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**Vegetable juices and nectars —
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.

WD xxx was prepared by Joint Technical Committee RSB/TC 001 & 038, *Non-alcoholic beverages and processed fruits and vegetables*.

Committee membership

The following organizations were represented on the Joint Technical Committee on *Non-alcoholic beverages and processed fruits and vegetables* (RSB/TC 001&008) in the preparation of this standard.

Rwanda Standards Board (RSB) – Secretariat

Vegetable juices and nectars — Specification

1 Scope

This Working Draft Standard specifies the requirements, sampling and test methods for vegetable juices and nectars intended for direct human consumption or for further processing.

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 950.27, *Solids (total) in non-alcoholic beverages*

AOAC 979.17, *Lead in evaporated milk and vegetable juice, Anodic stripping voltametric method*

AOAC 980.19, *Tin in food, Atomic Absorption Spectrophotometric method*

AOAC 999.10, *Lead, cadmium, zinc, copper and iron in food, Atomic Absorption Spectrophotometry*

ISO 17239, *Vegetable s, vegetables and derived products — Determination of arsenic content — Method using hydride generation atomic absorption spectrometry*

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 164, *Honey — Specification*

RS CAC/RCP 1, *General principles for food hygiene*

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

RS CODEX STAN 212, *Sugars — Specification*

RS EAS 12, *Potable water — Specification*

RS EAS 38, *General standard for labeling of prepackaged foods*

RS EAS 803, *General requirements for nutrition labelling*

RS EAS 805, *Guidelines for use of nutrition and health claims*

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

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 food and animal feeding stuffs — Horizontal method for the 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 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*

3 Terms and definitions

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

3.1

vegetable juice

unfermented but fermentable liquid obtained from the edible part of sound, appropriately mature and fresh vegetable or of vegetable maintained in sound condition by suitable means including post-harvest treatments

3.2

concentrated vegetable juice

product that complies with the definition given in 3.1, except water has been physically removed in an amount sufficient to increase the Brix level to a value at least 50 % greater than the *Brix* value established for reconstituted juice from the same vegetable

3.3

water extracted vegetable juice

product obtained by diffusion with water of pulpy whole vegetable whose juice cannot be extracted by any physical means; or of dehydrated whole vegetable, and it may be concentrated and reconstituted

3.4

vegetable purée

unfermented but fermentable product obtained by suitable processes e.g. by sieving, grinding and milling the edible part of the whole or peeled vegetable without removing the juice

3.5

concentrated vegetable purée

product obtained by the physical removal of water from the vegetable purée in an sufficient amount to increase the *Brix* level to a value at least 50 % greater than the *Brix* value established for reconstituted juice from the same vegetable

3.6

vegetable nectar

unfermented but fermentable product obtained by adding water with or without the addition of sugars, honey and/or syrups, and/or food additive sweeteners

3.7

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

3.8

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 Ingredients

4.1.1 Essential ingredients

The following ingredients shall be used:

- a) vegetable juice obtained from the edible part of sound, appropriately mature and fresh vegetable or of vegetable maintained in sound condition by suitable means; and
- b) where water has been added, it shall comply with RS EAS 12.

4.1.2 Optional Ingredients

The ingredients that may be used in the manufacture of vegetable juices and nectars include but are not limited to the following:

- a) sugars complying with RS CODEX STAN 212;

- b) honey complying with RS 164;
- c) lemon juice may be added to vegetable juice for acidification purposes to unsweetened juices or vegetable nectars;
- d) salt and spices and aromatic herbs (and their natural extracts); and
- e) essential nutrients such as vitamins and minerals may be added for the purposes of product fortification.

4.2 General requirements

The vegetable juices and nectars shall:

- a) have the characteristic colour, aroma and flavour of juice from the same kind of vegetable from which it is made;
- b) retain no more water from washing, steaming or other preparatory operations than technologically unavoidable;
- c) be free from insect and rodent contamination; and
- d) not contain extraneous matter.

4.3 Specific requirements

Vegetable juices and nectars shall comply with the requirements stipulated in Table 1 when tested in accordance with AOAC 950.27.

Table 1 — Specific requirements for vegetable juices and nectars

S/N	Characteristics	limit		Test method
		Vegetable juice	Vegetable nectar	
i.	Brix, %, max	8	18	AOAC 950.27
ii.	Min (%) of vegetable juice/puree in the final product;	90	10	GMP
iii.	Total soluble solids, min (%)	10	10	
iv.	Ethanol, % v/v	0.5	0.5	ISO 2448
v.	Acid insoluble ash, mg/kg, max	10	10	ISO 763
vi.	PH, max	4.5	4.5	ISO 1842

4.4 Microbiological requirements

Vegetable juices and nectars shall comply with the requirements specified in Table 2 when tested in accordance with methods specified therein.

Table 2 — Microbiological limits for vegetable juices and nectars

S/N	Characteristics	Maximum limit	Test method
i.	Total viable counts, CFU/ml	10 ³	RS ISO 4833-1
ii.	<i>E. coli</i> , CFU/ml	Absent	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 21527-1

5 Food additives

Food additives permitted by RS CODEX STAN 192 and existing national laws that may be used include but are not limited to the following:

- a) colorants;
- b) antifoaming agents;
- c) emulsifiers and stabilizers;
- d) flavouring agents;
- e) flavour enhancers;
- f) preservatives; and
- g) sweeteners – natural and synthetic.

6 Contaminants

6.1 Pesticides residues

The products covered by the provisions of this standard should comply with those maximum residue limits for pesticides established by the Codex Alimentarius Commission for these products.

6.2 Heavy metal and other contaminants

Vegetable juices and nectars shall not contain heavy metal contaminants in excess of the limits stipulated in Table 3.

Table 3 — Limits for heavy metals in vegetable juices and nectars

S/N	Characteristics	Maximum limit	Test method
i.	Lead as Pb	0.1	AOAC 979.17
ii.	Cadmium as Cd	0.2	AOAC 999.10

7 Hygiene

The products covered by the provisions of this standard shall be processed, packaged, stored and distributed under hygienic conditions prescribed in the RS CAC/RCP 1.

8 Packaging

Vegetable juices and nectars shall be packaged in food grade packaging materials that shall not affect the quality of the product.

9 Labelling

In addition to the requirements stipulated RS EAS 38, the following information shall be provided:

9.1 Containers destined for the final consumer

a) name of the product as:

- 1) vegetable juice defined in 3.1: The name of the product shall be “_____ juice” or “juice of _____”,
- 2) concentrated vegetable juice defined in 3.2: The name of the product shall be “concentrated _____juice” or “_____ juice concentrate”,
- 3) water extracted vegetable juice defined in 3.3: The name of the product shall be “water extracted _____ juice” or “water extracted juice of _____”,
- 4) vegetable purée defined in 3.4: The name of the product shall be “_____ purée” or “Purée of _____”,
- 5) concentrated vegetable purée defined in 3.5: The name of the product shall be “concentrated _____ purée” or “_____ purée concentrated”,
- 6) vegetable nectars defined in 3.6: The name of the product shall be “_____ nectar” or “nectar of _____”,

NOTE 1 In the case of vegetable juice products (see 4.2) manufactured from two or more vegetables, the product name includes the names of the vegetable juices comprising the mixture in descending order of proportion by weight (m/m) or the words “vegetable juice blend”, “a vegetable juice mixture”, “mixed vegetable juice” or other similar wording.

NOTE 2 For vegetable juices, vegetable nectars and mixed vegetable juice/nectar, if the product contains or is prepared from concentrated juice and water or the product is prepared from juice from concentrate and directly expressed juice or nectar, the words “from concentrate” or “reconstituted” enter in conjunction with or close to the product name, standing out well from any background, in clearly visible characters, not less than 1/2 the height of the letters in the name of the juice.

b) name, physical location and address of manufacturer;

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- c) list of ingredients;
- d) lot number;
- e) net content;
- f) instructions for use;
- g) date of manufacture;
- h) country of origin for imported products or the declaration 'Made in Rwanda' for locally manufactured products;
- i) expiry date;
- j) additional requirements such as:
 - 1) any added essential nutrients declaration should be labelled in accordance with RS EAS 803 and RS EAS 805,
 - 2) a pictorial representation of vegetable (s) on the label should not mislead the consumer with respect to the vegetable so illustrated,
 - 3) where the product contains added carbon dioxide the term “carbonated” or “sparkling” shall appear on the label near the name of the product, and
 - 4) where tomato juice contains spices and/or aromatic herbs, the term “spiced” and/or the common name of the aromatic herb shall appear on the label near the name of the juice.

9.2 Non-retail containers

9.2.1 Information for non-retail containers not destined to final consumers shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, net contents and the name and address of the manufacturer, packer, distributor or importer, as well as storage instructions shall appear on the container, except that for tankers the information may appear exclusively in the accompanying documents.

9.2.2 However, lot identification, and the name and address of the manufacturer, packer, distributor or importer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

10 Sampling

Sampling shall be done in accordance with Annex A.

Annex A (normative)

Method of sampling for vegetable juices and nectars

A.1 Scale of sampling

A.1.1 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.1.2 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.1.

Table A.1 — 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
$L \leq 1\ 300$	12	18
$1\ 300 < L \leq 3\ 200$	18	24
$L > 3\ 200$	24	30

A.1.3 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 r th 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 bottles to be chosen.

A.2 Test samples and reference samples

A.2.1 Samples for microbiological tests

The sample bottle selected for microbiological tests (see Table A.1) 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.2.2 Samples for other tests

The sample bottles selected for other tests (see Table A.1) 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 the third is the reference.

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