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**Banana Based Alcoholic Beverages  
(BBAB) — Specification**

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In order to match with technological development and to keep continuous progress in industries, standards are subject to periodic review. Users shall ascertain that they are in possession of the latest edition

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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 343 was prepared by Technical Committee RSB/TC 031, *Alcoholic beverages*

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

- 1) XYZ: Title
- 2) XYZ: Title

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

This second/third/... edition cancels and replaces the first/second/... edition (RS nnn-n: yyyy), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

(The first/second/third/... edition (RS nnn-n: yyyy) has been reaffirmed by the Board on dd-mm-yyyy.)

RS nnn consists of the following parts, under the general title *Introductory element — Main element*:

- *Part n: Part title*
- *Part [n+1]: Part title*
- *Part [n+2]: Part title*

### Committee membership

The following organizations were represented on the Technical Committee on *Alcoholic beverages* (RSB/TC 031) in the preparation of this standard.

Paragraph of participants

Rwanda Standards Board (RSB) – Secretariat

## Banana Based Alcoholic Beverages (BBAB) — Specification

### 1 Scope

This Rwanda Standard specifies the requirements, sampling and test methods for Banana Based Alcoholic Beverages.

This standard does not apply to urwagwa, banana wine and plant flavoured alcoholic beverages

### 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 986.15, *Arsenic, Cadmium, Lead, Selenium and zinc in human and pet foods*

AOAC 999.10, *Lead, Cadmium, Copper, Iron and Zinc in, Atomic Absorption Spectrophotometry*

AOAC 972.11 *Methanol in distilled liquors*

ISO 15214, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of mesophilic lactic acid bacteria — Colony-count technique at 30 degrees C*

RS 164, *Honey — Specification*

RS CAC/RCP 1, *General Principles of Food Hygiene*

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 EAS 104, *Alcoholic Beverages — Method of sampling and testing*

RS EAS 144, *Neutral spirit — Specification*

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

RS ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony-count technique*

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 6888-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 2: Technique using rabbit plasma fibrinogen agar medium*

RS ISO 16050, *Foodstuffs — Determination of aflatoxin B1, and cereals, nuts and derived products — High performance liquid chromatographic method the total content of aflatoxins B1, B2, G1 and G2 in*

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 17240, *Fruit and vegetable products — Determination of tin content — Method using flame Atomic Absorption Spectrometry*

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

##### **Banana Based Alcoholic Beverage (BBAB)**

alcoholic beverage derived from fermentation of a sugary substrate originating from ripe banana pulp using yeast *saccharomyces* spp as fermenting organisms

#### 3.2

##### **foreign matter**

organic or inorganic material other than the described products

#### 3.3

##### **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

**3.4**

**banana juice**

unfermented but fermentable liquid obtained from the edible part of sound, appropriately mature and ripe banana fruit

**4 Requirements**

**4.1 Essential ingredients**

The following ingredients shall be used for the production of Banana Based Alcoholic Beverages:

- a) banana juice free from foreign mater; shall constitute more of 50 % of the mixture to be fermented
- b) sorghum complying with relevant standards e)f)
- c) sugar complying with relevant standards
- d) potable water complying with RS EAS 12.

**4.2 Optional ingredients**

The following ingredients may be used:

- e) BBAB may be fortified by the addition of neutral spirit complying to RS EAS 144 or any other spirit complying with relevant standard;
- f) honey complying with relevant standards or RS 164 respectively.
- g) other plants products that have been proven to be safe for human consumption

**4.3 General requirements**

BBAB shall:

- h) have the characteristic taste and aroma of banana.
- i) be free from any harmful ingredients, substances, and any other contaminants injurious to health;
- j) be free from foreign matter; and

**4.4 Specific requirements**

BBAB shall comply with the requirements given in Table 1 when tested in accordance with test methods specified therein.



**Table 1 — Specific requirements for BBAB**

S/N	Characteristic	Limits	Test method
i.	pH	3.5 - 5.0	RS ISO 1842
ii.	Ethyl alcohol content, %, v/v, max. <sup>a</sup>	14.0	RS EAS 104
iii.	Total suspended solids %, m/v, max.	5.0	
iv.	Total acidity, g/ L, max.	12.0	
v.	Total sugar as invert sugar, g/l, max.	25	
vi.	Volatile acids as acetic acid, g/L, max.	3.0	
vii.			
viii.	Methanol, mg/l, max.	100	AOAC 972.11

<sup>a</sup> Deviation of the actual alcohol content from the declared alcohol content shall not exceed 1%

## 5 Food additives

Food additives complying with RS CODEX STAN 192 may be used.

## 6 Contaminants

### 6.1 Pesticide residues

BBAB shall comply with the maximum residue limits for pesticides as established by the Codex Alimentarius Commission for the ingredients used in the manufacture of this product.

### 6.2 Heavy metals

BBAB shall not contain heavy metals in levels exceeding the limits indicated in Table 2 when tested in accordance with test methods specified therein.

**Table 2 — Limits for heavy metal contaminants in BBAB**

S/N	Heavy metal	Maximum limit mg/L	Test method
i.	Arsenic (as As)	0.01	AOAC 986.15
ii.	Lead (as Pb)	0.2	AOAC 999.10
iii.	Cadmium (as Cd)	0.1	
iv.	Tin (as Sn)	150	RS ISO 17240

### 6.3 Aflatoxin limits

Banana Based Alcoholic Beverages shall not exceed maximum limits for aflatoxin given in Table 3 when tested in accordance with test method specified therein.

**Table 3 — Limits for aflatoxin in BBAB**

S/N	Mycotoxin	Maximum limit µg/kg	Test method
i.	Total Aflatoxin	10	RS ISO 16050
ii.	Aflatoxin B1	5	

## 7 Hygiene

7.1 Banana Based Alcoholic Beverages shall be manufactured and handled in a hygienic manner in accordance with RS CAC/RCP 1.

7.2 When the alcohol is less than 10 %, BBAB shall comply with limits for microorganisms given in Table 4 when tested in accordance with test methods specified therein.

**Table 4 — Microbiological limits for BBAB**

S/N	Microorganism	Maximum limit	Test method
i.	Total viable count, cfu/mL	10 <sup>2</sup>	RS ISO 4833-1
ii.	Escherichia coli, cfu/mL	Absent	RS ISO 16649-2
iii.	Salmonella spp per 25 mL	Absent	RS ISO 6579-1
iv.	Staphylococcus aureus per mL	Absent	RS ISO 6888-2
v.	Lactic Acid Bacteria per mL	Absent	ISO 15214
vi.	Moulds, cfu/mL	10 <sup>2</sup>	RS ISO 21527-1

## 8 Weights and measures

The volume and fill of banana based alcoholic shall comply with national Weights and measures regulations.

## 9 Packaging and filling

9.1 Banana Based Alcoholic Beverages shall be packaged in food grade packaging materials that shall maintain the quality of the product including glass bottles, tin cans, aluminium foil and/or any other suitable material certified by an accredited laboratory to be safe for packaging alcoholic beverages.

9.2 The contents of the products shall occupy not less than 90 % of the total volume capacity of the container

## 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:

- a) name of the product as “Banana Based Alcoholic Beverage”
- b) name and physical and postal address of manufacturer;

- c) declaration of fortified BBAB;
- d) list of ingredients in descending order;
- e) plant or plant parts used;
- f) ethyl alcohol content;
- g) net contents in millilitres or litres;
- h) declaration of addition of neutral spirit or any other spirit (if any);
- i) date of manufacture;
- j) expiry date, (if alcohol content is less than 10 %);
- k) storage instructions; and
- l) statutory warnings.

## 11 Sampling

Sampling shall be done in accordance with RS EAS 104.

**Annex A**  
(normative)

**Annex title**

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## Bibliography

[1] RS 343: 2017, Banana based alcoholic beverages — Specification

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