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## DRAFT EAST AFRICAN STANDARD

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Fresh mushrooms — Specification

EAST AFRICAN COMMUNITY

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PUBLIC REVIEW DRAFT

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## 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. XXXXXX.

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 Fresh Fruits, vegetables and Tuber

This second edition cancels and replaces the first edition (EAS 56:2000), which has been technically revised.

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.

## Fresh mushrooms — Specification

### 1 Scope

This Draft East African Standard specifies requirements for edible mushrooms, the carpophores (fruiting bodies) of strains grown from the genus *Agaricus* (syn. *Psalliota*) to be supplied fresh to the consumer.

This standard does not apply to mushrooms for industrial processing.

### 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

CAC/RCP 44, *Recommended international code of practice for packaging and transport*

CAC/RCP 53, *Code of hygienic practice for fresh fruits and vegetables*

EAS 38, *Labeling of pre-packaged foods — General requirements*

ISO 874; *Fresh fruits and vegetables — Sampling.*

### 3 Terms and definitions

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

##### **fresh mushrooms**

fruit bodies of the fungi kingdom, which are cultivated and suitable for, use as human food

#### 3.2

##### **uncut fresh mushrooms**

mushrooms, which have the lower part of the stalk uncut

#### 3.3

##### **cut fresh mushrooms**

mushrooms, which have the lower part of their stalk cut cleanly and approximately perpendicular to the longitudinal axis

#### 3.4 In both groups 3.2 and 3.3 distinction is made between the stages of development:

##### 3.4.1

##### **closed mushrooms**

mushroom with a the cap completely closed

### **3.4.2**

#### **open mushrooms**

mushroom with an open cap (open cap, flats; a slight downturn of the edges of the cap is required)

### **3.4.3**

#### **veiled fresh mushrooms**

mushrooms whose cap is connected to the stalk by the veil

### **3.4.4**

#### **flat fresh mushrooms**

mushrooms that are fully open (but the edges of the cap are neither too cupped nor inverted).

### **3.5**

#### **damage**

any defect or combination of defects which materially deviates from the appearance, or the edible or marketing quality of the fresh mushroom.

### **3.6**

#### **clean mushrooms**

mushrooms free from foreign substances other than traces of casing material

### **3.7**

#### **diameter**

greatest dimension of the cap measured at right angles to the stem

### **3.8**

#### **intact**

fresh mushrooms not having any mutilation or injury spoiling the integrity of the produce

## **4 Requirements**

### **4.1 Minimum requirements**

In all classes, subject to the special provisions for each class and the tolerances allowed, mushrooms shall be:

- a) free from poisonous mushrooms and other toxic substances
- b) free from other species of edible mushrooms.
- c) firm and intact in case of cut mushrooms the cut shall be clean
- d) clean; practically free of any visible foreign matter;
- e) free from pests and damage caused by pests
- f) free from insects and insects damage.
- g) sound; fresh mushrooms showing the following defects are excluded:
  - i. rotting;
  - ii. serious bruising: damaging the mushroom due to rough handling and/or too tight packaging;
  - iii. diseases: internal necrosis, bacterial blotch, dry bubble disease; and
  - iv. chilling injury

- h) free of abnormal external moisture
- i) free of any foreign smell and/or taste
- j) uniform colour according to the variety
- k) free from physical damage; and
- l) with plump stem, and the end may be cut or whole.

#### **4.2 Maturity requirement**

The development and condition of the mushrooms shall be such as to enable them:

- a) to withstand transportation and handling, and
- b) to arrive in satisfactory condition at the place of destination. mushrooms are highly perishable cooling can reduce deterioration of the fresh mushroom

### **5 Classification**

The mushrooms are classified in three classes, as defined below

#### **5.1 "Extra" class**

Mushrooms in this class shall:

- a) be of superior quality in shape, appearance, development and colouring;
- b) be characteristic of the uncut mushrooms and cut mushrooms commercial types;
- c) be well formed;
- d) be free from defects with the exception of very slight superficial defects provided these do not affect the general appearance of the mushroom, the quality, the keeping quality and presentation in the package;
- e) have very slight superficial defects which may appear during cultivation, harvest, storage, packaging or transportation;
- f) be typical of white", "brown" or "chestnut" colour groups;
- g) be fresh, approximately perpendicular to the longitudinal axis. in the case of cut mushrooms; and
- h) be fresh and practically free of casing material; uncut fresh mushrooms may also have traces of casing material on the foot.

#### **5.2 Class I**

**5.2.1** Fresh mushrooms in this class shall be of good quality.

**5.2.2** In shape, appearance, development and colouring they shall be characteristic of the uncut mushrooms and cut mushrooms of commercial types.

**5.2.3** In the case of cut fresh mushrooms, the cut shall be approximately perpendicular to the longitudinal axis



**5.2.4** The following slight defects, however, may be allowed provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

- a) slight deformations in the shape of the cap or stalk;
- b) slight defect in colouring;
- c) slight superficial bruising from harvesting, handling or pressure caused by the plastic lid or film used for pre-package; and
- d) slight traces of casing material; uncut fresh mushrooms may also have some casing material on the foot.

### **5.3 Class II**

**5.3.1** This class includes fresh mushrooms which do not qualify for inclusion in the higher classes but satisfy the minimum requirements specified in Clause 4.

**5.3.2** Mushrooms in this class shall be of marketable quality, suitably presented and suitable for human consumption.

**5.3.3** The following defects may be allowed provided the mushrooms retain their essential characteristics as regards the quality, the keeping quality and presentation:

- a) defect in shape;
- b) defect in colouring;
- c) slight bruising from harvesting, handling or pressure caused by the plastic lid or film used for pre-package is allowed provided damage is slight and is unlikely to develop further;
- d) slight damage to the stalk;
- e) slight internal moisture of the stalk;
- f) discoloured feathering;
- g) hollow stalks a cavity in the stalk is allowed provided the flesh is sound and not discoloured; and
- h) traces of casing material; uncut fresh mushrooms may also have some casing material on the foot.

## **6 Sizing**

Size is determined by the maximum diameter of the cap and the length of the stalk, according to the following specifications:

- a) the minimum cap diameter shall be at least 15 mm for closed cap, veiled and open fresh mushrooms and 20 mm for flat fresh mushrooms; and
- b) the length of the stalk is measured:
  - i) from the gills under the cap for open and flat fresh mushrooms; and
  - ii) from the veil for closed and veiled fresh mushrooms.

Sizing is compulsory for fresh mushrooms in —Extrall class according to Table 1 and Table 2.

mushrooms of Classes I and II shall meet the specified size ranges if the terms "small", "medium" or "large" are indicated.

**Table 1 — Closed, veiled and open mushrooms**

Diameter of cap		Maximum length of stalk	
Code	Size limits	Cut mushrooms	Uncut mushrooms
Small	15 – 45 mm		
Medium	30 – 65 mm	½ of cap diameter	2/3 of cap diameter r
Large	50 mm and above		

**Table 2 — Flat mushrooms**

Diameter of cap		Maximum length of stalk	
Code	Size limits	Cut mushrooms	Uncut mushrooms
Small	20 – 55 mm	2/3 of cap diameter	2/3 of cap diameter
Large	50 mm and above		

## 7 Tolerances

### 7.1 Quality tolerances

#### 7.1.1 "Extra" Class

A total tolerance of 5 %, by number or weight, of mushrooms not satisfying the requirements of the class, but meeting those of Class I is allowed. Within this tolerance, not more than 0.5 % in total may consist of mushrooms satisfying the requirements of Class II quality.

#### 7.1.2 Class I

A total tolerance of 10 %, by number or weight, of mushrooms not satisfying the requirements of the class, but meeting those of Class II is allowed. Within this tolerance, not more than 1 % in total may consist of mushrooms satisfying the requirements of Class II quality nor the minimum requirements, or of mushrooms affected by decay.

#### 7.1.3 Class II

A total tolerance of 10 %, by number or weight, of mushrooms satisfying neither of the requirements of the class nor the minimum requirements is allowed. Within this tolerance, not more than 2 % in total may consist of mushrooms affected by decay

### 7.2 Size tolerances

For all classes: 10 % by number or weight of mushrooms not conforming to the sizes indicated. When the mushrooms are sized, which is obligatory for the —Extrall class, 10% of mushrooms, either by number or weight, may fall outside the given size range

### 7.3 Special tolerances

The special tolerances for mushrooms where the stage of development is indicated are shown in Table 3.

**Table 3 — Special tolerances where the stage of development is indicated**

	<b>Closed fresh mushrooms</b>	<b>Veiled fresh mushrooms</b>	<b>Open fresh mushrooms</b>
Extra class	5 % by number or weight of veiled fresh mushrooms are allowed	5 % by number or weight of open fresh mushrooms are allowed	5 % by number or weight of flat fresh mushrooms are allowed
Class I	10 % by number or weight of veiled fresh mushrooms are allowed	10 % by number or weight of open fresh mushrooms are allowed	10 % by number or weight of flat fresh mushrooms are allowed
Class II	25 % by number or weight of veiled or open fresh mushrooms are allowed	25 % by number or weight of open fresh mushrooms are allowed	25 % by number or weight of flat fresh mushrooms are allowed

## 8 Contaminants

### 8.1 Heavy metals

Mushroom shall comply with those current maximum levels for heavy metals stipulated by the Codex Stan 193

### 8.2 Pesticide residues

Mushroom shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission.

## 9 Hygiene

9.1 Mushroom shall be prepared and handled in accordance with CAC/RCP 53.

9.2 Mushrooms shall be free from parasites, microorganisms or substances originating from them in amounts which may present a hazard to human health.

## 10 Packaging

10.1 Mushrooms shall be packaged in food grade packaging material that will safeguard the hygiene, safety, nutritional, technological and organoleptic qualities of the produce in accordance with CAC/RCP 44 to avoid causing any external or internal damage to the produce

10.2 The containers shall ensure suitable handling, shipping and preservation of the fresh mushrooms

10.3 For package units of mushrooms pre-packed with a maximum weight of 1 kg, mixtures of different colour groups and different mushrooms other than *Agaricus* species are not allowed.

10.4 The visible part of the contents of the package shall be representative of the entire contents.

10.5 The contents of each package shall be uniform and contain only mushroom of the same origin, variety or commercial type, quality and size.

## 11 Labelling

**11.1** The following specific labelling requirements shall apply and shall be legibly and indelibly labelled in accordance with the requirements of EAS 38

- a) name of the produce as, "Fresh mushrooms";
- b) name and physical address of the exporter/producer/packer;
- c) country of origin
- d) class;
- e) sized (if sized) expressed as minimum and maximum cap diameters or by the term "small", "medium" or "large";
- f) net weight; and
- g) use by date.
- h) date of packing;
- i) batch number;

**11.2** for non-retail containers, each package shall bear the particulars outlined below in letters grouped on the same side, legibly and indelibly marked, and visible from the outside, or in the documents accompanying the shipment:

## 12 Sampling

Sampling of mushroom shall be done in accordance with ISO 874.

## Bibliography

- [1] US 1612:2015, Fresh mushroom — Specification
- [2] EAS 56:2000, Fresh mushrooms — Specification
- [3] UNECE Standard FFV-24, *Cultivated mushrooms: 2017 edition*

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