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DRAFT ZANZIBAR NATIONAL STANDARD

Tandoori masala — Specification

ZANZIBAR BUREAU OF STANDARDS

First edition

Foreword

This draft Zanzibar National standard has been developed by the Spices and culinary herbs Technical Committee (TCFA5). In accordance with Zanzibar Bureau of Standards general procedures, this draft standard is presented to the public in order to receive any technical comment concerns.

Technical Committee Representatives

This Draft Zanzibar National Standard was prepared by the Spices and Culinary Herbs Standard committee which consists of representatives from the following organizations:

Chief Government Chemist Laboratory Agency (CGCLA)
Kidichi spices
Ministry of Agriculture, Natural resources and Irrigation
Ministry of Health (MoH) - Zanzibar Food and drugs Agency
Ministry of Trade and Industrial Development (MTID)
Tanzania Bureau of Standards (TBS)
Zanzibar Exporter Association (ZEXA)
Zanzibar Organic Producers (ZANOP)
Zanzibar State Trade Security (ZSTC)
Zanzibar Bureau of Standards (ZBS) – Secretariat

Zanzibar Bureau of Standards (ZBS)
PO Box 1136
Zanzibar
Tel: +255 24 2232225
Fax: +255 24 2232225
E-mail: info@zbs.go.tz
Web: www.zbs.go.tz

Tandoori masala — Specification

1 Scope

This draft Zanzibar National Standard specifies the requirements, sampling and test methods for tandoori masala intended for human consumption.

2 Normative references

The following referenced documents are indispensable for the application of this draft Zanzibar National Standard. 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, Codex general standard for contaminants and toxins in food and feed

ZNS 61, Packaging and labeling of food

ZNS 88, Code of hygienic practices for Spices and condiments

ZNS 376, Spices and condiments — Nomenclature

EAS 803, Nutrition labelling — Requirements

EAS 804, Claims — General requirements

ZNS 50, Spices and condiments — Determination of acid-insoluble ash

ZNS 49, Spices and condiments — Determination of moisture content

ISO 948, Spices and condiments — Sampling

ISO 1108, Spices and condiments — Determination of non-volatile ether extract

ISO 4833-1, Microbiology of the food chain — Horizontal method for the enumeration of microorganisms— Part 1: Colony count at 30 oC by the pour plate technique

ISO 6571, Spices, condiments and herbs — Determination of volatile oil content (hydrodistilation method)

ISO 6579 (all parts), Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of salmonella

ISO 16050, Food stuffs — Determination of aflatoxin B1, and the total content of aflatoxin B1, B2, G1 and G2 in cereals, nuts and derived products — High-perfomance liquid chromatographic method

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 44ºC using 5-bromo-4-chloro -3-indolyl beta –D-glucuronide

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

3 Terms and definitions

For the purposes of this draft Standard, the terms and definitions given in ZNS 376 and the following apply:

3.1
tandoori masala
product prepared by grinding clean, dry and wholesome spices, aromatic herbs/ seeds and food colour with or without starch and salts

3.2
foreign matter
material not usually associated with the natural component of the tandoori masala such as sticks, stones, burlap bagging, metal, etc.

3.3
food grade packaging material
material which will safeguard the hygienic, safety, nutritional, technological and organoleptic qualities of the tandoori masala

4 Requirements

4.1 Ingredients

The major ingredients shall include coriander, cumin, fenugreek, mustard, ginger, black peppers, cinnamon, cardamom and cloves. In addition, any of the spices and condiments listed in ZNS 376 may be used. The proportion of spices used in tandoori masala shall not be less than 85 %. Tandoori masala may contain edible starch material, the nature of which shall be declared.

4.2 General requirements

Tandoori masala shall:

a) have a fresh, pleasant taste, odour and colour characteristic of the designated product.
b) be free from living insects, and practically free from moulds, dead insects, insect fragments and rodent contamination.
c) be free from foreign matter

4.3 Specific requirements

Tandoori masala shall comply with the requirements given in Table 1 when tested in accordance withthe test methods specified therein.

Table 1 — Specific requirements for tandoori masala

S/No	Characteristic	Requirement	Test method
i.	Moisture, % m/m, max.	10	ZNS 49
ii.	Volatile oil, ml/100 g, min.	0.25	ISO 6571
iii.	Non-volatile ether extract, % m/m, min.	7.5	ISO 1108
iv.	Acid insoluble ash,, % m/m, max.	1	ZNS 50
v.	Salt, % m/m, max.	0.1	Annex A
vi.	Crude fibre, %, max.	15	Annex B
	NOTE: Requirements from ii) to vi) are on dry basis.		

4.3.2 Tandoori masala may be presented in course or fine powders, in case of the finely powder it shall be ground to such fineness that 95 % of it passes through a sieve of 500-µm (0.500mm).

5 Food additives

Food additives when used in tandoori masala shall comply with CXS 192.

6 Contaminants

6.1 Pesticide residues

Pesticide residues in tandoori masala shall not exceed maximum residue limits as established in the Codex online guideline for pesticide residues in food.

6.2 Heavy metals

Heavy metals in tandoori masala shall not exceed maximum heavy metal limits as stipulated in CXS 193.

6.3 Aflatoxin limits

Total aflatoxin shall not exceed 10 µg/kg and aflatoxin B_1 shall not exceed 5 µg/kg when tested in accordance with ISO 16050.

7 Hygiene

Tandoori masala shall be produced and handled under hygenic conditions in accordance with ZNS 88 and shall comply with microbiological limits given in Table 2 when tested in accordance with the methods specified therein.

Table 2 — Microbiological requirements for Tandoori masala

S/No	Characteristic	Limit	Test method
i.	Total plate count, cfu/g, max.	10^5	ISO 4833-1
ii.	Yeast and moulds, cfu/g, max.	10^3	ISO 21527-2
iii.	*Salmonella spp*., per 25 g	Absent	ISO 6579
iv.	*Escherichia coli*, MPN/g, max.	Absent	ISO 16649-2

8 Packaging and Labelling

8.1 Packaging

Tandoori masala shall be packaged in food grade packaging material that secures the integrity and thesafety of the product.

8.2 Labelling

8.2.1 In addition to the labelling requirements specified in ZNS 61, the containers shall be also legibly and indelibly labelled with the following: -

a) name of the product as “Tandoori masala”;

b) trade name or brand name if any;

c) name and physical address of manufacturer and/or packer;

d) batch or code number;

e) net weight in metric units;

f) list of ingredients;

g) storage conditions;

h) manufacturing date;

i) expiry/best before date; and

j) instructions for use.

8.2.2 The language on the label shall be ‘Kiswahili’ and/or English. Additional language may be used depending on the designated market.

9 Sampling

Sampling of tandoori masala shall be done in accordance with ISO 948.

Annex A

(normative)
Determination of salt (sodium chloride)

A.1 Reagents

A.1.1 Dilute nitric acid, one volume of concentrated nitric acid (relative density 1.42) diluted with 4 volumes of water and freed from lower oxides of nitrogen by boiling until colourless

A.1.2 Standard silver nitrate solution, 0.1 N

A.1.3 Ferric indicator solution, saturated solution of ferric ammonium sulphate [FeNH4. (SO4)2 2H2O]

A.1.4 Standard potassium thiocyanate solution, 0.1 N

A.2 Procedure

Weigh accurately about 2 g to 5 g of the material in a dish preferably of platinum and obtain the total ash as described in ISO 928. Dissolve the ash in hot water. Filter and wash the dish and residue thoroughly with hotwater till it is free from chlorides. Collect the filtrate and washings in an Erlenmeyer flask. Add a known volume of the standard silver nitrate solution in slight excess, 5 ml of the ferric indicator solution and a few millilitres of nitric acid. Titrate the excess silver nitrate with the standard potassium thiocyanate solution until permanent light brown colour appears.

A.3 Calculation

Sodium chloride, expressed as percent by mass, shall be calculated as follows:

$$\frac{5.85\ (V_1N_1\ -\ V_2N_2)\ 100}{M}$$

where

V_1 is the volume, in millilitres, of the standard silver nitrate solution used;

N_1 is the normality of the standard silver nitrate solution used;

V_2 is the volume, in millilitres, of the standard potassium thiocyanate solution;

N_2 is the normality of the standard potassium thiocyanate solution; and

M is the mass, in grams, of the material taken for the test.

Annex B
(normative)

Determination of crude fibre

B.1 Reagents

B.1.1 Petroleum ether:

B.1.2 Dilute sulphuric acid: 1.25% (m/v) accurately prepared.

B.1.3 A1.3 Sodium hydroxide solution: 1.25% (m/v) accurately prepared.

B.1.4 A.1.4 Ethanol: 95% (v/v)

B.2 Procedure:

Weigh accurately about 2.5 g of the ground material into a thimble and extract for about 1 hour with petroleum ether using a Soxhlet apparatus. Transfer the material in the thimble to a one-litre flask. Take 200 ml of the dilute sulphuric acid in a beaker and bring to boil. Transfer the whole of the boiling acid to the flask containing the fat-free material and immediately connect the flask with a water-cooled reflux condenser and heat so that the contents of the flask begin to boil within 1 minute. Rotate the flask frequently taking care to keep the material from remaining on the sides of the flask and out of contact with the acid. Continue boiling for exactly 30 minutes. Remove the flask and filter through fine linen (about 18 thread to the centimetre) or through a coarse acid washed hardened filter paper, held in a funnel and wash with boiling water until the washings are no longer acidic to litmus paper. Bring some quantity of sodium hydroxide solution to boil under reflux condenser. Wash the residues on the filter into the flask with 200 ml of boiling sodium hydroxide solution. Immediately connect the flask with the reflux condenser and boil for exactly 30 minutes. Remove the flask and immediately filter through the linen or the filter paper.

Thoroughly wash the residue with boiling water and transfer to a Gooch crucible prepared with a thin but compact layer of ignite asbestos. Wash the residue thoroughly first with hot water and then with about 15 ml of ethyl alcohol and with three successive washings of 15 ml of petroleum ether each.
Dry the Gooch crucible and contents at 105 ± 1°C in an air-oven for 3 hours, cool and weigh. Repeat the process of drying for 30 minutes, cooling and weighing until the difference between two consecutive weighings is less than 1 mg. Incinerate the contents of the Gooch crucible in the muffle furnace at 550 ± 20˚C until all the carbonaceous matter is burnt. Cool the Gooch crucible containing the ash in a desiccator and weigh.

B.3 Calculation

Crude fibre (on dry basis), percent by mass

$$= \frac{100(M_1 - M_2)}{M} \times \frac{100}{(100\text{-}H)}$$

Where: M_1 = mass in g of Gooch crucible and contents before ashing,
M_2 = mass in g of Gooch crucible containing asbestos and ash,
M = mass in g of the material taken for the test
H= moisture content of the sample as received in percent