



DEAS 1109:2022

ICS 67.080.00

DRAFT EAST AFRICAN STANDARD

Fruit and vegetable ketchup — Specification

EAST AFRICAN COMMUNITY

Copyright notice

This EAC document is copyright-protected by EAC. While the reproduction of this document by participants in the EAC standards development process is permitted without prior permission from EAC, neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from EAC.

Requests for permission to reproduce this document for the purpose of selling it should be addressed as shown below or to EAC's member body in the country of the requester:

© East African Community 2022 — All rights reserved

East African Community

P.O. Box 1096,

Arusha

Tanzania

Tel: + 255 27 2162100

Fax: + 255 27 2162190

E-mail: eac@eachq.org

Web: www.eac-quality.net

Reproduction for sales purposes may be subject to royalty payments or a licensing agreement. Violators may be prosecuted.

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Requirements	3
4.1 General requirements	3
5 Food additives	4
6 Contaminants	4
6.1 Pesticide residues	4
6.2 Heavy metals	4
7 Hygiene	4
8 Packaging	5
9 Weights and measures	5
10 Labelling	5
10 Sampling	5

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 025, *Processed fruits, vegetables and tubers*.

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

Fruit and vegetable Ketchup — Specification

1 Scope

This East African Standard specifies the requirements, sampling and test methods for fruit and/or vegetable ketchup intended for human consumption as condiment and ingredient for food.

This standard does not apply to tomato ketchup as it is covered in EAS 66-2

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.

AOAC Official Method 999.11, *Lead, Cadmium, Copper, Iron, and Zinc in Foods Atomic Absorption*

ISO 3310 (all parts), *Test sieves — Technical requirements and testing*

ISO 4833-1, *Microbiology of the food chain — Horizontal method for the enumeration of micro-organisms — Part 1: Colony-count at 30 °C — Pour plate technique*

Codex Stan 192,, *General standard for food additives*

EAS 39, *Code of practice for hygiene in the food and drink manufacturing industry*

EAS 35, *Fortified food grade salt — Specification*

ISO 763, *Fruit and Vegetable Products — Determination of ash insoluble in hydrochloric acid*

ISO 874, *Fresh fruits and vegetables — Sampling*

ISO 1842, *Fruit and vegetable products — Determination of pH*

ISO 2173, *Fruit and vegetable products — Determination of soluble solids — Refractometric method*

ISO 6579-1, *Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella — Part 1: Detection of Salmonella spp*

ISO 7251, *Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of presumptive Escherichia coli - Most probable number technique*

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 44 degrees C 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*

EAS 38, *Labelling for prepacked foods — General requirements*

EAS 39, *Hygiene in the in the food and drink manufacturing industry — Code of practice*

3 Terms and definitions

For the purpose of this standard, the following terms shall apply;

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1 fruit ketchup

product derived from sound, ripe fruit(s) and highly seasoned with characterising ingredients in quantities that materially alter the flavour, aroma and taste of the fruit component.

3.2 vegetable ketchup

product derived from sound, mature vegetable(s) and highly seasoned with characterising ingredients in quantities that materially alter the flavour, aroma and taste of the vegetable component.

3.3 fruit and vegetable ketchup

product derived from a mixture of sound, ripe fruit(s) and vegetable(s) and highly seasoned with characterising ingredients in quantities that materially alter the flavour, aroma and taste of the fruit and component preserved using sugar and vinegar.

3.4 sound

produce free from fungal, bacterial or virus disease or other deterioration (such as decay, breakdown or damage caused by any reason, or physiological disorders, seen in the field or during storage) that appreciably affects the appearance, edibility, the keeping quality of the produce or market value.

4 Requirements

4.1 Ingredients

4.1.1 Essential ingredients

- a) Fruit(s) and/or vegetable(s) complying with relevant EAS or national standards and their composition shall not be less than 50% of the entire mixture
- b) Vinegar complying with EAS 147-1 or EAS 147-2;
- c) Sugar complying with relevant EAS

4.1.2 Optional ingredients

The following ingredients may be used in the preparation of fruit and/or vegetable ketchup

- edible salt complying with EAS 35
- Other suitable food ingredients such as, tamarind, dry fruits and nuts, edible oil, starch etc.
- spices and condiments complying with relevant EAS
- Potable water complying with EAS 12

4.2 Styles of presentation

4.2.1 Fruit and/or vegetable ketchup may be of the following styles:

- a) pulp or crushed pulp or both
- b) pulp and pieces

4.2.2 Other styles

Any other presentation of the product should be permitted provided that the product:

- a) is sufficiently distinctive from other styles of presentation laid down in the Standard;
- b) meets all other requirements of the Standard, as applicable; and
- c) is adequately described on the label to avoid misleading the consumer

4.3 General requirements

Fruit and/or vegetable ketchup shall:

- a. be free from foreign matter affecting the quality and safety of the product;
- b. be free from foreign smell and taste
- c. show no sign of spoilage
- d. be of good consistency, and uniform colour; and
- e. be practically free from defects including the following:
 - fruit peel;
 - any extraneous plant material; and
 - dark specks or scale-like particles.

4.4 Specific requirements

Fruit and/or vegetable ketchup shall comply with the specific requirements in Table 1 when tested in accordance with the methods specified therein.

Table 1 — Specific requirements for fruit and/or vegetable ketchup

Characteristic	Requirement	Test method
Total soluble solids percent by mass, min.	26	ISO 2173
Fruit / Vegetable content,%, min	50	GMP
pH, max	4.6	ISO 1842
Specific gravity at 20 °C, min.	1.11027	
Total ash, %, m/m, max	5	Annex B
Acid insoluble ash,%, m/m, max	0.5	ISO 763
Sodium chloride, percent by mass, max.; when used	2	AOAC 971.27

5. Food additives

Fruit and/or vegetable ketchup may contain only permitted additives in accordance with CODEX STAN 192.

6. Contaminants

6.1 Pesticide residues

Fruit and/or vegetable ketchup shall comply with the pesticide maximum residue limits provided by the Codex Alimentarius Commission.

6.2 Heavy metals

Lead (Pb) and Cadmium (Cd) in fruit and/or vegetable ketchup, when tested in accordance with ISO 6633 and ISO 6561-2 shall not exceed 0.1 and 0.05 mg/kg respectively.

7. Hygiene

7.1 Fruit and/or vegetable ketchup shall be produced and handled under hygienic conditions in accordance with EAS 39.

7.2 Fruit and/or vegetable ketchup 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 fruit and/or vegetable ketchup

Microorganism	Limit	Test method
Total plate count, cfu/g, max.	10 ²	ISO 4833-1
Yeast and moulds, cfu/g, max.	10	ISO 21527-2
<i>Escherichia coli</i> , MPN/g or CFU/g.	Absent	ISO 7251/ ISO16649-2
Salmonella, /25 g	Absent	ISO 6579-1

8. Packaging

Fruit and/or vegetable ketchup shall be packaged in food grade material that ensures the integrity and safety of the product.

9. Labelling

In addition to the labelling requirements of EAS 38, the following information shall be legibly and indelibly marked or labeled:

- a) name of the product;
 - "X" Ketchup, where X denotes the name of fruit(s) or vegetable(s) used in the ketchup;
 - In case of an added ingredient, as defined in 5.1.2 alters the flavour characteristic of the product, the name of the food shall be accompanied by the term "flavoured with X" or "X flavoured" as appropriate.
 - In case the product is prepared from two or more fruits and /or vegetables, the product name shall include the names of the fruits and or vegetables comprising the mixture in descending order of proportion by weight(m/m) or the words " fruit/ vegetable ketchup blend/mixture ", mixed fruit and/or vegetable ketchup", or other similar wordings.
- b) date of manufacture;
- c) best before date;
- d) country of origin;

- e) name and address of manufacturer;
- f) net content in metric units;
- g) lot identification;
- h) list of ingredients in descending order
- i) Instruction for use
- j) Brand/ trade name, if any
- k) Storage conditions

10. Sampling

Sampling shall be done in accordance with ISO 874

Annex A

(normative)

Determination of the fruit / vegetable content

A.1 Apparatus

2 mm aperture screen test sieves complying with ISO 3310

A.2 Principle

Take 50 g of the representative sample in a flask, stir it with 200 ml boiling water for about two minutes, and transfer to a previously weighed (2 mm) aperture test sieve. Allow to drain for two minutes, Weigh the sieve along with the remaining portion and calculate the percentage of fruit / vegetable content

Annex B (normative)

Determination of total ash

B.1 Procedure

Weigh accurately about 2 g of the material in a tared porcelain, silica or platinum dish. Ignite with the flame of a Meker burner for about one hour. Complete the ignition by keeping in a muffle furnace at $600^{\circ} \pm 20^{\circ}\text{C}$ until grey ash results. Cool in a desiccator and weigh. Ignite the dish again in the muffle furnace for 30 minutes, cool and weigh. Repeat this process until the difference in weight between two successive weighings is less than 1 mg. Note the lowest weight

B.1 Definitions

B.1.1

lot

collection of primary containers or units of the same size, type, and style manufactured or packed under similar conditions and handled as a single unit of trade

B.1.2

lot size

number of primary containers or units in the lot

B.1.3

sample size

total number of sample units drawn for examination from a lot

B.1.4

sample unit

container, a portion of the contents of a container, or a composite mixture of product from small containers that is sufficient for the examination or testing as a single unit. For full of container, the sample unit shall be the entire contents of the container

B.4 Calculation

Total ash (on moisture-free basis), expressed as percent by mass, shall be calculated as follows:

$$100 \frac{(W_2 - W)}{(W_1 - W)}$$

Where

W_2 the lowest weight in g of the dish with the ash;

W weight in g of the empty dish; and

W_1 weight in g of the dish with the dried material taken for the test.

