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Processing and handling of smoked fish and fish products — Code of practice

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.

DEAS 898 was prepared by Technical Committee EAS/TC 003, *Fish and fishery products*.

Processing and handling of smoked fish and fish products — Code of practice

1 Scope

This Draft East African standard provides guidelines for processing, handling and storing of smoked fish, smoke flavoured fish, smoke dried fish and fishery products intended for human consumption. This code of practice applies to 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.

EAS 35, *Fortified food grade salt — Specification*

EAS 832, *Fish industry — Operational cleanliness and hygiene — Guidelines*

EAS 876, *Smoked fish, smoke flavoured fish, smoke dried fish and fishery products — Specification*

3 Terms and definitions

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

3.1

hot smoking

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

3.2

cold smoking

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

3.3

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

3.4

smoke flavours

are either smoke condensates or artificial flavour blends prepared by mixing chemically defined substances in known amounts or any combination of both (smoke preparations)

3.5

smoked fish

fish that has undergone a hot or cold smoking process

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

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

4 Handling and processing

4.1 Raw materials

The fish used to prepare smoked fish, smoke flavoured fish, smoke dried fish and fishery products as stated under this standard should be from any fish species which is sound and wholesome, fresh, chilled or frozen and fit for human consumption. Whereas, the salt used should conform to EAS 35

4.2 Plant facilities and operating unit

Plant facilities and operating unit for processing of smoked fish, smoke flavoured fish, smoke dried fish and fishery products should be made of food grade material and easily cleanable.

The facilities shall be maintained in a state of hygiene that complies with EAS 832.

4.3 Wood or plant material

4.3.1 The wood or plant material for smoking should be dry enough and free from contaminants such as natural toxins, chemicals, paint.

4.3.2 Wood or plant material of types not suitable for smoke production should not be used.

4.3.3 Wood containing mould or fungus may impart off-flavours and odours and should not be used.

4.3.4 Wood or plant material for smoking should be stored in a dry and protected place.

4.3.5 Contamination during transportation and storage should be avoided.

4.4 Smoke condensate

4.4.1 Smoke condensate should come from a reputable reliable source and may need to be approved by the relevant competent authority.

4.4.2 Containers with smoke condensate should be stored in a dry and clean place.

4.4.3 Containers with smoke condensate should be adequately labelled with information such as the type of wood used, name and address of manufacturer and production date.

4.4.4 Smoke condensate should be packaged in food grade containers.

4.5 Slicing

4.5.1 The smoked fish and fishery products such as fillets, portions and steaks may be cold tempered (e.g. partially frozen to -5 °C to -12 °C) for a short time period to stabilise the fish flesh to facilitate mechanical slicing.

4.5.2 The slicing and related processes should be done on surfaces that are easy to clean and sanitize.

4.5.3 The flow of products should be maintained to avoid undue accumulation of products along the processing line.

4.5.4 The slicing devices should be well maintained for optimal slicing performance.

4.6 Hot smoking

4.6.1 Time and temperature of the smoking process should be monitored to achieve the desired colour, taste and texture, and to ensure control of microbiological and chemical contamination.

4.6.2 Use of continuous monitoring devices are recommended to ensure that time and temperature conditions are met. For instance for complete coagulation of proteins, hot smoking temperature should reach 65 °C in the thermal centre of the product.

4.6.3 To achieve the above the heated air and the smoke should be evenly distributed in the smoking chamber.

4.7 Cold smoking

4.7.1 The cold smoking process should ensure that the temperature of the products is kept below 30 °C to avoid coagulation of the proteins of the flesh of the fish.

4.7.2 Time and temperature of the cold smoking process should be monitored to achieve the desired colour, taste and texture.

4.7.3 Use of Continuous monitoring devices is recommended to ensure that desired time and temperature conditions are met and maintained.

4.7.4 Cold smoking should be carried out under microbiologically monitored hygienic conditions in a chamber and using equipment that is subjected to a detailed hygienic schedule.

4.7.5 The entire smoking process should be continued until moisture content and weight loss targets are reached.

4.8 Smoke flavours

4.8.1 Smoke flavours should not be used in an attempt to improve poor quality fish.

4.8.2 Smoke flavours should be applied according to the manufacturer's recommendations.

4.8.3 Smoke flavours should come from a reputable and reliable source which may need to be approved by the Competent Authority.

4.8.4 Smoke flavours that are diluted prior to application to the fish must be diluted with food grade materials and/or water of potable quality.

4.8.5 Controls should be in place to ensure that smoke flavour mixtures meet pre-determined specifications.

4.9 Cooling

4.9.1 Cooling should be done in a controlled environment to avoid cross contamination.

4.9.2 When smoking is finished the fish should be cooled rapidly and thoroughly to a temperature which minimises microbiological growth in relation to the determined shelf-life.

5 Packaging

5.1 Packaging material should be clean, sound, durable and sufficient for intended use and of food grade material.

5.2 In case of modified atmosphere packaging, the composition of the gas mixture should be checked regularly and ensure that barriers to growth of *Clostridium botulinum* such as freezing or refrigeration, combined with salting and drying should be used.

6 Labelling

6.1 The label should include the storage temperature, shelf life, other handling and storage conditions for safety and quality.

6.2 If water is added during smoke flavouring of fish (e.g. injection, dip), then the resulting water added product should be labelled according to the laws of the country of sale.

6.3 The unique characteristics of the smoke-flavoured products shall be clearly described on the label so as not to mislead the consumer.

7 Storage

7.1 Storage temperature should be monitored and recorded in to meet shelf-life requirements.

7.2 Products should be stored at appropriate temperature conditions to avoid growth of potential pathogenic and spoilage microorganisms. For example where Modified Atmospheric packaging is used, products should be kept in frozen conditions.

