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Cakes — Specification

Rwanda Standards Board

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

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

1) KS 05-1042:1994, Cakes-Specification.

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

This second edition cancels and replaces the first edition (RS 78:2009), which has been technically revised.

Committee membership

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

ADMA International Ltd

FARMFRESH Ltd

Lamane Bakery

Rwanda Agriculture Board

SIMBA Supermarket

SOSOMA Industries

Rwanda Standards Board (RSB) – Secretariat

Cakes — Specification

1 Scope

This Draft Rwanda Standard prescribes the requirements, sampling and test methods for the following types of cakes:

a) Plain cakes;

b) Fruit cakes;

c) Sponge cakes and

d) Speciality cakes.

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.

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, *Code of Practice-General principle of food hygiene.*

RS CODEX STAN 19, *Codex standard for edible fats and oils*

RS EAS 1, *Wheat flour. —Specification*

RS EAS 12, *Potable water—. Specification*

RS EAS 38, *Labelling of pre-packaged and prepared foods.*

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 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 ISO 6579-1, *Microbiology of the food chain -- Horizontal method for the detection, enumeration and serotyping of Salmonella -- Part 1: Detection of Salmonella spp*

3 Terms and definitions

3.1

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 in the preparation of the batter for the different cakes: and shall comply with relevant standards.

4.1.1.1 For Plain Cakes, the ingredients shall be:

a) Wheat flour complying with RS EAS 1;

b) Shortening;

c) White Sugar complying with RS EAS 5;

d) Eggs;

e) Potable water complying with RS EAS 12.; and

f) Baking Powder.

4.1.1.2 For Fruit Cakes, the ingredients shall be:

a) Wheat flour complying with RS EAS 1;

b) Shortening;

c) White Sugar complying with RS EAS 5;

d) Eggs;

e) potable water complying with RS EAS 12;

f) Baking powder; and

g) Fruit (dry or preserved).

4.1.1.3 For sponge cakes, the ingredients shall be:

a) Wheat flour complying with RS EAS 1;

b) White Sugar complying with RS EAS 5;

c) Eggs;

d) potable water complying with RS EAS 12; and

e) Baking powder.

4.1.1.4 For Specialty Cakes (Christmas cakes, birthday cakes, wedding cakes etc), the ingredients shall be:

a) Wheat flour complying with RS EAS 1;

b) Shortening;

c) White Sugar complying with RS EAS 5;

d) Icing sugar;

e) Eggs;

f) Potable water complying with RS EAS 12;

g) Baking powder;

h) Spices and food colour; and

i) Cake filings.

4.1.2 Optional Ingredients

One or more of the ingredients given below may be added:

a) Candied peel (orange, lemon and grape fruits);

b) Glazed cherries;

c) Crystallized ginger;

d) Dry fruits and nuts such as sultana, black sultana, raising, currants dates, walnuts, cashew nuts, almonds;

e) and peanuts;

f) Desiccated coconut;

g) Flavouring essences;

h) Edible oilseeds, oilseeds flours or oilseed concentrates;

i) Honey complying with RS 164;

j) Liquid glucose;

k) Milk and milk products;

l) Spices and herbs;

m) Edible starches;

n) Glycerine;

o) Semolina;

p) Defatted or lecithinated Soya flour;

q) Sorbitol liquid or sorbitol powder; and

r) Molasses

s) Permitted aerating agents Ropes or mould inhibitors in quantities may be applied:

4.2 General requirements

Cakes shall:

a) be suitably baked with due allowance for heat penetration of the edges;

b) not show signs of under baking or overbaking;

c) be moist, uniform in texture and with even distribution of added ingredients;

d) have the colour, texture, flavour and aroma characteristics of typical well-baked cakes; and

e) be free from any rancidity or other objectionable taste, insect or fungus and mould infestation.

NOTE: The appearance, taste and odour shall be determined in accordance with the methods of sensory analysis of food.

4.3 Specific requirements

Cakes shall comply with the specific requirements stipulated in Table 1.

Table1 — Specific requirements for cakes

S/N	Characteristics	Requirements				Test method
		Plain Cakes	Fruit cakes	Sponge cakes	Specialty	
i.	Moisture, per cent by mass	15 to 25	15 to 25	20 to 27	15 to 25	Annex B
ii.	Acid insoluble ash (on dry matter basis), per cent by mass, max.	0.1	0.1	0.1	0.1	Annex C
iii.	Acidity of extracted fat (as oleic acid), per cent by mass, max.	1.0	0.5	1.0	1.0	Annex D
iv.	Fruit content, per cent by mass, min	—	7.0	—	—	Annex A

4.4 Microbiological requirements

Cakes shall comply with the microbiological limits indicated in Table 2.

Table2 — Microbiological limits for cakes

S/N	Microorganism	Maximum limit	Test method
i.	Total viable count, CFU/g	10^4	RS ISO 4833-1
ii.	Yeasts and moulds, CFU/g.	10^3	RS ISO 21527-2
iii.	Salmonella spp CFU/ 25g	absent	RS ISO 6579-1
iv.	*Pathogenic Escherichia coli* CFU/g	Absent	ISO 16649-2

5 Hygiene

Cakes shall be manufactured processed, packaged, stored and distributed under hygienic conditions prescribed in RS CAC/RCP 1.

6 Food additives

Food additives which may be used in the manufacture of cakes shall comply with RS CODEX STAN 192.

7 Packaging

Cakes shall be packaged in food grade packaging materials that shall not affect the quality of the product.

8 Labelling

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

a) Name of product “cakes”

b) Name and address of the manufacturer;

c) List of ingredients;

d) Net content;

e) Date of manufacture;

f) ‘Sell by’ date;

g) Country of origin (‘Made in Rwanda’ for locally manufactured cakes); and

h) storage instructions

9 Sampling

Sampling shall be done in accordance with RS ISO 24333.

Annex A
(normative)
Determination of Fruit content

A.1 This method determines the contents of both dry fruits and preserved fruits in fruit cakes.

A.2 Equipment.

A.2.1 Bread or cake knife

A.2.2 Brush

A.2.3 Filter paper or clean cloth

A.2.4 weighing balance

A.3 Method

Weigh four cake slices (approximately 100 g) accurately. Pick the pieces of preserved fruit and dry fruit. Pick each piece of preserved fruit and dry fruit and wipe them with a hair brush or a filter paper or clean cloth. Weigh the fruits so collected and calculate the percentage of fruits from the mass of fruits picked out separately for preserved fruit and dry fruits.

Annex B
(normative)

Determination of Moisture content

B.1 Apparatus

B.1.1 Moisture Dish, made of porcelain, silica, glass or aluminium.

B 1.2 Oven, Electric maintained at 105 ± 1 ・C

B 1.3 Desiccator

B.2 Procedure

B 2.1 Weigh accurately about 5 g of the ground sample in the moisture dish, previously dried in the oven and weighed. Place the dish in the oven maintained at 105 ± 1 □C for 4 h. Cool in the desiccators and weigh. Repeat the process of drying, cooling and weighing at 30 min intervals until the difference between the two Consecutive weightings' is less than one milligram. Record the lowest mass.

B.3 Calculation and expression of results

B.3.1 Moisture content, w, expressed as a percentage by mass of the product as received, is given by the following equations.

$$w = \frac{100\ (m_1 - m_2)}{3_1 - m}$$

Where

m_1 = mass in g of the dish with the material before drying,

m_2 = mass in g of the dish with the material after drying to constant weight, and

m = mass in g of the empty dish.

Annex C
(normative)

Determination of Acid insoluble ash

C.1 Apparatus

C.1.1 Dish, Silica or porcelain.

C.1.2 Muffle Furnace, Maintained at 600 ± 20 ・C.

C.1.3 Water, Bath

C.1.4 Desiccator

C.2 Reagents

Dilute Hydrochloric Acid, approximately 5 N, prepared from concentrated hydrochloric acid.

C.3 Procedures

Weigh accurately about 20 g of the biscuit powder in the previously weighed dish and ash in the muffle furnace at 600 ± 20□C until light grey ash is obtained. Remove the dish from the furnish and allow it to cool at room temperature. Add 25 ml of the hydrochloric acid to the dish, cover with a watch-glass and heat on a boiling water-bath for 10 min. Mix the contents with the tip of a glass rod and filter through Whatman filter paper No. 42 or its equivalent. Wash the filter paper with water until the washings are free from acid, tested with blue litmus paper. Return the washed filter paper to the dish for ashing in the muffle furnace as above. Cool the dish in the desiccator and weigh. Again ignite the dish for half an hour in the furnace, cool and weigh. Repeat this operation until the dish has a constant mass, the difference between successive weighings being less than 1 mg. Filter 25 ml of the hydrochloric acid through a blank filter paper, wash, and ash and weigh it as in the case of acid insoluble ash. Substitute its mass from the mass of insoluble ash of the sample.

C.4 Calculation and expression of results

C.4.1 Acid insoluble ash, percent by mass (A)

$$= \frac{100\ (m1\text{-}m)}{m_2}$$

Where

m_1 = mass, in g, of the dish containing acid insoluble ash (*see* Note),

m = mass, in g, of the empty dish in which the sample is taken for ashing, and

m_2 = mass, in g, of the sample.

NOTE Correct the acid insoluble ash mass for the blank of filter paper, if any.

C.4.2 acid insoluble ash, percent by mass (dry basis)

$$= \frac{A \times 100}{100 \times m}$$

Where

A = acid insoluble ash, per cent by mass (*see* C.4.1), and

m = percentage of moisture in the biscuit (*see* A.3)

Annex D
(normative)

Determination of Acidity of extracted fat

D.1 Apparatus

Soxhlet Apparatus, with a 250 ml flat bottom flask.

D.2 Reagents

D.2.1 Petroleum Ether, boiling point 40□C to 80□C.

D.2.2 Benzene-Alcohol-Phenolphthalein Stock Solution, to one litre of distilled benzene add one litre of alcohol or rectified spirit and 0.4 g of phenolphthalein. Mix the contents well.

D.2.3 Standard Potassium Hydroxide Solutions, 0.05 N.

D.3 Procedures

Weigh accurately about 10 g of biscuit powder and transfer it to the thimble and plug it from the top with extracted cotton and filter paper. Dry the thimble with the contents for 15 to 30 min; at 100□C in an oven. Take the weight of the empty dry Soxhlet flask. Extract the fat in the Soxhlet apparatus for 3 h to 4 h and evaporate off the solvent in the flask on a water-bath.

Remove the traces of the residual solvent by keeping the flask in the hot air oven for about half an hour and weigh. Cool the flask and add 50 ml of mixed benzene-alcohol-phenolphthein reagent (see C.2.2) and titrate the contents to a distinct pink colour with the potassium hydroxide solution taken in a10 ml micro burette. If the contents of the flask become cloudy, during titration, add another 50 ml of the reagent (see C.2.2) and continue the titration. Make a blank titration of the 50 ml reagent. Subtract from the titre of the fat, the blank titre.

D.4 Calculations and expression of result

Acidity of extracted fat, (as oleic acid) per cent by mass

$$= \frac{1.41 \times V}{m_1 - m_2}$$

Where

V = volume of 0.05 N potassium hydroxide solution used in the titration after subtracting the blank,

m_1 = mass, in g, of the Soxhlet flask containing fat, and

m2 = mass, in g, of the empty Soxhlet flask.

ICS 67.060