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Sugarcane juice— Specification

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Rwanda Standards Board

P.O Box 7099 Kigali-Rwanda

KK 15 Rd, 49

Tel. +250 788303492

Toll Free: 3250

E-mail: info@rsb.gov.rw

Website: www.rsb.gov.rw

ePortal: www.portal.rsb.gov.rw

Contents

Page

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

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

1) IS 12923: Cane gur (jaggery)—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.

African Society of Commerce and Management Ltd (ASCOM)

Amazon Nutrition Cabinet Ltd

Bona Natural Fruits Transformation Company Ltd (B.N.F.T.C)

CFRDTA Ltd

College of Agriculture, Animal Science and Veterinary Medicine (UR-CAVM)

International Institute of Tropical Agriculture (IITA)

KAMAIMU Ltd

Nyarutarama Business Incubation Center (NBIC)

Rwanda Standards Board (RSB) – Secretariat

Sugarcane juice — Specification

1 Scope

This Draft Rwanda Standard specifies the requirements, sampling and test methods for sugarcane 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 950.17, *Official Method Citric Acid in Non-alcoholic Beverages*

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

AOAC 999.10, *Official Method Lead, Cadmium, Zinc, Copper, and Iron in Foods—Atomic Absorption Spectrophotometry*

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

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

RS EAS 12, *Potable water — Specification*

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

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 21527-1, *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*

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

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

RS ISO 4833-1, *Microbiology of food and animal feeding stuffs — 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 6634, *Fruits, vegetables and derived products -- Determination of arsenic content -- Silver diethyldithiocarbamate spectrophotometric method*

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*

3 Terms and definitions

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

3.1

sugarcane juice

non-fermented but fermentable liquid obtained from sound, appropriately mature and sugarcane

3.2

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

3.3

food grade packaging material

packaging material made of substances which are suitable for their intended use and which will not alter the quality, safety and organoleptic properties of the product

4 Requirements

4.1 Raw materials

4.1.1 Sugarcane juice shall be manufactured from sound, appropriately mature sugarcane.

4.1.2 Sugarcane juice content shall at least be 60% of the whole mixture.

4.2 Optional ingredients

The following ingredients may be used in the manufacture of sugarcane juice and shall comply with relevant standards:

a) potable water complying with RS EAS 12;

b) lemon juice complying with RS 202;

c) ginger complying with RS 303-1 or RS 303-2; and

d) garlic complying with RS 371 or RS 372.

4.3 General requirements

Sugarcane juice shall:

a) be free from any substances injurious to health;

b) be free from any extraneous matter;

c) be free from foreign material such as grit and dirt;

d) have the characteristic appearance, taste and aroma of sugarcane juice; and

e) be free from signs of fermentation.

4.4 Specific requirements

Sugarcane juice shall comply with the specific requirements in Table 1 when tested in accordance with the methods specified therein.

Table 1— Specific requirements for Sugarcane juice

S/N	Characteristic	Requirement	Test method
i.	Total Soluble Solids, (Brix), min.	18	RS ISO 2173
ii.	pH	4.0 - 5.0	RS ISO 1842
iii.	Total Acidity, g/l max.	0.7	AOAC 950.17
iv.	Ethanol content, % v/v, max	0.3	RS ISO 2448
v.	Volatile acidity as acetic acid, g/l, max	Absent	AOAC 950.21

5 Food additives

Sugarcane juice may contain only permitted food additives in accordance with RS CODEX STAN 192.

6 Hygiene

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

6.2 Sugarcane juice shall comply with microbiological limits given in Table 2 when tested in accordance with the methods specified therein.

Table 2 — Microbiological limits in Sugarcane juice

S/N	Microorganism	Limit	Test method
i.	Total Viable Count, cfu/ml	10^3	RS ISO 4833-1
ii.	*Escherichia coli,* cfu/ml	Absent	RS ISO 16649-2
iii.	*Salmonella spp* in 25 ml	Absent	RS ISO 6579-1
iv.	*Staphylococcus aureus,* cfu/ml	Absent	RS ISO 6888-1
v.	Yeasts and moulds, cfu/ml	10^2	RS ISO 21527-1

7 Contaminants

7.1 Pesticide residues

Sugarcane juice shall comply with the pesticide residue limits prescribed by the Codex Alimentarius Commission of the respective commodity.

7.2 Heavy metal contaminants

Sugarcane juice shall not contain heavy metal contaminants in excess of the limits in Table 3 when tested in accordance with the methods specified therein.

Table 3 —Heavy metal limits in Sugarcane juice

S/N	Heavy metal	Maximum limit (mg/kg)	Test method
i.	Arsenic (As)	0.2	RS ISO 6634
ii.	Lead (Pb)	0.05	AOAC 999.10
iii.	Cadmium (Cd)	0.05	

8 Packaging

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

9 Labelling

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

a) name of the product as “Sugarcane juice”;

b) name and physical address of the manufacturer/ packer;

c) list of ingredients in descending order;

d) date of manufacture;

e) expiry date;

f) batch/lot number;

g) brand /trade name; if any;

h) net content;

i) instructions for use;

j) storage conditions; and

k) country of origin.

10 Sampling

Sampling for sugarcane juice shall be done in accordance with Annex A.

Annex A
(normative)

Method of sampling for Sugarcane juice

A.1 Definitions

A.1.1

lot

collection of primary containers or units of the same size, type, and style manufactured or packed under similar conditions and handled as a single unit of trade

A.1.2

lot size

number of primary containers or units in the lot

A.1.3

sample size

total number of sample units drawn for examination from a lot

A.1.4

sample unit

container, a portion of the contents of a container, or a composite mixture of product from small containers that is sufficient for the examination or testing as a single unit. For fill of container, the sample unit shall be the entire contents of the container

A.2 Sampling plans

Sampling shall be done in accordance with the plan specified in Table A.1.

Table A.1 — Sampling plan

Lot size (primary containers)	**Size of container,** *n* [a]
Net weight equal to or less than 1 kg (2.2 lb)	
4 800 or less	13

Lot size (primary containers)	Size of container, *n* [a]
4 801 to 24 000	21
24 001 to 48 000	29
48 001 to 84 000	48
84 001 to 144 000	84
144 001 to 240 000	126
Over 240 000	200
Net weight greater than 1 kg (2.2 lb) but not more than 4.5 kg (10 lb)	
2 400 or less	13
2 401 to 15 000	21
15 001 to 24 000	29
24 001 to 42 000	48
42 001 to 72, 000	84
72 001 to 120 000	126
Over 120 000	200
Net weight greater than 4.5 kg (10 lb)	
600 or less	13
601 to 2 000	21
2 001 to 7 200	29
7 201 to 15 000	48
15 001 to 24 000	84
24 001 to 42 000	126
Over 42 000	200

[a] *n* = number of primary containers in sample.

A.3 Scale of sampling

A.3.1 All bottles 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, bottles of the same batch shall be grouped together and each group so formed shall constitute a separate lot and each lot shall be sampled.

A.3.2 The number of bottles 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 A.2.

Table A.2 — Number of bottles to be selected for sampling

No. of bottles in the lot (L)	No. of bottles to be selected	
	Microbiological testing	Other tests
L ≤ 1 300	12	18
1 300 < L ≤ 3 200	18	24
L > 3 200	24	30

A.3.3 The bottle to be selected for testing shall be chosen at random from the lot by the following procedure. Starting from any bottle, count them as 1, 2, 3... up to r. Every rth bottle thus counted shall be withdrawn r being the integral part of N/n, where N is the total number of bottles in the lot and n is the total number of bottle to be chosen.

A.4 Test samples and reference samples

A.4.1 Samples for microbiological tests

The sample bottle selected for microbiological tests (see Table A.2) shall be divided at random into three equal sets and labelled with all particulars of sampling. One of these sets of sample bottles shall be for the purchaser; another for the vendor and the third set is the reference.

A.4.2 Samples for other tests

The sample bottles selected for other tests (see Table A.2) shall be divided at random into three equal sets and labelled with all the particulars of sampling. One of these sets of sample bottles shall be for the purchaser, another for the vendor and third is the reference.

DRS 414: 2019

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