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ICS 67.120.30

DRAFT EAST AFRICAN STANDARD

Smoked fish, smoke -flavoured and smoke - dried fish — Specification

EAST AFRICAN COMMUNITY

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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.

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. 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 procedures of the Community.

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.

Smoked fish, smoke flavoured fish and smoke dried — Specification

1 Scope

This Draft East African Standard specifies requirements, methods of sampling and test for smoked fish, smoke flavoured fish and smoke dried fish intended for human consumption. The standard covers all fish species.

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. The opening statement should be considered during editing

AOAC 952.13, *Arsenic in food — Silver diethyldibocarbamate method*

AOAC 977.13*, Histamine in sea food — Fluorometric method*

AOAC 972.23, *Lead in fish — Atomic absorption spectrophotometric method*

AOAC 973.34, *Cadmium in food — Atomic absorption spectrophotometric method*

AOAC 983.20, *Mercury (methyl) in fish and shellfish— Gas chromatographic method*

CAC/GL 50-2004, *General guideline on sampling*

CAC/RCP 52 -2003, *Code of practice for fish and fishery products*

EAS 38, *Labelling of pre-packaged foods — Requirements*

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

EAS 803, *Nutrition labelling — Requirements*

EAS 805, *Use of nutrition and health claims — Requirements*

ISO 4833-1, *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony-count technique at 30 degrees C by the pour plate technique*

ISO 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*

ISO 6888 (all parts), *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species)*

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 21527-1*, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 1: Colony count technique in products with water activity greater than 0,95*

ISO/TS 21872 (all parts), *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of potentially enteropathogenic Vibrio spp.*

ISO/TS 17919*, Microbiology of the food chain -- Polymerase chain reaction (PCR) for the detection of food-borne pathogens -- Detection of botulinum type A, B, E and F neurotoxin-producing clostridia*

ISO 17993:2002, Water quality-Determination of 15 polycyclic aromatic hydrocarbons (PAH) in water by HPLC with fluorescence detection after liquid –liquid extraction

3 Terms and definitions

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

3.1
hot smoking
process at which fish is smoked at an appropriate combination of temperature and time sufficient to cause complete coagulation of protein in the fish flesh.

3.2
cold smoking
process of treating fish with a smoke using a time/temperature combination that will not cause significant coagulation of the proteins in the fish flesh but that will cause substantial reduction of the water activity

3.3
wholesome / sound

free from physiological deterioration or adulteration/contamination, that appreciably affects quality of the fish

3.4
smoked fish fillet
fish fillets that has been smoked

3.5
fillet
slice of fish flesh of irregular size and shape removed from the carcass by cuts made parallel to the backbone

3.6
smoke flavours
either smoke condensates or artificial smoke flavour blends prepared by mixing chemically defined substances in known amounts or any combination of both

3.7
smoke condensates
products obtained by controlled thermal degradation of wood in a limited supply of oxygen (pyrolysis), subsequent condensation of the resultant smoke vapours and fractionation of the resulting liquid products

3.8
smoke-flavoured fish
product prepared from fish that has been treated with smoke flavours, without undergoing a smoking process

3.9
smoke dried fish
product prepared from fish that has undergone a combined smoking and drying process and may include salting

3.10
smoked fish
fish that has undergone a hot or cold smoking process

4 Requirements

4.1 Raw material

4.1.1 Fish used shall be obtained or prepared from any fish species which is sound and wholesome, fresh, chilled or frozen and fit for human consumption.

4.1.2 Ingredients

Other ingredients used such as salt, seasoning and condiments, herbs and spices and smoke flavours shall be of food grade quality and comply with relevant standards.

4.1.3 Smoking materials

Wood or other plant material used for the generation of smoke or smoke-condensates shall not contain toxic substances either naturally contained in the material or through contamination, or after being treated with chemicals, paint or impregnating materials. In addition,wood or other plant material must be handled in a way to avoid contamination of food with *Polycyclic Aromatic Hydrocarbons (PAH)* from smoking and direct drying processes.

4.2 Finished product

4.2.1 Smoked fish and smoke - dried fish shall:-

a)have pleasant mild fresh smoked flavour
b) have no acrid, resinous or musty odours or flavours due to the use of unsuitable wood shavings during the smoking process.

4.2.2 Smoked fish, smoke –flavoured fish and smoke –dried fish shall:

a) be stored in a suitable storage condition
b) be free from foreign matter
c) be free from off flavour and objectionable odours
d) not exhibiting any sourness whatsoever and
e) be of desirable texture

4.3 Specific requirements

The smoke dried fish shall not exceed 10% moisture content tested as per the Annex A and the histamine content shall not exceed 100, mg/kg tested as per AOAC 977.13

5 Food additives

No additives are permitted in smoke-dried fish. However if food additive used in the smoked fish or smoke flavoured fish the maximum level of application should comply with the list under Table 1.

Table 1: List of food additives

Acidity Regulators		
INS Number	Additive Name	Maximum Level in Product
260	Acetic acid glacial	GMP
330	Citric acid	GMP
325	Sodium lactate	GMP
334	Tartaric acid	L[+] 200 mg/kg
270	Lactic acid	L-, D-, DL- GMP
326	Potassium lactate	GMP
327	Calcium lactate	GMP
Antioxidants		
301	Sodium ascorbate	GMP
316	Sodium erythorbate (sodium	GMP

	isoascorbate)	
325	Sodium lactate	GMP
Colours		
129	Allura Red AC	300 mg/kg
160b(i)	Annato extracts, bixin-based	10 mg/kg, as bixin
110	Sunset yellow FCF	100 mg/kg
102	Tartrazine	100 mg/kg
Packaging Gas		
290	Carbon dioxide	GMP
941	Nitrogen	GMP
Preservatives		
290	Carbon dioxide	GMP
941	Nitrogen	GMP
Preservatives (for reduced oxygen packaged products only)		
200-203	Sorbates	2000 mg/kg as sorbic acid
210-213	Benzoates	GMP

6 Hygiene

The product shall be prepared and handled in accordance with EAS 39 and CAC/RCP 52 and shall comply with microbiological limits given in Table 2.

Table 2— Microbiological limits for smoked fish, smoke –flavoured fish and smoke –dried fish

S/No.	Type of microorganism	Maximum limit	Method of test
1	*Salmonella* in 25 g	Absent	ISO 6579
2	*Escherichia coli*, MPN/g	10	ISO 7251
3	*Staphylococcus aureus*, CFU/g	10^3	ISO 6888
4	Total viable count, CFU/g	10^5	ISO 4833-1
5	Yeast and moulds, CFU/g	10^3	ISO 21527-1
6	*Vibrio spp,per 25g*	Absent	ISO/TS 21872
7	Clostridium botulinum[1]	Absent	ISO/TS 17919
	Note: [1]For canned product		

7 Contaminants

7.1 Heavy metals

The product shall comply with the heavy metal limits given in Table 3.

Table 3 — Heavy metal limits for smoked fish, smoke –flavoured fish and smoke –dried fish

S/No.	Parameter	Maximum limit, mg/kg	Test method
(i)	Arsenic	0.1	AOAC 952.13
(ii)	Lead	0.3	AOAC 972.23
(iii)	Cadmium	0.3	AOAC 973.34
(iv)	Methyl mercury	0.5	AOAC 983.20

7.2 Smoked fish and smoke-dried fish shall not contain more than 5ppb of Polycyclic aromatic Hydrocarbon especially Benzo (a) pyrene when tested as per ISO 17993:2002.

7.3 Pesticide residues

Smoked fish shall comply with those maximum pesticides residue limits established by the Codex Alimentarius Commission

8 Weights and measures

The fill and the weight of the product shall comply with Weights and Measures regulations of the importing Partner State.

9 Packaging

The product shall be packed in food grade containers which will safeguard the hygienic, nutritional, and organoleptic qualities of the product. They shall not impart any toxic substance or undesirable odour or flavour to the product.

10 Labelling

10.1 In addition to the requirements in EAS 38, the following specific labelling requirements shall apply and shall be legibly and indelibly marked:

a) The product shall be named as "Smoked fish/smoke –flavoured /smoke –dried fish" and the fish species fish
b) list of ingredients
c) Net weight in g or kg
d) Name, physical and postal address of the processor or packer
e) Country of origin
f) Production date
g) expiry date
h) Storage condition
i) Batch number
j) Instruction for use

10.2 Nutritional labelling, nutrition and health claims may be made in accordance with EAS 803 and EAS 805

10.3 Labelling of non-retail container

10.3.1 Information on the above provisions shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, and the name and address of the processor or packer as well as storage instructions, shall appear on the container.

10.3.2 However, lot identification, and the name and address of the processor or packer may be replaced by an identification mark provided that such a mark is clearly identifiable with the accompanying documents.

11 Sampling

Sampling shall be done in accordance with CAC/GL 50-2004.

Annex A
(normative)

Determination of moisture content

A.1 Principle

The sample is dried to constant weight in an oven.

A.2 Apparatus

A.2.1 Moisture dishes, made of nickel, stainless steel, aluminium or porcelain, with well-fitting lids

A.2.2 Oven

A.2.3 Desiccator

A.3 Procedure

Weigh accurately about 10 g of the sample in a suitable moisture dish, previously dried in an oven and weighed. Place the dish in an oven maintained at 105 °C ± 2 °C for five hours. Cool the dish in a desiccator and weigh with the lid on. Repeat the process of heating, cooling and weighing at half-hour intervals until the loss in mass between two successive weightings is less than 1 mL. Record the lowest mass obtained. Preserve the dish containing this dried material in a desiccator for the determination of total ash (see B.2.3).

A.4 Calculation

The moisture content shall be expressed as follows:

$$\text{Moisture, \% by mass} = \frac{m_1 - m_2}{m_1 - m} \times 100$$

where

m_1 is the mass, in grams, of the moisture dish with material before drying;

m_2 is the mass, in grams, of the moisture dish with the material after drying; and

m is the mass, in grams, of the empty moisture dish.