DEAS 945:2018

ICS 67.220.10

# DRAFT EAST AFRICAN STANDARD

## Pickles — Specification

## EAST AFRICAN COMMUNITY



First Edition 2018

## Copyright notice


*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*

# Contents

Page



 

# 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 016, *[horticulture]*, Subcommittee SC 02, *[processed horticulture]*.

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.

This second/third/… edition cancels and replaces the first/second/… edition (EAS nnn-n:yyyy), which has been technically revised.

EAS nnn consists of the following parts, under the general title *Introductory element — Main element*:

 

# Pickles— Specification

# 1 Scope

This Draft East Africa Standard specifies the requirements and methods of sampling and test for pickles 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.

EAS 38, *General standard for labeling of prepackaged foods*

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

ISO 4833 (all parts), *Microbiology of the food chain — Horizontal methods for the enumeration of microorganisms*

ISO 6579, *Microbiology of food and animal feedingstuffs — Horizontal methods for the detection of Salmonella spp.*

ISO 6633, *Fruits, vegetables and derived products — Determination of lead content — Flameless atomic absorption spectrometric method*

ISO 7251, *Microbiology of food and animal feedingstuffs — Horizontal methods for the detection and enumeration of presumptive Escherichia coli — Most Probable Number technique*

ISO 21527-1, *Microbiology of food and animal feedingstuffs — Horizontal methods for the enumeration of yeasts and moldsI*

ISO 6636-2, *Fruits, vegetables and derived products — Determination of zinc content — Part 2: Atomic absorption spectrometric method*

ISO 6634, *Fruits, vegetables and derived products — Determination of arsenic content — Silver diethyldithiocarbamate spectrophotometric method*

ISO 7952, *Fruits, vegetables and derived products — Determination of copper content — Method using flame atomic absorption spectrometry*

*ISO 2447, Fruit and vegetable products — Determination of tin*

## 3 Terms and definitions

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

**3.1**
**pickles**
fruits or vegetables preserved in common salt, vinegar, edible oil or citrus fruits juices

**3.2**
**defects**
means fault or inadequacy

**3.3**
**food grade material**
materials that will safeguard the hygienic, safety, nutritional, technological, and organoleptic qualities of the product.

## 4 Types

Pickles shall be of the following three types depending on preserving medium.

Type 1 – Pickles in vinegar

Type 2 – Pickles in citrus fruit juice or brine and

Type 3 – Pickles in edible vegetable oil

## 5 Grades

Pickles shall be of two grades

a) Grade 1 and
b) Grade 2

## 4 Requirements

### 4.1 General requirements

**4.1.1** The fruits and vegetables used in the preparation of pickles shall be wholesome i.e fresh or cured, clean and sound, and shall be practically free from damage or fungal attack. The only substances that may be added to pickles are spices, salt, vinegar and sugar.

Pickles shall be suspended in either vinegar of good quality (Type 1), freshly prepared brine /citrus fruit juice (Type 2) or any edible vegetable oil (Type 3).

**4.1.2** Pickles shall;

a) have the essential physical, chemical, nutritional characteristics, colour, aroma and flavour of the same kind of fruits or vegetables from which it is made.

b) shall be free from living insects, mites or other parasites and moulds, and shall be practically free from dead insects, live insect fragments and rodent contamination visible to the naked eye or with magnifying lens

c) have uniform appearance, consistency and characteristic of the product and remain as such when stored under normal storage conditions.

### 4.2 Specific requirements

Pickles shall also conform to the requirements given in Table 1

 

**Table 1– Requirements for pickles**

| Type of Pickle | Characteristic | Requirement | Test method |
|---|---|---|---|
| *Type 1*<br>*Type 2*<br>*Type 3* | Fluid portion, per cent by mass of the net mass, max | 33.3 | By proportion |
| *Type 1 and Type 3* | Acidity, as acetic by fluid portion, percent by mass, max. | 3.0 | ISO 750 |
| *Type 2* | Acidity for pickles in citric acid, percent by mass, max | 1.2 | |
| *All types* | Sodium chloride, percent by mass, max | 12 | Annex B |

## 5 Contaminants

### 5.1 Pesticide residues

Pickles shall conform to the pesticide residue limits prescribed by the Codex Alimentarius Commission of the respective commodity.

### 5.2 Metal contaminants

Pickles shall not contain any metallic contaminants in excess of levels specified in Table 2

**Table 2– Limit for metal contaminants in Pickles**

| Class | Maximum (mg/kg) | Test method |
|---|---|---|
| *Arsenic (as As )* | 0.2 | ISO 6634 |
| *Tin (as Sn)* | 250 | ISO 2447 |
| *Copper (as Cu)* | 5 | ISO 7952 |
| *zinc (as Zn)* | 5 | ISO 6636-2, |
| *Lead (as Pb)* | 0.1 | ISO 6633 |

## 6. Hygiene

**6.1** Pickles shall be manufactured in accordance with the requirements and Good Hygienic Practices prescribed in EAS 39 (see clause 2).

**6.2** Pickles shall be free from pathogenic organisms and shall comply with the microbiological limits provided in Table 5, when determined by the methods shown alongside the table.

 

**Table 3– Microbiological limits for pickle**

| Type of micro-organism | Limits (number of count) maximum | Test method |
|---|---|---|
| *Total viable counts, cfu/g, max* | 10 | ISO 4833 (all parts) |
| *Yeasts and moulds cfu/g* | shall be absent | ISO 21527-1 |
| *Escherichia coli cfu/mL* | shall be absent | ISO 7251 |
| *Salmonella sp. per 25 g* | shall be absent | ISO 6579 |
| *Bacillus spp* | Absent | ISO 4833-1 |
| | | |

## 8 Packaging

Pickles shall be packaged in food grade containers

## 9 Weight and measures

The volume and filling of the container shall comply with weight and measures regulations in the respective partner state

## 10 Labelling

a) In addition to the requirements of EAS 38, 803,804 and 805 the following specific labelling requirements shall apply and shall be legibly and indelibly marked Name, type and grade of the product

b) Brand or trade name, if any

c) Name, address of the manufacturer

d) Country of origin

e) Date of manufacture

f) Best before date

g) Batch or code number,

h) List of ingredients in descending order of proportion and

i) Net mass of the contents.

## 10 Methods of sampling

Sampling shall be in accordance with Annex C and test shall be done in accordance with methods specified in the relevant Tables and annexes of this Standard

# Annex A

## Determination of the grade of the product

### A.1 Apparatus

**A.1.1** White porcelain bowls- big enough to hold the contents of the container under examination.
**A.1.2** Stainless steel spoons- Table spoon.

### A.2 Procedure

#### A.2.1 Panel of judges

Grades of the product shall be judges by a panel of three to five judges. All the judges constituting a panel shall be conversant with the factors covering the quality of the product. The containers shall be opened and the contents poured separately into white porcelain bowls. Each judge shall independently examine the contents from each of the container and indicate scores for different characteristics.

***A.2.1.1*** The judges shall consider the following characteristics; colour and texture, taste and flavor; and absence of defects.

#### A.2.2 System of scoring

The variations within each factor are so described in Table 5 that the scores may be ascertained for each factor and expressed numerically. The relative importance of each factor has been expressed numerically on scale of 100. Each judge shall indicate the score for the individual factors by the method described n Table 3, and record this observations in score sheet.

**A.2.1** The scores as number points indicated by the judges for the content of each container for three factors (see A.2.1.1) shall be recorded in a tabular form in the score card and the average score calculated for each container entered in the appropriate column (see Table 2 and A.2.3.2)

#### A.2.3 Ascertaining the grade

#### A.2.3.1 Consistency among judges

To ascertain the consistency of judgment among the judges, the total score indicated by each of them for the contents of the same container shall be calculated by adding up the scores for the various individual characteristics. If the difference between the maximum and the minimum of the total score so obtained does not exceed (K + 5) judges, the scoring shall be deemed as consistent for the container under consideration. If the differences exceeds (K + 5), the score, that is the furthest from its immediate neighbour (the scores being arranged in one order) shall be discarded and the consistency among the remaining judges shall be examined.

**A.2.3.2** When the consistency (see A.2.3.1) is thus established, the overall average scores indicated by the judges whose scoring has been found to be consistent, shall be calculated for each can. The average score for each of the individual characteristics shall also be individual characteristics shall also be calculated by taking into account the corresponding scores as given scores as given by the same judges for the contents of the same container.

#### A.2.3.3 Assignment of grade

In order to assign a grade for the contents of a container, the following procedure shall be adopted.

#### A.2.3.3.1 Grade 1

 

The score for each factor individually shall be not less than 65 percent of the maximum score obtainable and the overall average scores shall not be less than 75 points.

**A.2.3.3.2 Grade 2**

The score for each factor individually shall be not less than 65 percent of the maximum score obtainable and the overall average scores shall not be less than 65 points

# Annex B.
# Determination of sodium chloride

## B.1 Principle

The salt from the foodstuff is extracted either by carefully ashing at 500 °C – 550 °C to remove alkali chloride followed by dissolution of the ash. Alternately, the test portion is boiled in dilute nitric acid. In the presence of acid excess silver nitrate is added and back titrated with ammonium or potassium thiocyanate (Volhard procedure) while in the absence of acid the chloride ion is determined directly by titration of test portion with 0.1 silver nitrate (Mohr procedure).

## B.2 General

Either of the two methods, namely, Method 1 (see B.2.1) and the Method 2 (see B.2.2) may be used. Method 1 shall be the referee method in case of dispute.

## B.2.1 Method 1

### B.2.1.1 Apparatus

a) **Graduated flask** – of 100 ml capacity
b) **Erlenmeyer flask** – of 250 ml capacity
**c) Burrette**
**d) Pipette**
**e) Balance**
**f) Centrifuge**

### B.2.1.2 Reagents

**a) Ethyl alcohol**
**b) Concentrated nitric acid**
c) **Standard silver nitrate solution** – 0.1 mol/l
d) **Ferric alum indicator solution** – a saturated solution of ferric ammonium sulphate ($FeNH_4(SO)_2$, $12H_2O$),
**e) Standard ammonium thiocyanate solution 0.1 mol/l.**

## B.2.1.3 Procedure

Weigh exactly 5 g to 10 g of the test portion and transfer to a 100 ml graduated flask with roughly 50 ml of 80 % alcohol. Shake well to suspend all insoluble material. Add 1ml of concentrated nitric acid, and with pipette, add excess of known volume of 0.1 mol/L silver nitrate solution. Dilute to 100 ml with alcohol. Then transfer the mixture to the centrifuge bottle and centrifuge for 5 min. at appropriately 1 800 RPM.

Pipette 50 ml of the supernatant liquid into a 300 ml Erlenmeyer flask and - add two milliliter of concentrated nitric acid and two milliliter of ferric alum solution. Titrate with the standard ammonium to a permanent light brown colour.

## B.2.1.4 Calculation

Sodium chloride, in the brine, per cent by mass.

$$= 11.6 \quad \frac{(V_1M_1 - V_2M_2)}{W}$$

 

Where

$V_1$ = volume in milliliters of the standard silver nitrate solution
$M_1$ = molarity of the standard silver nitrate solution
$V_2$ = volume in milliliters of the standard ammonium thiocyanate solution used.
$M_2$ = molarity of the standard ammonium thiocyanate used, and
W = mass in grams of the brine in the aliquot

## B.2.2 Method 2

## B.2.2.1 Reagents

a) **Standard sodium hydroxide solution** – 0.1 mol/l
b) **Standard silver nitrate solution** – 0.1 mol/l
c) **Phenolphthalein indicator solution** – prepared by dissolving 0.1 g of phenolphthalein in 100 ml of 60 percent rectified spirit.
d) **Potassium chromate indicator solution** approximately 5% *(W/v).*

## B.2.2.2 Procedure

Take a suitable aliquot of the solution prepared as in B.2.2.3.

**B.2.2.3** If it is acidic, neutralize it with the standard sodium hydroxide solution using phenolphthalein as an indicator.
-Add 2 ml of 5% Potassium chromate indicator solution, then titrate with 0.1 N standard silver nitrate solution. Make simultaneously a blank determination.

## B.2.2.4 Calculation

Sodium chloride, in the brine, percent by mass

$$= \frac{58.4\ (VM)\ x\ 100}{W\ x\ 1000}$$

Where $V$ = volume in ml of the standard silver nitrate, solution used (titre value)
$M$ = molarity of the standard solution, and
$W$ = Weight in grams of the brine in the aliquot.

# Annex C
(normative)

# Sampling

## C.1 Definitions

**C.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

**C.1.2**
**lot size**
number of primary containers or units in the lot

**C.1.3**
**sample size**
total number of sample units drawn for examination from a lot

**C.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 fill of container, the sample unit shall be the entire contents of the container

 

## C.2 Sampling plans

| Lot size (primary containers) | Size of container, *n* [1] |
|---|---|
| Net weight equal to or less than 1 kg (2.2 lb) | |
| 4 800 or less | 13 |
| 4 801 to 24 000 | 21 |
| 24 001 to 48 000 | 29 |
| 48 001 to 84 000 | 48 |
| 84 001 to 144 000 | 84 |
| 144 001 to 240 000 | 126 |
| Over 240 000 | 200 |
| Net weight greater than 1 kg (2.2 lb) but not more than 4.5 kg (10 lb) | |
| 2 400 or less | 13 |
| 2 401 to 15 000 | 21 |
| 15 001 to 24 000 | 29 |
| 24 001 to 42 000 | 48 |
| 42 001 to 72, 000 | 84 |
| 72 001 to 120 000 | 126 |
| Over 120 000 | 200 |
| Net weight greater than 4.5 kg (10 lb) | |
| 600 or less | 13 |
| 601 to 2 000 | 21 |
| 2 001 to 7 200 | 29 |
| 7 201 to 15 000 | 48 |
| 15 001 to 24 000 | 84 |
| 24 001 to 42 000 | 126 |
| Over 42 000 | 200 |
| [1] *n* = number of primary containers in sample. | |

 

# Bibliography