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Chilli oil — 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.

RS 169 was prepared by Technical Committee RSB/TC 019, *Spices, condiments and food additives.*

This second edition cancels and replaces the first edition (RS 169: 2013) which has been technically revised.

Committee membership

The following organizations were represented on the Technical Committee on Spices, condiments and food additives (RSB/TC 019) in the preparation of this standard.

AGASHINGURACUMU Ltd

Enterprise URWIBUTSO

IMARB Group

Rwanda Consumer's Rights Protection Organization (ADECOR)

SPIRULINA Corporation

Rwanda Standards Board (RSB) – Secretariat

Chilli oil — Specification

1 Scope

This Draft Rwanda Standard specifies the requirements, sampling and test methods for chilli oil 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, *Citric acid in non-alcoholic beverages*

AOAC 952.13, *Arsenic in food. Silver diethyldithiocarbamate*

AOAC 962.17, *Volatile oil in spices*

AOAC 973.34, *Cadmium in food. Atomic absorption spectrophotometric method*

AOAC 999.10, *Lead, Cadmium, Zinc, Copper, and Iron in Foods*

ISO 948, *Spices and condiments — Sampling*

ISO 3513, Chillies — Determination of Scoville index

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

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

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

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

RS ISO 3960, *Animal and vegetable fats and oils — Determination of peroxide value — Iodometric (visual) endpoint determination*

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 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

chilli oil

condiment made from vegetable oil that has been infused with chilli peppers.

3.2

fresh chillies

fresh, mature and clean chillies of Capsicum and/or preserved chillies

4 Ingredients

4.1 Basic ingredients

Chilli oil shall be a product prepared from fresh chillies, a mixture of chilli paste or chilli solids derived from clean, sound and whole some ripened chillies and cooking oil complying with standards for named vegetable oil.

4.2 Optional ingredients

Chilli oil may contain finely ground clean and wholesome garlic, sugar, ginger, onion and other spices or their extracts. It may contain ripened fruits and permitted thickeners contained in the RS CODEX STAN 192, for food additives.

5 Requirements

5.1 General requirements

Chilli oil shall:

have the characteristic colour of ingredients;

based on the optional ingredient these requirement cannot be achieved be free from any foreign matter; and

be free from objectionable flavour, off-flavour or objectionable odours of any kind.

5.2 Specific requirements

Chilli oil shall comply with the requirements as prescribed in Table 1.

Table 1 — Specific requirements for chilli oil

S/N	Characteristic	Limit	Test method
i.	Acidity as acetic acid, % m/m, min.	0.8	AOAC 950.17
ii.	pH, max.	4	RS ISO 1842
iii.	Scoville index, Scoville Heat Unit	600 – 13 000	ISO 3513
iv.	Volatile oil, %, max.	2	AOAC 962.17
v.	Peroxide value, milliequivalents of peroxide oxygen/kg, max.	10	RS ISO 3960

5.3 Microbiological requirements

Chilli oil shall conform to microbiological limits in Table 2.

Table 2 — Microbiological requirements in chilli oil

S/N	Parameter	Maximum limit	Test method
i.	*Total viable count, CFU/g*	10^4	RS ISO 4833-1
ii.	*E. coli*, CFU/ml	Absent	ISO 16649-2
iii.	*Staphylococcus aureus*	Absent	RS ISO 6888-1
iv.	*Salmonella, spp*, in 25 ml	Absent	RS IS0 6579-1
v.	Yeast and moulds, CFU/ml	100	RS ISO 21527-1

6 Food additives

Food additives may be used in the preparation of chilli oil and shall comply with RS CODEX STAN 192.

7 Contaminants

7.1 Heavy metals

Chilli oil shall not contain heavy metals in excess of those given in Table 3.

Table 3 — Maximum limits for heavy metal contaminants

S/N	Contaminant	Maximum limit (mg/l)	Test method
i.	Arsenic	0.5	AOAC 952.13
ii.	Cadmium	0.05	AOAC 973.34

iii.	Lead	0.5	AOAC 999.10

7.2 Pesticides residues

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

8 Hygiene

Chilli oil shall be prepared and handled in accordance with the hygienic requirements stipulated in RS CAC/RCP 1.

9 Packaging

Chilli oil shall be packaged in food grade containers which shall safeguard the safety and the quality of the product and the container shall be sealed and airtight.

10 Labelling

In addition to the requirements specified in RS EAS 38, chilli oil shall be legibly and indelibly labelled with the following information:

a) name of the product “Chilli oil”;

b) name and address of the manufacturer/packer;

c) country of origin;

d) list of ingredients;

e) net weight;

f) expiry/best before date;

g) date of packing;

h) batch number;

i) storage instructions;

j) instructions for use; and

k) cooking oil used.

11 Sampling

Sampling shall be done in accordance with ISO 948.

.

Annex A
(normative)

Gravimetric determination of water-insoluble solids content (Type II method)

A.1 Sampling

A.1.1 Liquid or strained honey

If sample is free from granulation, mix thoroughly by stirring or shaking; if granulated, place closed container in water-bath without submerging, and heat 30 min at 60 °C; then, if necessary, heat at 65 °C until liquefied. Occasional shaking is essential. Mix thoroughly and cool rapidly as soon as sample liquefies. Do not heat honey intended for Hydroxymethylfurfural or diastatic determination. If foreign matter, such as wax, sticks, bee's particles or comb, etc., is present, heat sample at 40 °C in water-bath and strain through cheesecloth in hot-water-funnel before sampling

A.1.2 Comb honey

Cut across top of comb, if sealed, and separate completely from comb by straining through a sieve the meshes of which are made by so weaving wire as to form square opening of 0.500 mm by 0.500 mm when portions of comb or wax pass-through sieve, heat sample as in A.1.1 and strain through cheesecloth. If honey is granulated in comb, heat until wax is liquefied; stir, cool and remove wax.

A.2 Procedure

A.2.1 Preparation of test sample

Weigh 20 g of honey and dissolve in a suitable quantity of distilled water at 80 °C and mix well.

A.2.2 Gravimetric determination

The test sample is filtered through a previously dried and weighed fine sintered glass crucible (pore size 15.40) and washed thoroughly with hot water (80 °C) until free from sugars (Mohr test). The crucible is dried for one hour at 135 °C, cooled and weighed to 0.1 mg.

A.2.3 Expression of results

The result is expressed as percent water insoluble solids (m/m).

Annex B
(normative)

Determination of fructose-glucose ratio

B.1 Principle of the method

The glucose portion of the invert sugar content of honey is determined by reacting it with iodine. The fructose content is calculated by subtraction.

B.2 Apparatus

B.2.1 0.05 N iodine solution

B.2.2 0.01 N sodium hydroxide solution

B.2.3 0.05 N standard sodium thiosulphate solution

B.3 Procedure

Pipette 50 ml of honey solution in a 250-ml stoppered flask. Add iodine solution and 25 ml of sodium hydroxide solution. Stopper the flask and keep in dark for 20 min. Acidify with 5 ml of sulphuric acid and titrate quickly the excess of iodine against standard thiosulphate solution. Conduct a blank using 50 ml of water instead of honey solution.

B.4 Calculation and expression of results

B.4.1 Approximate glucose, percent by mass (g of glucose per 100 g honey):

$$w = \frac{(B - S) \times 0.004502 \times 100}{a}$$

where

B is the volume, in millilitres, of sodium thiosulphate solution required for the blank.

S is the volume, in millilitres, of sodium thiosulphate solution required for the sample, and

a is the mass, in grams, of honey taken for the test.

B.4.2 Approximate fructose, per cent by mass (g fructose per 100 g honey):

$$x = \frac{Total\ reducingsugars(c) - approximateglucosecontent\ (w)}{0.925}$$

B.4.3 Actual glucose content (g per 100 g honey), per cent (Y)= W-0.012X and

$$Fructosecontent(gper\ 100g\ honey), percent\ (z) = \frac{Total\ reducingsugars - y\ actual}{0.925}$$

B.4.4 Fructose-glucose ratio

$$Fructose - glucos\ ratio = \frac{Actual\ fructosecontent\ (z)}{Actual\ glucosecontent\ (y)}$$

.

Annex C
(normative)

Fiehe's test

C.1 Reagent

C.1.1 Resorcinol solution

Dissolve 1 g of resublimed resorcinol in 100 ml of hydrochloric acid (specific gravity 1.18 or 1.19).

C.2 Procedure

Dissolve 2 g of honey in 10 ml of water and extract with 30 ml ether. A continuous extractor is preferable. Remove ether in a separating funnel and concentrate the layer at 5 ml. Add 2 ml of freshly prepared resorcinol solution, shake and note the colour.

C.3 Expression of results

A cherry red colour appearing in a minute indicates the presence of commercial invert sugar.

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