



TANZANIA STANDARD

Dried Rosella – Specification

TANZANIA BUREAU OF STANDARDS

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0 Foreword

Rosella (*Hibiscus sabdariffa*) is an annual herbaceous shrub of the *Malvaceae* family, whose leaves are normally used as a vegetable and the red pods that occur enclosed in their calyces are used in the food industry in making salads, soup, sauces, jam, beverages and other products.

In light of the need to safeguard the consumer and in order to ensure the safety and quality of dried rosella this Tanzania Standard was thus developed.

This standard is the revision of TZS 1190:2010 which was revised to include requirements for dried rosella in powdered form

In reporting the results of a test or analysis made in accordance with this Tanzania Standard, if the final value observed or calculated is to be rounded off, it shall be done in accordance with *TZS 4 Rounding off numerical values* (see clause 2).

1. Scope

This Tanzania Standard prescribes requirements, methods of sampling and tests for dried rosella, *Hibiscus subdariffa*, of *Malvaceae* family in whole or ground form intended for human consumption or industry use.

2. Normative references

The following referenced documents are indispensable for the application 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.

Codex Stan 192, General standard for food additives

TZS 4, Rounding off numerical values

TZS 1502, Fruits and Vegetables – Determination of Arsenic content

TZS 109 - Food processing units – Code of hygiene

TZS 118/ISO 4833-1, Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of microorganisms – Colony-count technique at 30° C

TZS 119/ ISO 4831, Microbiology of food and animal feeding stuffs – Horizontal method for detection and enumeration of coliforms – Most probable number technique

TZS 125(Part 1), Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) – Part 1: Colony Count Technique using

TZS 131/ISO 7954, Microbiology of food and animal feeding stuff – General guidance for enumeration of yeasts and moulds – Colony count technique at 25°C

TZS 163, Processed fruits and vegetable products – Method of sampling and test

TZS 268, Method for determination of lead in food stuffs

TZS 538, Packaging, marking and labeling of foods

TZS 1316/ISO 928, *Spices and condiments- Determination of total ash*

TZS 1317/ISO 930, *Spices and condiments- Determination of acid insoluble ash*

TZS 1318/ISO 939, *Spices and condiments- Determination of moisture content Entrainment method*

TZS 1315/ISO 927, *Spice and Condiments - Determination of Extraneous matter and foreign matter content*

TZS 122/ ISO6579-1, *Microbiology of food and feeding stuffs – Horizontal method for the detection of salmonella spp*

3. Terms and definitions

For the purposes of this Tanzania standard, the following terms and definitions shall apply;

3.1 dried rosella

the dried (flowers) calyces of herbaceous shrub of *Hibiscus sabdariffa* either whole or grounded.

3.2 spoiled rosella

rosella that is bruised or showing visible decomposition caused by moulds or any other indication of disease or darkened in colour.

3.3 extraneous matter

dirty, pieces of skin, twigs, glass, feathers, bits of wood, soil or any other foreign matter among or on the rosella.

4. Requirements

4.1 General

4.1.1 Description

Dried rosella is a sun or solar dried or artificially dried calyces (flowers) of *Hibiscus sabdariffa*, obtained from a sufficiently mature red pod presented in a whole or grounded form. Drying shall be done such that it prevents direct sun baking or does not make the product prone to insect infestation and mould growth. Hot air drying may be used. During drying the product shall be protected against high humidity, insects, birds, rodents and dust.

4.1.2 Colour

Dried rosella shall possess the characteristic purple red colour by visual examination.

4.1.3 Aroma

Dried rosella shall have a floral, berry – like aroma; free from objectionable off odour.

4.1.4 Flavour

Dried rosella, prepared with soaking and mashing in clean water shall have a well-balanced tart and astringent flavour. Shall be free from off flavours and other undesirable spice or cheese like flavour. When prepared in solution the solution shall visually be clear, deep red with some back ground of purple. Blue hue of the solution is undesirable.

4.1.5 Texture

Dried rosella shall be lump free; and free flowing

4.1.6 Extraneous matters

Dried rosella shall be free from extraneous matters when tested in accordance with Annex A.

4.1.7 Fineness of ground dried rosella

Ground dried rosella shall be free from coarse particles and shall be of such fineness that the whole of it passes through a sieve of 1.00 mm aperture size when tested in accordance with the methods prescribed under TZS 1315.

4.2 Specific requirements

4.2.1 Dried rosella shall also meet the physical and chemical requirement given in Table 1.

Table 1—Requirements for dried rosella

Parameter	Limit	Method of test
Moisture, % m/m (on dry matter basis), max.	10	TZS 1318
Acid insoluble ash; % m/m, max.	1.5	TZS 1317
Total ash, % (m/m) max.	8	TZS 1316
Extraneous matters.	Absent	Annex A
Particle size (for ground dried rosella) mm	Less than 1	TZS 1315

5. Food additives

Use of food additives shall be in accordance with Codex Stan 192

6. Hygiene

Dried rosella shall be prepared in accordance with TZS 109. The product on testing shall comply with the microbiological limits given in Table 2.

Table 2—Microbiological limits for dried rosella

Microbiological parameter,	Limit	Method of test
Total plate count, cfu/g, max.	10 ³	TZS 118
Yeasts and moulds, cfu/g, max.	10 ³	TZS 131
Coliforms, MPN, max.	Absent	TZS 119
<i>Staphylococcus aureus</i> , cfu/ 25g, max.	10	TZS 125-1
Salmonella, cfu/ 25g	Absent	TZS 122

7. Contaminants.

7.1 Heavy metal contaminants

Dried Rosella shall not contain metal contaminants in excess of quantities specified in Table 3.

Table 3: Limits for metal contaminants

Heavy metals	Maximum limit mg/kg	Test method
Arsenic (As)	0.2	TZS 1502
Lead (Pb)	0.2	TZS 268

7.2 Pesticide residues

The maximum allowable pesticide residue limits in dried rosella shall be as prescribed in Codex Alimentarius Commission.

8. Methods of sampling and test

8.1 Sampling

Dried rosella shall be sampled in accordance with TZS 163

8.2 Test

Dried rosella shall be tested for compliance with the requirements of this standard as described in this standard.

9. Packing, marking and labeling

9.1 Packing

Dried rosella shall be packed in such a way that the product is protected from undue spoilage. The packaging materials shall be of food-grade, clean and of a quality such as to avoid causing any damage to the product and prevent or minimize moisture loss and oxidation.

9.2 Marking and Labelling

In addition to TZS 538 the following particulars shall legibly and indelibly be marked or labeled on each container.

- i) Name of the product – “Dried rosella calyces” or “ground rosella”
- ii) Brand or trade name, if any
- iii) Name and address of the producer/packer/exporter or dispatcher
- iv) Country of origin
- v) Storage conditions
- vi) Net weight in gm or kg
- vii) Batch number in code or in clear.
- viii) Date of packing and best before date
- ix) Instruction for use

9.3 Each container may also be marked with the TBS standards mark of quality.

NOTE – The use of the TBS certification mark is governed by the provision of the Standards Act, 2009. Details of conditions under which a license for the use of TBS certification mark may be granted to the manufacturer may be obtained from TBS.

Annex A

Determination of filth

A.1 Principle

Visual inspection and examination of the residue after physical separation of filth from the material being investigated.

A-2 Examination of heavy filth such as glass and sand

A-2.1 Procedure

Weigh 10 g sample into 250 ml beaker. Add 150 ml petroleum ether and boil gently for 15 minutes on steam bath in hood. Occasionally add petroleum ether to keep volume constant. Decant petroleum ether on to smooth 7 cm paper in Buchner. Add 150 ml CHCl_3 to beaker and let stand for 30 minutes with occasional stirring. Decant sample and CHCl_3 on to funnel, leaving the heavy residue of glass, sand, soil, if any in the beaker. If appreciable quantity of sample tissues remains on the bottom of beaker, add successive portion of CHCl_3 mixed with CCl_4 to give increasingly higher specific gravity until practically all sample tissue is floated off. Transfer residue from the beaker to an ashless paper and examine microscopically to establish presence of any sand, glass or soil. If there is an appreciable amount of residue, place paper in weighed crucible, ignite, and weigh to determine quantitatively the amount of glass sand and soil.

A.2.2 Expression of result

Express the results in terms of presence or absence of filth under investigation.

A-3 Examination of light filth such as rodent hair

A-3.1 Procedure

Thoroughly dry the material in buchner and transfer, including fine material that must be scraped from paper, to the trap flask. Add approximately 150 ml of water, heat to boiling point, and simmer 15 minutes, with stirring; wash down inside of flask with H_2O ; and cool to less than 20 °C. Add 25 ml heptane, mix thoroughly, and let it stand for 5 minutes, then fill the flask with water and let it stand for 30 minutes. Stir every 5 minutes, trap off; and filter. Add approximately 15 ml heptane and mix thoroughly; trap off and filter second time after 15 minutes. If the second extraction yields appreciable amount of filth, decant most of the liquid from the flask, add 15 ml heptane and make third extraction. Finally examine the paper microscopically for any presence of feathers or rodent hair.

A-3.2 Expression of results

Express the results in terms of presence or absence of filth under investigation.

