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Flaked breakfast cereals—Specification

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Requests for permission to reproduce this document should be addressed to:

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

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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.

DRS58 was prepared by Technical Committee RSB/TC 003, *Cereals, pulses, legumes and derived products*.

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

- 1) KS 523: 2011, Breakfast cereals — Specification — Part 2: Flaked cereals (ready-to-eat)

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

This third edition cancels and replaces the second edition (RS 58: 2015), which has been technically revised.

Committee membership

The following organizations were represented on the Technical Committee on *Cereals, pulses, legumes and derived products* (RSB/TC 003) in the preparation of this standard.

ADMA International

Africa Improved Food (AIF)

ASCOM Ltd

MANOSALIWA Food Industries Ltd

National Industrial Research and Development Agency (NIRDA)

Radisson Blu Hotel & Convention Centre

Rwanda Consumer's Rights Protection Organization (ADECOR)

SOSOMA Industries

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

Rwanda Standards Board (RSB) – Secretariat

Flaked breakfast cereals—Specification

1 Scope

This Draft Rwanda Standard specifies the requirements, sampling and test methods for ready-to-eat flaked breakfast cereals 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 2001.04, *Fumonisin B1 and B2 in corn and corn flakes*.

AOAC 999.11, *Lead, cadmium, Copper, Iron and Zinc in foods Atomic Absorption Spectrophotometry after dryashing*

ISO 6541, *Agricultural food products — Determination of crude fibre content — Modified Scharrer method*

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

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

RS EAS 38, *General standard for the labelling of prepacked foods*

RS ISO 11085, *Cereals, cereals-based products and animal feeding stuffs — Determination of crude fat and total fat content by the Randall extraction method*

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

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

RS ISO 20483, *Cereals and pulses — Determination of the nitrogen content and calculation of the crude protein content — Kjeldahl method*

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 2171, *Cereals, pulses and by-products — Determination of ash yield by incineration*

RS ISO 24333, *Cereals and cereal products — Sampling*

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 ISO5985, *Animal feeding stuffs — Determination of ash insoluble in hydrochloric acid*

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 712, *Cereals and cereal products — Determination of moisture content — Reference method.*

3 Terms and definitions

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

3.1

flaked breakfast cereal

ready to eat breakfast cereal with low water content and crunchy texture. They are made directly from whole grain kernels or parts of kernels of corn, wheat, or rice and are processed in such a way as to obtain particles, called flaking grits, that form one flake each

3.2

flaking

separating cereal meal using flaker rolls into small pieces known as flakes

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

hardness

maximum force during the sample compression

3.5

crispness

food texture and sensory quality attribute referred to when a hard food or lo-moisture solid food emits a sound upon fracturing

4 Requirements

4.1 General requirements

4.1.1 Flaked breakfast cereal shall be prepared from grains complying with relevant Standards.

4.1.2 If the Flaked breakfast cereals are prepared from cereal flour, the flour used shall comply with relevant standards.

4.1.3 Flaked breakfast cereal shall be tender, crispy, and reasonably uniform in size and of good flavour and colour.

4.1.4 Flaked breakfast cereal shall possess a good characteristic taste and odour and shall be free from rancid, musty, sour and other undesirable tastes and odours. The flakes shall be free from insects and extraneous matter.

4.1.5 When immersed in milk or water the product shall readily absorb the liquid and swell substantially presenting a pleasant texture and taste. The product shall not be soggy.

4.2 Specific requirements

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

Table 1 — Specific requirements for flaked breakfast cereals

S/N	Characteristic	Requirement	Test method
i.	Moisture content, % , max	6.0	RS ISO 712
ii.	<i>Protein</i> %, min.	5	RS ISO 20483
iii.	<i>Fat</i> , %, max	8	RS ISO 11085
iv.	<i>Total Ash</i> , , % m/m, max.	3.0	RS ISO 2171
v.	<i>Crude fibre</i> , % , max.	3.0	ISO 6541
vi.	<i>Acid insoluble ash</i> , % m/m, max.	0.2	RS ISO 5985

5 Food additives

If used, food additives shall comply with RS CODEX STAN 192

6 Hygiene

6.1 Flaked breakfast cereals shall be prepared, and handled in accordance with RS CAC/RCP 1.

6.2 Flaked breakfast cereals shall not exceed microbiological limits given in Table 2 when tested in accordance with the test methods specified therein.

Table 2 — Microbiological limits for flaked breakfast cereals

S/N	Type of micro-organisms	Maximum limit	Test method
i.	Total Plate Count, cfu/g	500	RS ISO 4833-1
ii.	<i>Salmonella</i> spp in 25 g	Absent	RS ISO 6579-1
iii.	<i>Escherichia coli</i> cfu/g	Absent	RS ISO 16649-2
iv.	<i>Staphylococcus aureus</i> cfu/g	Absent	RS ISO 6888-1
v.	Yeasts and moulds, cfu/g	100	RS ISO 21527-2

7 Contaminants

7.1 Heavy metals

Flaked breakfast cereals shall not exceed limits for heavy metals in Table 3 when tested in accordance with test method specified therein.

Table 3 — Maximum limits for heavy metals

S/N	Contaminants	Limits (mg/kg)	Test method
i.	Lead (Pb)	0.2	AOAC 999.11
ii.	Cadmium	0.1	

7.2 Mycotoxins

Flaked breakfast cereals shall not exceed those maximum levels of mycotoxins specified in Table 4 when tested in accordance with test methods specified therein.

Table 4 — Mycotoxins limits for flaked cereals

S/N	Mycotoxin	Maximum levels $\mu\text{g/kg}$, max	Test method
i.	Total aflatoxins	10	RS ISO 16050
ii.	Aflatoxin B1	5	
iii.	<i>Fumonisin</i>	2000	AOAC 2001.04

7.3 Pesticide residues

Flaked breakfast cereals shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for cereals.

8 Packaging and labelling

8.1 Packaging

Flaked breakfast cereals shall be packed in well-sealed moisture proof food grade packaging materials which will protect the product from deterioration in quality and safety throughout the shelf life.

8.2 Labelling

The labelling of the flaked breakfast cereals shall comply with RS EAS 38. In addition, the following information shall be legibly and indelibly marked on the container:

- a) name of product; "Flaked breakfast cereals";
- b) name, location and physical address of the manufacturer;
- c) list of ingredients in descending order of proportions;
- d) country of origin;
- e) food additives if any;
- f) date of manufacture;
- g) expiry date;
- h) net weight;
- i) instructions for use; and
- j) storage instructions.

9 Sampling

Sampling of flaked breakfast cereals shall be done in accordance with RS ISO 24333.

Bibliography

- [1] RS 58: 2015 *Flaked breakfast cereals—Specification, Second edition*

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