC.950.29 |
| vii. | Volatile acidity as acetic acid, g/l, max | Absent | | | AOAC 950.21 |
| viii. | Ethyl alcohol content, %, v/v, max. | 0.5 | | | ISO 2448 |

5 Food additives

Food additives which may be used in processing of banana juice shall comply with RS CODEX STAN 192

6 Hygiene

Banana juice shall be produced and handled under hygienic conditions in accordance with RS CAC/RCP 1.

7 Microbiological requirements

Banana juice shall not exceed microbiological limits given in Table 2 when tested in accordance with test methods specified therein.

Table 2 — Microbiological limits for Banana juice

| S/N | Microorganism | Maximum limits | Test method |
|------|---------------------------------------|-----------------|----------------|
| i. | Total viable count, CFU/ml | 10 ³ | RS ISO 4833-1 |
| ii. | <i>E. coli</i> , CFU/ml | Absent | RS ISO 16649-2 |
| iii. | <i>Salmonella spp</i> in 25 ml | Absent | RS ISO 6579-1 |
| iv. | <i>Staphylococcus aureus</i> , CFU/ml | Absent | RS ISO 6888-1 |
| v. | Yeast and moulds, CFU/ml | 10 ² | RS ISO 21527-2 |

8 Contaminants

8.1 Pesticide residues

Banana juice shall comply with those maximum residue limits for pesticides established by the Codex Alimentarius Commission.

8.2 Heavy metals

Banana juice shall not contain heavy metals in levels exceeding the limits indicated in Table 3 when tested in accordance with test methods therein

Table 3 — Limits for heavy metal contaminants in Banana juice

| S/N | Characteristic | Maximum limits (mg/kg) | Test method |
|------|-----------------|------------------------|-------------|
| i. | Arsenic (as As) | [0.01] | RS ISO 6634 |
| ii. | Lead (as Pb) | 0.03 | AOAC 999.11 |
| iii. | Cadmium (as Cd) | [0.05] | |

9 Packaging

Banana juice shall be packaged in food grade packaging material that ensures the integrity and safety of the product.

10 Labelling

In addition to the requirements of RS EAS 38, the following specific labelling requirements shall apply and shall be legibly and indelibly marked:

- i) name of the product “Banana Juice”, “Concentrated Banana juice” or “Banana Nectar”
- j) name and address of manufacturer, packer, distributor, importer, exporter or vendor
- k) net contents shall be declared by volume in metric units;
- l) date of manufacture;
- m) expiry date;
- n) storage instructions;
- o) instructions on disposal of used package;
- p) list of ingredients;
- q) batch /lot number; and
- r) country of origin.

11 Sampling

Sampling shall be done in accordance with RS EAS 104.

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