

Garlic paste — Specification

PUBLIC REVIEW DRAFT

TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

Jomo Kenyatta University of Agriculture & Technology

Technical University of Kenya— Department of Food and Beverage Production and Service

Consumer Information Network (CIN)

Ministry of Health — Department of Public Health

Government Chemist's Department

K.I. R. D. I

Unilever (K) Ltd.

Jomu Spice Firm

Tropical Heat Ltd.

Top Foods EA Ltd.

Adamji Multi Supplies

Kenya Bureau of Standards — Secretariat.

REVISION OF KENYA STANDARDS

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

Copyright. Users are reminded that by virtue of Section 25 of the Copyright Act, Cap. 12 of 2001 of the Laws of Kenya, copyright subsists in all Kenya Standards and except as provided under Section 26 of this Act, no Kenya Standard produced by Kenya Bureau of Standards may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from the Managing Director.

PUBLIC REVIEW DRAFT

Garlic paste — Specification

KENYA BUREAU OF STANDARDS (KEBS)

Head Office: P.O. Box 54974, Nairobi-00200, Tel.: (+254 020) 605490, 602350, Fax: (+254 020) 604031
E-Mail: info@kebs.org, Web: <http://www.kebs.org>

Coast Region Region

P.O. Box 99376, Mombasa-80100
P.O. Box 2138, Nakuru-20100
Tel.: (+254 041) 229563, 230939/40
Tel.: (+254 051) 210553, 210555
Fax: (+254 041) 229448

Lake Region

P.O. Box 2949, Kisumu-40100
Tel.: (+254 057) 23549, 22396
Fax: (+254 057) 21814

Rift Valley

Foreword

This Kenya Standard was developed by the Spices and Condiments Technical Committee under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

Garlic paste is made from garlic (*Allum sativum*) cloves which have been crushed into a paste. This standard specifies physical and chemical limits as well as microbiological and metallic contaminant limits. It also sets out hygiene and packaging and labelling requirements and preserves test methods.

This second edition standard has been reviewed to incorporate reviewed test methods for physical requirements, microbiology and heavy metal contaminant limits. These Reviewed test methods bring the standard in line with requirements for trade in the EA region and for global trade.

During the development of this standard, reference was made to the following documents:

The Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya.

Codex Stan 192 - Codex General Standard for food additives.

Codex Stan 193 - Codex General Standard for contaminants in Foods and feeds.

The Public Health Act, Cap. 242 of the Laws of Kenya.

Acknowledgement is hereby made for the assistance obtained from these sources.

PUBLIC REVIEW DRAFT

Garlic paste — Specification

1 Scope

This Kenya Standard specifies requirements and the methods of sampling and test for garlic paste.

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.

KS EAS 38, *Labelling of pre-packaged foods*

KS ISO 7954:1 Microbiology of food and animal feeding stuffs — General guidance for enumeration of yeasts and moulds — Part 8: Colony count technique at 25 degrees C.

KS ISO 21527-2:2008 Kenya Standard — Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds Part 2: Part 2: Colony count technique in products with water activity less than or equal to 0,95

KS ISO 4832:, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coli forms — Part 3: Colony-count technique.

KS ISO 6579, Microbiology of food and animal feeding stuffs — Part 6: Horizontal method for the detection of Salmonella spp.

KS ISO 6888-1, Microbiology of food and animal feeding stuffs Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) Part 1: Technique using Baird-Parker agar medium.

KS ISO 16654, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Escherichia coli 0157.*

KS 2431: 2018

KS ISO 793, Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of *Clostridium perfringens* -- Colony-count technique.

KS ISO 6633, Fruits ,Vegetables and derived products- Determination of lead content- Flameless atomic absorption Spectrometric Method.

KS ISO 6634, Fruits ,Vegetables and derived products- Determination of Arsenic Content - Silver diethyldithiocarbamate spectrophotometric Method.

EAS 35, Fortified *Edible salt* – *Specification*.

KS EAS 39---*Code of hygienic practice for food and drink manufacturing companies*

KS ISO 948 –*Spices and condiments -- Sampling*

KS ISO 16050, *Foodstuffs — Determination of Aflatoxin B₁, and the total contents of Aflatoxins B₁, B₂, G₁ and G₂ in cereals, nuts and derived products — High performance liquid chromatographic method*

Codex Stan 193 --Codex Standard for Contaminants in food and feeds.

Codex Stan 192- Codex standard for Additives in Foods

KS ISO 948, Spices and condiments — Methods of sampling.

[ISO 2173](#) - Fruit and vegetable products -- Determination of soluble solids -- Refractometric method.

3 Definitions

For the purpose of this standard, the following definition shall apply.

3.1 extraneous vegetable material

fibre and skin common to garlic and stems up to 10 mm in length aggregating an area of 5 cm²

PUBLIC REVIEW DRAFT

4 Requirements

4.1 General requirements

4.1.1 Garlic paste shall be obtained by crushing and blending of clean garlic pulp with subsequent concentration under vacuum.

4.1.2 Garlic paste shall be of the consistency of crushed garlic.

4.1.3 The garlic cloves used shall be mature, sound, fresh, and free from insect and fungal attack.

4.1.4 Colour

Garlic paste shall be light to ivory brown in colour.

4.1.5 Flavour

Garlic paste shall have characteristic flavour with no burnt flavour or other off flavour.

4.1.6 Defects

Garlic paste concentrate shall be free from extraneous vegetable material.

4.1.7 Garlic paste shall be free of insect fragments and contamination from rodents.

4.2 Specific requirements

4.2.1 Garlic paste shall comply with the physical and chemical limits given in Table 1.

Table 1 — Physical and chemical limits for garlic paste ?

Table 1 — Physical and chemical limits for garlic paste

SL	Characteristic	Requirem	Test
----	----------------	----------	------

No.		ent/ Limits	method
i)	Total soluble solids, % (mass/mass), min.	55	ISO 2173
	Acidity as Acetic acid	5	KS 03-400 ISO Test method ?
ii)	Total insoluble pulp, % (mass/mass), max.	2	Appendix C

4 .2.2 Garlic paste shall comply with the heavy metal contaminant limits given in Table 2.

Table 2 — Heavy metal contaminant limits for garlic paste

SL No	Characteristic	Requirement	Test method
i)	Arsenic (as As), ppm, max.	(0.5)	KS ISO 6634
ii)	Lead (as Pb), ppm max.	2.5 (2)	KS ISO 6633

4 .2.3 Garlic paste shall comply with the microbiological limits given in Table 3.

Table 3 — Microbiological limits for garlic paste

SL No	Characteristic	Limits	Test method
i)	Coli forms, cfu/g	< 10	KS ISO 4832
ii)	Yeast and mould counts, cfu/g	< 10	KS ISO 7954:1
iii)	<i>E. Coli</i> counts, cfu/g	Absent	KS ISO 16654
iv	<i>Clostridium perfringens</i>	< 10	KS ISO 793
v)	<i>Salmonella</i> , cfu /25 g	Absent	KS ISO 6579
Vi)	<i>Staphylococcus aureus</i> cfu/ g	< 10	KS ISO 6888

5. Hygiene

5.1 Garlic paste shall be manufactured under hygienic conditions complying with the Public Health Act, Cap. 242 of the Laws of Kenya, the Food Drugs and Chemical Substances Act Cap. 254 of the Laws of Kenya and KS EAS 39 .

5.1.1 Garlic paste shall comply with the Biosafety Act, No 2 of 2009 of the laws of Kenya .

5.3 Aflatoxins

Garlic paste shall not have more than 10 ppb total aflatoxins and 5 ppb Aflatoxin B1. when tested according to KS ISO 165060.

6 Weights and measures

6.1 Fill of the container

Fill of the container shall comply with the Weights and Measures Act, Cap 213, of the Laws of Kenya.

7 Environmental management

Garlic paste shall be processed in an environment that conforms to Environment Management Coordination Act 1999 No.8 on environmental management and conform to Cleaner Production.

8 Packaging and marking

8.1 Packaging

Garlic paste shall be packed in food grade containers that secure product integrity and safety of the product.

8.2 Labelling

Labelling shall be done in accordance with KS EAS 38. Each container shall be legibly and indelibly marked with the following particulars:

- i) name of the product;
- ii) name and physical address of the manufacturer;
- iii) net weight of the contents in grams or kilograms;
- iv) date of manufacture;
- v) code number/lot number;
- vi) list of ingredients in descending order;
- vii) expiry date;
- viii) storage instructions;
- ix) instructions for use;

KS 2431: 2018

- x) instructions for disposal of used package;
- xi) irradiation status, where applicable;
- xii) GMO status, where applicable.

9 Sampling

Sampling shall be done according to KS ISO 948.

Annex B
(normative)
(Table 1, Item ii))

Determination of total soluble solids

B.1 Apparatus

B.1.1 Refractometer, either hand or Abbe refractometer.

B.2 Procedure

Keep one or two drops of the Garlic paste (~~tamarind concentrate~~) sample between the two prisms of the refractometer and read the percentage of refractometric soluble solids. Although the instrument is calibrated at 20°C, no temperature correction is usually necessary, if readings are taken at room temperature.

Annex C
(normative)
(Table 1, item iii)

Determination of total insoluble pulp

C.1 Procedure

Boil 20 g of sample with 100-mL distilled water for 30-40 min. Filter through dried and weighed filter paper. Wash with hot water. Dry paper at 100°C to constant weight. From this weight subtract the weight of the filter paper. This gives the weight of total insoluble pulp.

PUBLIC REVIEW DRAFT