



## DRAFT TANZANIA STANDARD

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### Spiced seaweed powder— Specification

Draft for stakeholders comments

**TANZANIA BUREAU OF STANDARDS**

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## Spiced seaweed powder — Specification

### 0 Foreword

Spiced seaweed powder is a product produced by mixing seaweed and one or more spices milled in powdered form. It is used as ingredient in food preparation.

This Tanzania Standard was prepared in order to ensure the safety and quality of spiced seaweed powder produced and/or traded in Tanzania.

In the preparation of this Tanzania Standard, considerable assistance was derived from stakeholders producing the product.

For the purpose of deciding whether a particular requirement of this Tanzania Standard is complied with, the final value observed or calculated expressing the result(s) of a test or analysis shall be rounded off in accordance with TZS 4 (see Clause 2).

### 1 Scope

This Tanzania Standard specifies the requirements, sampling and test methods for spiced seaweed powder produced from edible seaweed species 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.

CXS 192, *General standard for food additives*

CXS 193, *General standard for contaminants and toxins in food and feed*

CXG 50, *General guidelines on sampling*

TZS 4, *Rounding off numerical values*

TZS 109, *Food processing units — Code of hygiene — General*

TZS 118, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of microorganisms — Colony-count technique at 30 °C*

TZS 122, *Microbiology of food and feeding stuffs — Horizontal method for the detection of Salmonella spp.*

TZS 125 (all parts), *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species)*

TZS 538, *Packaging and labelling of foods*

TZS 2044, *Animal feeding stuffs — Determination of ash insoluble in hydrochloric acid*

TZS 2426, *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*

TZS 730-2, *Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of -b-glucuronidase-positive Escheria coli - Part 2 - Colony-count technique at 44 0C using 5-bromo-4-chloro-3-indolyl-b-D-glucuronide*

TZS 2750, *Dried seaweed — Specification*

TZS 3950, *Powdered seaweed -Specification*

### **3 Terms and definitions**

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

#### **3.1 seaweeds**

cluster of macroscopic and multicellular benthic marine algae of the division rhodophyta (red), phaeophyta (brown) and chlorophyta (green)

#### **3.2 spiced seaweed powder**

product obtained by mixing dried seaweed powder with permitted grounded spice(s)

#### **3.3 bleached seaweed**

seaweed that has been treated to remove its natural pigments and cellulose, resulting in a whiter final product

#### **3.4 unbleached seaweed**

seaweed used in its natural state, retaining its original dark or light brown/red/green colour

#### **3.5 foreign matter**

organic and inorganic materials such as sand, soil and glass, other than extraneous matter in the spiced seaweed powder

#### **3.6 extraneous matter**

organic matter of seaweeds' origin other than spiced seaweed powder

#### **3.7 food grade containers**

containers that shall safeguard the hygienic, safety, nutritional, technological, and organoleptic qualities of the product

### **4 Requirements**

#### **4.1 General requirements**

##### **4.1.1 Raw material**

- a) Seaweed used in the preparation of spiced seaweed powder shall comply with TZS 2750 and TZS 3950;
- b) Spices either used singly or mixture thereof shall comply to respective spice standard.

#### 4.1.2 Finished product

The final product shall:

- a) have colour characteristics of the raw material and processing technique used;
- b) have taste and odour typical of the seaweed species, spice and processing technique used; and
- c) be free from extraneous and foreign matters.

#### 4.2 Specific requirements

Spiced seaweed powder shall comply with the specific requirements given in Table 1 when tested in accordance with the test methods specified therein.

**Table 1 — Specific requirements for spiced seaweed powder**

| S/No. | Parameter                                                     | Requirement | Test method |
|-------|---------------------------------------------------------------|-------------|-------------|
| i.    | Moisture content, % m/m, max.                                 | 15          | Annex A     |
| ii.   | Salt as KCl, % max.                                           | 2           | Annex B     |
| iii.  | Acid insoluble ash, max.                                      | 2           | TZS 2044    |
| iv.   | Particle size passing through a sieve of 0.25 mm, % m/m, min. | 90          | Sifting     |

### 5 Food additives

Food additives may be used in the preparation of spiced seaweed powder in accordance with CXS 192.

### 6 Contaminants

#### 6.1 Heavy metals

Spiced seaweed powder shall comply with those maximum limits for heavy metals and other contaminants specified in CXS 193.

#### 6.2 Pesticide and veterinary drug residues

Spiced seaweed powder shall comply with those maximum pesticide and veterinary drug residue limits established by the Codex Alimentarius Commission for similar commodities.

### 7 Hygiene

**7.1** Spiced seaweed powder shall be produced and handled in a hygienic manner in accordance with TZS 109.

**7.2** Spiced seaweed powder shall comply with the microbiological limits given in Table 2 when tested in accordance with the test methods specified therein.

**Table 2 — Microbiological limits for spiced seaweed powder**

| S/No. | Microorganism                        | Limits          | Test method |
|-------|--------------------------------------|-----------------|-------------|
| i.    | <i>Escherichia coli</i> , CFU/g      | Absent          | TZS 730-2   |
| ii.   | Total plate count CFU/g, max.        | 10 <sup>5</sup> | TZS 118     |
| iii.  | <i>Salmonella</i> spp. in 25 g       | Absent          | TZS 122     |
| iv.   | Yeast and mould, CFU/g               | 10 <sup>2</sup> | TZS 2426    |
| v.    | <i>Staphylococcus aureus</i> , CFU/g | 10 <sup>2</sup> | TZS 125     |

## 8 Sampling and testing

### 8.1 Sampling

Sampling shall be done in accordance with CXG 50.

### 8.2 Testing

Tests shall be done in accordance with the test methods specified in Table 1 and Table 2.

## 9 Packaging, labelling and marking

### 9.1 Packaging

Spiced seaweed powder shall be well packaged in a food grade container.

### 9.2 Marking or labelling

**9.2.1** In addition to the requirements given in TZS 538, spiced seaweed powder shall be legibly and indelibly labelled with the following information:

- a) name of the product as “Spiced seaweed powder”
- b) common name and species name of the seaweeds;
- c) declaration “Bleached” or “Unbleached” seaweed;
- d) spice/spices used;
- e) net weight;
- f) name and physical address of the manufacturer/packer/distributor;
- g) date of manufacture;
- h) expiry date;
- i) batch number;
- j) instructions for use;
- k) country of origin; and
- l) storage conditions.
- m) Declaration of allergens if used

**9.2.2** Each container may also be marked with the TBS Standards Mark of Quality.

NOTE — The TBS Standards Mark of Quality may be used by the manufacturers only under licence from TBS. Particulars of conditions under which the licences are granted may be obtained from TBS.

## **Annex A** (normative)

### **Determination of moisture content**

#### **A.1 Principle**

The sample is dried to constant weight in an oven.

#### **A.2 Apparatus**

**A.2.1 Moisture dishes**, made of nickel, stainless steel, aluminium or porcelain, with well-fitting lids

**A.2.2 Oven**

**A.2.3 Desiccator**

#### **A.3 Procedure**

Weigh accurately about 10 g of the sample in a suitable moisture dish, previously dried in an oven and weighed. Place the dish in an oven maintained at  $105\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$  for five hours. Cool the dish in a desiccator and weigh it with the lid on. Repeat the process of heating, cooling and weighing at half-hour intervals until the loss in mass between two successive weightings is less than 1 mL. Record the lowest mass obtained. Preserve the dish containing this dried material in a desiccator for the determination of total ash.

#### **A.4 Calculation**

The moisture content, expressed in percentage by mass, shall be calculated as follows:

$$\frac{m_1 - m_2 \times 100}{m_1 - m}$$

where

$m_1$  is the mass, in grams, of the moisture dish with material before drying;

$m_2$  is the mass, in grams, of the moisture dish with the material after drying;

$m$  is the mass, in grams, of the empty moisture dish.

## **Annex B** (normative)

### **Determination of salt (as KCl)**

#### **B.1 Procedure**

Get a one (1) kilogram representative sample of the spiced seaweed powder.

Weigh 250 g into a 2-L beaker.

Add about 900 mL of distilled water and soak the spiced seaweed powder overnight to remove the sand and salt. Remove the spiced seaweed powder and stir the solution very well to completely dissolve the salt.

Decant the solution into a 1-L volumetric flask and dilute to volume distilled water. Save the sand for further analysis.

Mix the solution well and measure a 50 mL aliquot into a 250 mL volumetric flask.

Dilute to volume with distilled water. Mix well and measure a 10 mL aliquot into an Erlenmeyer flask.

Add 5 drops of  $K_2CrO_4$  and titrate with standard 0.100 N  $AgNO_3$  to the endpoint (tinge of orange brown).

#### **B.2 Calculation**

Salt (as KCl) expressed in percentage, shall be calculated as follows:

$$\frac{V_{AgNO_3} \times N_{AgNO_3} \times \frac{74.50}{1000} \times 100}{250 \times \frac{50}{1000} \times \frac{10}{250}}$$



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