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## Fermented meat products — Specification

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## Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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# Fermented meat products — Specification

## 1 Scope

This standard applies to fermented meat products (ready-to-eat, if not specified, fermented meat products in the text refer to ready-to-eat type), including fermented sausages, dry-cured fermented ham, and other fermented meat products.

This standard specifies the production and sanitary requirements for fermented meat products and establishes a series of test methods to control fermented meat products quality. It also specifies the requirements of transport, storage, packaging and labelling for fermented meat products. This standard applies to the fermented meat production and trade links.

## 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.

ISO 1442, *Meat and meat products — Determination of moisture content (Reference method)*

ISO 937, *Meat and meat products — Determination of nitrogen content (Reference method)*

CAC/GL 52 *General Principles of Meat Hygiene*

CAC/MISC 6 *List of Codex Specifications for Food Additives*

CAC/GL 50 *General Guidelines on Sampling*

CAC/GL 61 *Guidelines on the Application of General Principles of Food Hygiene to the Control of Listeria monocytogenes in Foods*

CAC/GL 21 *Principles for the Establishment and Application of Microbiological Criteria for Foods*

## 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 <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1

#### **Fermented meat products (ready-to-eat)**

Ready-to-eat livestock meat or poultry meat products produced by microbial fermentation and enzymatic action under suitable processing conditions, including fermented sausage, dry-cured fermented ham, and other fermented meat products.

### 3.2

#### **Fermented sausages (ready-to-eat)**

Sausages used fresh or frozen livestock and poultry meats as the main raw materials together with other ingredients, that have undergone mixing, seasoning, dicing, stranding (or chopping), filling, curing (or not), microbiological fermentation, drying, ripening, molding (or not), smoking (or not), slicing (or not), packaging and other processing technologies, are processed into ready-to-eat meat products.

### 3.3

#### **Dry-cured fermented ham (ready-to-eat)**

Fresh or frozen pork legs used as the main raw materials together with other ingredients and starter cultures, that have undergone mixing, seasoning, curing, microbial fermentation, drying, ripening, smoking (or not), molding (or not), slicing (or not), packaging and other processing technologies, are processed into ready-to-eat meat products.

### 3.4

#### **Other fermented meat products (ready-to-eat)**

Fresh or frozen livestock and poultry meats used as the main raw materials together with other ingredients, that produced by microbial fermentation and enzymatic action under suitable processing conditions, are processed into ready-to-eat meat products. Examples include fermented jerky.

## 4 Specification

Fermented meat products must meet the following quality requirements:

### 4.1 Sensory requirements

#### 4.1.1 Fermented sausages (ready-to-eat)

Fermented sausages must meet the following quality requirements:

- 1) for products in whole pieces, their casings will not be damaged and will be adhered to the filling;
- 2) that filling on the cross-section has the appearance of a mosaic of roughly uniform pieces of meat and fat tissue, which are evenly distributed;
- 3) there are no cavities and cracks on the section;
- 4) have a stable color and a pleasant and characteristic smell and taste;
- 5) have the characteristic consistency except in spreadable fermented sausage.

#### 4.1.2 Dry-cured fermented ham (ready-to-eat)

Dry-cured hams in production must meet the following quality requirements:

- 1) the surface is dry and clean;
- 2) that the outer appearance, appearance of the cut, smell, taste, consistency and texture are characteristic of the type of meat and the mature product;
- 3) that they have a characteristic shape, neatly edged edges and without slashes;
- 4) the color of the fleshy parts on the cross-section is characteristic and stable;
- 5) the fatty tissue is white, and the surface layers may have a yellowish shade.

#### 4.1.3 Other fermented meat products (ready-to-eat)

Other fermented meat products in production must meet the following quality requirements:

- 1) the surface is dry;
- 2) that the outer appearance, appearance of the cut, smell, taste, consistency and texture are characteristic of the type of meat and the ripened product;
- 3) the color of the fleshy parts on the cross-section is characteristic and stable.

## 4.2 Raw material

The meat from which the product is prepared shall be of a quality suitable for human consumption and free from objectionable odors and flavors.

The raw material should comply with the requirements of the Code of Hygienic Practice for Meat (CAC/GL 52).

## 4.3 Food additives

The use of food additives shall comply with the requirements of CAC/MISC 6 List of Specifications for Food Additives and the appropriate legislative requirements in the country (or countries) in which the products will be used or will be produced must be considered.

## 4.4 Flavorings

Use of flavoring substances should be consistent with the appropriate legislative requirements in the country (or countries) in which the products will be used or will be produced must be considered.

## 4.5 Final products

### 4.5.1 Fermented sausages (ready-to-eat)

The final product shall have the smell and taste that the fermented sausages should have. The final product shall be substantially free from staining and contamination from the container. Physical and chemical characteristics shall comply with the requirements given in [Table 1](#).

**Table 1 — Physical and chemical indexes of Fermented sausages**

Item	Fermented sausages	Test method
Moisture to protein content ratio <	3.1:1	ISO 1442/ISO 937

### 4.5.2 Dry-cured fermented ham (ready-to-eat)

The final product shall have the smell and taste that the fermented meat products should have. Physical and chemical characteristics shall comply with the requirements given in [Table 2](#).

**Table 2 — Physical and chemical indexes of dry-cured fermented ham**

Item	Dry-cured fermented ham	Test method
Moisture content %<	63.5 %	ISO 1442
Moisture to protein content ratio <	2.5:1	ISO 1442/ISO 937
Proteolysis index (PI)≥	20	<a href="#">Annex B</a>

### 4.5.3 Hygiene

The products should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21). Pathogenic bacterium and indicator of contamination limit shall comply with the requirements given in Table 3. The relevant ISO standards for microbiological analysis shall be used as reference methods, refer to ISO/TC 34/SC 9 work program. Other methods that provide equivalent sensitivity, reproducibility, and reliability can be employed if they have been appropriately validated according to ISO 16140-2.

Table 3 — Pathogenic bacterium/ indicator of contamination limit

Pathogenic bacterium /indicator of contamination	Sampling plan and limit			
	n	c	m	M
<i>Salmonella</i>	5	0	Not detected in 25 g	
<i>Listeria monocytogenes</i> <sup>a</sup>	5	0	Not detected in 25 g	
	5	0	100 CFU/g	-
<i>Escherichia coli</i> O157:H7	5	0	Not detected in 25 g	
<i>Escherichia coli</i>	5	2	10 CFU/g	100 CFU/g

NOTE Table note.

n = the number of collected samples of the same batch products.

c = maximum number of samples allowed to exceed m.

m = the acceptable limit value of pathogenic bacteria indicators.

M = the highest safety limit value of the pathogenic bacteria indicators.

<sup>a</sup> Different types of fermented meat products present different risks from *Listeria monocytogenes*, hence different microbiological criteria could apply. The foods category in which growth of *Listeria monocytogenes* will not occur or can occur shall comply with CAC/GL 61.

## 5 Sampling

The sampling of the fermented meat products shall use the method specified in Annex A and CAC/GL 50 General Guidelines on Sampling.

## 6 Labelling, packaging, transportation and storage

### 6.1 Labelling

At least the following information shall be marked on each package or on a label:

- 1) the name of the product, the ingredients of the product, the trade name or brand name, if any;
- 2) the name and address of the producer or packer;
- 3) the net weight for those products with hermetic packaging;
- 4) the producing date if required;
- 5) shelf life of the product;
- 6) the storage mode and instructions;
- 7) the batch or code number;
- 8) any other information (i.e. nutritional information, health mark, etc) requested by the purchaser.

### 6.2 Packaging

Packaging material in contact with fermented meat products shall be of food grade.

### 6.3 Transportation

The products shall be transported in suitable conditions according to the characteristics and hygiene requirements of fermented meat products, and if necessary, insulation, refrigeration and fresh-keeping facilities should be provided. The products shall be protected from exposure to sunlight and rain, and



not be transported with toxic, corrosive material or material with peculiar smell or that might have negative effect on the quality.

#### 6.4 Storage

Suitable storage and transportation conditions should be selected according to the characteristics and hygiene requirements of fermented meat products, and if necessary, insulation, refrigeration and fresh-keeping facilities should be provided.

The products should be stored in a hygienic and odor-free warehouse.

The products should not be stored with toxic, corrosive material or material with peculiar smell or that might volatilize.

Storage should be protected from direct sunlight, rain, significant changes in temperature, humidity and violent impact, and should also be prevented from being adverse effects.

Store products away from wall and ground. Put products in order, and leave a channel in the middle.

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