**TBS/AFDC 23 (1518)DTZS** ICS 67.120.30

# DRAFT TANZANIA STANDARD

Powdered seaweed — Specification

TAY

**TANZANIA BUREAU OF STANDARDS** 

### 0 Foreword

Powdered seaweed (*unga wa mwani*) is a product produced by milling or grinding dried seaweed into powdered form. It is used in various food products as an ingredient, additive, seasoning and thickener.

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

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

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 (see clause 2).

### 1 Scope

This Tanzania Standard specifies requirements, methods of sampling and test for powdered seaweed produced from edible seaweed species intended for human consumption.

# 2 Normative References

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies;

TZS 4: Rounding off numerical values

TZS 109 Code of hygiene for food processing units - General

TZS 118/ISO 4833: Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of microorganisms – Colony-count technique at  $30^{\circ}$ c

TZS 122/ISO 6579 Microbiology of food and feeding stuffs – Horizontal method for *the detection of Salmonella spp* 

TZS 125/ISO 6888 (all parts), Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species)

TZS 127-1/ISO 21872-1, Microbiology of the food chain- Horizontal method for the determination of Vibrio spp.- Part 1: Detection of potentially enteropathogenic Vibrio parahaemolyticus, Vibrio cholerae and Vibrio vulnificusCodex Stan 192 *food additives* 

Codex Stan 193 Contaminants in foods

TZS 731/ISO 7251: Microbiology of food and feeding-stuffs – Horizontal method for the detection and enumeration of presumptive Escherichia coli – Most Probable Number Technique

TZS 2044 /ISO 5985, Animal feeding stuffs – Determination of ash insoluble in hydrochloric acid

TZS 2750, Dried seaweed Specification

CXG 50- General guideline on sampling

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# **3 Terms and definitions**

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

### 3.1 seaweed

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

#### 3.2 powdered seaweed

product produced by milling or grinding of dried seaweed into powder

### 3.3 foreign matter

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

#### 3.4 extraneous matter

organic matter of seaweeds' origin other than powdered seaweed

### 3.5 food grade containers

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

### **4 REQUIREMENTS**

### 4.1 General requirement

### 4.1.1 Raw material

Dried seaweed used in the preparation of powdered seaweed shall comply with TZS 2750.

### 4.1.2 Finished product

The final product shall:

- i. have colour characteristic of the division and processing technique used.
- ii. have taste and odour typical of the species and processing technique used.
- iii. be free from extraneous and foreign matters.

### 4.2 Specific requirements

The powdered seaweed shall comply with the requirements of Table 1.

Table 1 — Opecine requirements for powdered seaweed					
S/No	Parameter	Requirement	Test Method		
i.	Moisture content, % m/m, max.	15	Annex A		
ii.	Salt as KCI, max	25	Annex B		
iii.	Acid insoluble ash,max	1	TZS 2044		
iv.	Particle size pass through a sieve of	90	Sifting		
	0.25mm,% m/m, min				

Table 1 — Specific requirements for powdered seaweed

### 5. Food additives

Food additives may be used in the preparation of powdered seaweed in accordance with Codex Stan 192.

# 6. Contaminants

### 6.1 Heavy metals

Powdered seaweed shall comply with those maximum limits for heavy metals and other contaminants specified in Codex Stan 193.

### 6.2 Pesticide and veterinary drugs residues

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

## 7. Hygiene

Powdered seaweed shall be produced and handled in a hygienic manner in accordance with TZS 109. Powdered seaweed shall comply with the microbiological limits given in Table 2;

S/No	Microorganisms	Requirement	Method of test
i.	E. <i>coli</i> MPN/g, max.	Absent	TZS 731
ii.	Total Plate count CFU/g, max.	10 <sup>5</sup>	TZS 118
iii.	Salmonella spp.in 25g	Absent	TZS 122
iv.	Yeast and mould,CFU/g	10 <sup>3</sup>	TZS 2426
٧.	Vibrio spp,	Absent	TZS 127-1
vi.	Staphylococcus aureus, CFU/g	Absent	TZS 125-1

### Table2: Microbiological limits for powdered seaweed

## 8. Sampling and Tests

### 8.1 Sampling

Sampling shall be done in accordance with CXG 50.

### 8.2 Testing

Tests shall be done in accordance with methods prescribed in Tables1 and 2.

# 9. Packaging, Labelling and Marking

### 9.1 Packaging

Powdered seaweed shall be well packaged in a food grade container.

### 9.2 Marking or labelling

9.2.1 In addition to the requirements of TZS 538 the following specific labelling requirements shall apply and shall be legibly and indelibly marked;

- i. Name of the product as "Powdered seaweed";
- ii. Common name and species name;
- iii. Month and year of harvest;
- iv. Net weight;
- v. Name and physical address of the manufacturer/packer/distributor;
- vi. Date of manufacture
- vii. expiry date;
- viii. Batch number;
- ix. Declaration "bleached or Unbleached";
- x. Instruction for use;
- xi. country of origin; and
- xii. Storage condition.

### 9.2.2 Certification mark

Each container may also be marked with TBS certification mark.

NOTE: The use of TBS certification mark is governed by provisions of the standards Act 2009. Details of the conditions under which a license for the use of TBS certification mark may be granted to manufacturers or producers, 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 °C  $\pm$  2 °C for five hours. Cool the dish in a desiccator and weigh 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 (see B.2.3).

#### A.4 Calculation

The moisture content shall be expressed as follows: Moisture, % by mass =  $m_1$ - $m_2 \times 100$ 

M₁-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; and m is the mass, in grams, of the empty moisture dish

### Annex B (Normative) Determination of salt (as KCI)

1. Salt as KCI

B1 Get a one (1) kilogram representative sample of the seaweed raw material;

B2 Weigh 250 g into a 2-L beaker;

B3 Add about 900 ml of distilled water, soak the seaweed overnight to remove the sand and salt. Remove the seaweed, stir the solution very well to completely dissolve the salt;

B4 Decant the solution into a 1-L volumetric flask and dilute to volume distilled water. Save the sand for further analysis;

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B5 Mix the solution well and measure a 50 ml aliquot into a 250-ml volumetric flask;

B6 Dilute to volume with distilled water. Mix well and measure a 10 ml aliquot into an Erlenmeyer flask;

B7 Add 5 drops of K2CrO4 and titrate with standard 0.100 N AgNO3 to end point (tinge of orange brown);

B8 Calculate % salt (as KCI) using the following formula:

sttforstateholders comments only 74.50 V AgNO3 x N AgNO3 x ------ x 100 % salt (as KCI) =