



EAST AFRICAN STANDARD

Dried and dry-salted fish — Specification



EAST AFRICAN COMMUNITY

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. 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.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

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.

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Introduction

In the preparation of this East African Standard, the following sources were consulted extensively:

KS05-424:1986, *Specification for dried salted fish*

IS 14950:2001, *Fish — Dried and dry-salted — Specification*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/vetdrugs/jsp/vetd_q-e.jsp

USDA Foreign Agricultural Service website: <http://www.mrlidatabase.com>

USDA Agricultural Marketing Service website: <http://www.ams.usda.gov/AMSV1.0/Standards>

European Union: http://ec.europa.eu/enterprise/sectors/pharmaceuticals/veterinary-use/maximum-residue-limits/index_en.htm

Assistance derived from these sources is hereby acknowledged.

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Dried and dry-salted fish — Specification

1 Scope

This standard specifies the requirements and the methods of sampling and test for various types of dried and dry-salted fish.

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.

CAC/GL 21, *Principles for the establishment and application of microbiological criteria for foods*

CAC/RCP 1, *Recommended international code of practice — General principles of food hygiene*

CAC/GL 30, *Principles and guidelines for the conduct of microbiological risk assessment*

CAC/GL 31, *Guidelines for the sensory evaluation of fish and shellfish in laboratories*

CD-K-572:2010, *Fish and fisheries products — Methods of sampling*

CAC/RCP 52[CD/K/521:2010], *Code of practice for fish and fishery products*

CAC/GL 53, *Guidelines on the judgement of equivalence of sanitary measures associated with food inspection and certification systems*

EAS 12, *Drinking (potable water) — Specification*

EAS 35, *Edible salt — Specification*

EAS 38, *Labelling of prepackaged foods — Specification*

EAS 41, *Fruits, vegetables and derived products — Sampling and methods of test*

EAS 103, *Schedule for permitted food additives*

EAS 123, *Distilled water — Specification*

ISO 4831, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number technique*

ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony-count technique*

ISO 4833, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of microorganisms — Colony-count technique at 30 degrees C*

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

ISO 6887-1, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 1: General rules for the preparation of the initial suspension and decimal dilutions*

ISO 6887-2, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 2: Specific rules for the preparation of meat and meat products*

ISO 6887-3, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 3: Specific rules for the preparation of fish and fishery products*

ISO 6888-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium*

ISO 6888-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 2: Technique using rabbit plasma fibrinogen agar medium*

ISO 6888-3, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 3: Detection and MPN technique for low numbers*

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 7937, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of Clostridium perfringens — Colony-count technique*

ISO 13720, *Meat and meat products — Enumeration of Pseudomonas spp.*

ISO 16050, *Foodstuffs — Determination of aflatoxin B₁ and the total content of aflatoxin B₁, B₂, G₁ and G₂ in cereals, nuts and derived products — High performance liquid chromatographic method*

ISO 16654, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Escherichia coli O157*

ISO 21567, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Shigella spp.*

ISO/TS 21872-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of potentially enteropathogenic Vibrio spp. — Part 1: Detection of Vibrio parahaemolyticus and Vibrio cholerae*

ISO/TS 21872-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of potentially enteropathogenic Vibrio spp. — Part 2: Detection of species other than Vibrio parahaemolyticus and Vibrio cholerae*

3 Description and definitions

3.1 Description

Dried salted fish is the product obtained from fish which has been gutted, with or without-beheading, splitting or filleting, and subsequently washed, salted and dried. All parts of the fish shall have reached salt/water equilibrium prior to drying.

3.2 Process definition

3.2.1 The product, its skin and flesh shall have characteristics colour. The meat and stomach portion should be firm.

3.2.2 The material shall be free from visible fungal, insect or mite infestation.

3.2.3 Fish for salting and drying shall be subjected to one of the salting processes defined in 3.2.3.1 and one or both of the drying processes defined in 3.2.3.2. When the fish is split, a cut is made in a straight line close to one side of the backbone from the neck to the caudal fin.

3.2.3.1 Salting

- (a) **(Dry salting kench curing)** — Is the process of mixing fish with suitable food grade salt and stacking the fish in such a manner, that the excess of the resulting brine drains away.
- (b) **Wet salting (pickling)** — Is the process whereby fish is mixed with suitable food grade salt and stored in water-tight containers under the resultant brine (pickle) which forms by solution of salt in the water extracted from the fish tissue. The fish is subsequently removed from the container and stacked so that the brine drains away.

3.2.3.2 Drying

3.2.3.2.1 After curing, the fish shall be dried either in the sun or in artificial driers until a satisfactory produce is obtained.

3.2.3.2.2 The fish, while drying, shall be protected against contamination from dirt, sand, flies and insects.

3.3 Presentation

Dried salted fish shall be presented, with or without the black membrane (belly lining), scaled or unscaled, in one of the following ways:

3.3.1 Split Fish — Split and with approximately the anterior two-thirds of the backbone removed.

3.3.2 Split Fish with Entire Backbone — Split with the whole of the backbone intact.

3.3.3 Fillets — Split and divided longitudinally into two parts and with fins, fin bones, tail and the whole of the backbone removed.

3.3.4 Cuts — Split fish or fillets cut up transversely into fairly regular pieces.

3.3.5 Any other presentation of the product shall be permitted provided that it:

- (i) meets all other requirements of this standard, and
- (ii) is adequately described on the label to avoid confusing or misleading the consumer.

3.4 Variety of fish

For the purpose of this standard, particular variety of a fish or shell fish given in Annex A shall include all the important commercial species of that fish or shell fish.

3.5 Grades

Necessary grades designation for various types of fish may be assigned based on size and mass of a single piece of fish as given in Annex B. A tolerance of 10 percent by mass of the net mass of the next higher or lower grade or both grades put together in a pack shall be included.

4 Essential composition and quality factors

4.1 Raw product

Dried salted fish shall be prepared from sound fish of the designated species which are of a quality such as is fit to be sold fresh for human consumption.

4.2 Salt

Salt used to produce dried salted fish shall be clean and not previously used, free from foreign matter and foreign crystals, show no visible signs of contamination with dirt, oil, bilge or other extraneous materials.

The salt used shall comply with the requirements of EAS 35.

4.3 Final product

4.3.1 The flesh and the skin shall have the characteristic colour and shall not show any evidence of halophilic mould (dun) nor visible evidence of red, halophilic bacteria (pink).

4.3.2 The product shall have the characteristic dried salted fish odour. It shall be free from any off-odour indicative of spoilage.

4.3.3 The material shall be free from artificial colouring matter and firming agents except common salt. Food additives for fish and fisheries products permitted EAS 103 may be used.

4.3.4 The material shall meet the microbiological and heavy metal requirements as given in Table 1 and Table 2.

Table 1 — Microbiological limits for dried fish

S/No.	Type of microorganism	Maximum limit	Method of test
(i)	<i>Pseudomonas</i> species per gram	Absent	ISO 13720
(ii)	<i>Salmonella</i> in 30 g	Absent	ISO 6579
(iii)	<i>E. coli</i> per g	Absent	ISO 7251
(iv)	<i>Shigella</i> per g	Absent	ISO 21567
(v)	Coliforms g (per 100 g)	Absent	ISO 4832
(vi)	<i>Staphylococcus aureus</i> per 10 g	2×10^3 g	ISO 6888
(vii)	Total viable count	10^5 /g	ISO 4833
(viii)	<i>Vibrio cholerae</i>	Absent	ISO/TS 21872
(ix)	<i>Clostridium perfringens</i>	Absent	ISO 7937

Table 2 — Contaminant limits for dried fish

Type of contaminant		Maximum limit (mg/kg)	Method of test
(i)	Arsenic	0.1	EAS 41
(ii)	Copper	0.4	EAS 41
(iii)	Iron	5.0	EAS 41
(iv)	Tin		
	(a) For product packed in tin plate	50.00	EAS 41
	(b) For product packed in other packing containers	250.00	EAS 41
(v)	Mercury	0.5	EAS 41
(vi)	Lead	0.3	EAS 41
(vii)	Cadmium	0.3	EAS 41
(viii)	Methylmercury	0.5	EAS 41
(ix)	Zinc	50.0	EAS 41

4.3.5 Dry fish and dry-salted fish shall also conform to the requirements given in Table 3 and Table 4 respectively.

Table 3 — Physical requirements for dried salted fish and fish products

S/No.	Characteristic	Dry-salted mackerel	Dry-salted seer fish	Dry-salted leather jacket	Dry-salted Surai (Tuna)	Dry-salted shark	Dry-salted cat fish	Dry-salted threadfin (Dafa)	Dry-salted Jew fish (Ghol)	Dry-salted horse mackerel	Dry-salted Dhoma	Method of test
(i)	Moisture content, % by mass, max.	30.0	35.0	35.0	35.0	35.0	35.0	40.0	40.0	35.0	35.0	Annex D
(ii)	Sodium chloride, per cent by weight on moisture free basis, max.	25.0 – 30.0	25.0 – 30.0	25.0 – 30.0	25.0 – 30.0	25.0 – 30.0	25.0	25.0	25.0	25.0 – 30.0	10.0 – 15.0	Annex E
(iii)	Acid insoluble ash, per cent by weight on moisture free basis, max.	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	Annex F

Table 4 — Requirements for dried fish

S/No.	Characteristic	Dried Bombay duck	Laminated Bombay duck	Dried white baits	Dried prawns	Dried shark fins	Dried fish maws	Method of test
(i)	Moisture content, % by mass, max.	15.0	15.0	15.0	20.0	10.0	8.0	Annex D
(ii)	Sodium chloride, per cent by weight on moisture free basis, max.	7.5	6.0	2.5	5.0	—	—	Annex E
(iii)	Acid insoluble ash, per cent by weight on moisture free basis, max.	1.0	1.0	1.5	1.0	1.5	1.5	Annex F

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5 Hygiene

5.1 The product covered by the provisions of this standard shall be prepared and handled in accordance with CAC/RCP 1, CAC/RCP 52[CD/K/521:2010] and the relevant public health regulations.

5.2 The product shall be free from objectionable matter.

5.3 When tested by appropriate methods of examination, the product:

- (a) shall be free from micro-organisms in amounts which represent a hazard to health.
- (b) shall be free from parasites which represent a hazard to health, and
- (c) shall not contain any toxic substances originating from micro-organisms or due to the activity of micro-organisms, in amounts which represent a hazard to health.

5.4 The product shall be free from chemical contaminants in amounts which may represent a hazard to health.

6 Packaging

6.1 Any container for dried salted fish shall be clean and dry and shall protect the organoleptic and other quality characteristic of the product during storage and transport.

6.2 It shall not pass on to the product any foreign odour, flavour, colour or other foreign characteristics.

7 Marking

7.1 The containers shall be labelled in accordance with EAS 38 and shall include the following:

- a) Name and type of the material with brand name, if any;
- b) Name and address of the processor;
- c) Batch or code number;
- d) Date of packing;
- e) The words 'Best before (month and year)' to be indicated;
- f) Name of the additives used, if any;
- g) Storage conditions;
- h) Any other requirement as given OIML R87, *Quantity of product in prepackages*.

7.2 Certification marking

The product may also be marked with the relevant Standard Mark.

8 Sampling

The methods of drawing representative samples of the material for test and criteria for conformity shall be as prescribed in CD-K-572-2010.



Sun-dried low-salt



Sun-dried

Draft for

Standard



Sun-dried small fish



Sun-dried small fish

Draft



Dried-salted fish



Dried-salted fish (small)



Dried-salted fish



Pre-packaged dried-salted fish

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African Standard



Dried-salted fish (small) — Market



Dried-salted fish

Annex A
(informative)

Variety of fish with species

Variety	Species	Variety	Species
1. Mackerel	<i>Rastrelliger sp.</i>	Horse Mackerel	g) <i>Decapterus sp.</i>
2. Seer Fish	a) <i>Scomberomorus guttatus</i>	(Cont.)	h) <i>Elagatis sp.</i>
	b) <i>S. commerson</i>		j) <i>Gnathanoidon</i>
	c) <i>S. lineolatus</i>		k) <i>Megalaspis sp.</i>
	d) <i>S. kuhilli</i>		m) <i>Naucrates sp.</i>
	e) <i>S. interruptus</i>		n) <i>Scomberoides</i>
3. Leather Jackets	a) <i>Chlorinemus lysan</i>		p) <i>Selar sp.</i>
	b) <i>C. tala</i>		q) <i>Selaroides sp.</i>
	c) <i>C. tol</i>		r) <i>Seriola sp.</i>
	d) <i>S. sanctipetri</i>		s) <i>Trachinotus sp.</i>
4. Surai (Tuna)	<i>Thunnus sp.</i>		t) <i>Ura.spis sp.</i>
5. Shark	a) <i>Pristis sp.</i>	10. Dhoma (Croakers or Jew Fish)	a) <i>Johnieops sp.</i>
	b) <i>Galeocerdo sp.</i>		b) <i>Johnius sp.</i>
	c) <i>Sphyrna sp.</i>		c) <i>Nibeas sp.</i>
	d) <i>Carcharinus sp.</i>		d) <i>Otolithus sp.</i>
6. Catfish	a) <i>Arius sp.</i>		e) <i>Protonibeas sp.</i>
	b) <i>Batrachocephalus sp.</i>		f) <i>Sciaena sp.</i>
	c) <i>Osteogineosus sp.</i>	11. Bombay Duck	<i>Harpodon nehereus</i>
	d) <i>Plotosus sp.</i>	12. White Baits	<i>Stolephorus sp.</i>
7. Threadfin (Dara)	a) <i>Polynemus sp.</i>	13. Prawns	a) <i>Penaeus sp.</i>
	b) <i>Polydactylus indicus</i>		b) <i>Metapenaeus sp.</i>
8. Jew Fish (Ghol)	<i>Pseudosciaena diacanthus</i>		c) <i>Parapenaeopsis</i>
		14. Fish Maw	
9. Horse Mackerel	a) <i>Alectis sp</i>	a) Eel	<i>Miraemesox talbonoides</i>
	b) <i>Alepes sp.</i>	b) Jew Fish	<i>Pseudosciaena sp</i>
	c) <i>Atropus sp.</i>	c) Threadfin	<i>Polynemus indicus</i>
	d) <i>Carangoides sp.</i>	d) Giant Croaker	<i>Otolithoides brunneus</i>
	e) <i>Caram sp.</i>	e) Cat Fish	<i>Arius sp, Tachysures sp</i>
	f) <i>Citula sp.</i>	f) Bekti	<i>Lates sp, Psmoperca sp</i>
		g) Lizard fish	

Annex B
(informative)

Grades

B.1 Dry-salted mackerel

The material shall be of the following two grades:

Grade	Mass, g
Large	Above 50
Standard	50 and below

B.2 Dry-salted seer fish

The material shall be of the following two grades:

Grade	Length, cm¹⁾	
	With Head	Without Head
Small	Up to 45	Up to 37.5
Large	Above 45	Above 37.5

¹⁾ Total length in centimetres of a single salt cured seer fish.

NOTE In the case of 'large' grade it may be either dried whole or may be cut into convenient pieces transversely before curing.

B.3 Dry-salted leather jackets

The material shall be of the following two grades:

Grade	Mass, g	
	With Head	Without Head
Small	400 and above	Above 350
Large	Below 400	Below 350

B.4 Dry-salted tuna (tuna)

The material shall be of the following two grades:

Grade	Mass, g
Small	Up to 1000
Large	Above 1000

B.5 Dry-salted shark

The material shall be of three grades:

Grade	Mass, g
Large	Above 3000
Medium	3000 – 1000
Small	Below 1000

B.6 Dry-salted cat fish

The material shall be of the following two grades:

Grade	Mass, g	
	With Head	Without Head
Large	500 and above	400 and above
Standard	Below 500	Below 400

B.7 Dry-salted threadfin (dara)

The material shall be of the following two grades:

Grade	Mass, kg	
	With Head	Without Head
Extra Large	Above 4	Above 3.5
Large	3 to 4	2 to 3.5

B.8 Dry-salted ghol

The material shall be of two grades:

Grade	Mass, kg	
	With Head	Without Head
Extra Large	Above 3.5	Above 3
Large	2.5 to 3.5	2 to 3

B.9 Dry-salted horse mackerel

The material shall be of two grades:

Grade	Mass, kg	
	With Head	Without Head
Large	400 and above	350 and above
Standard	Below 400	Below 350

B.10 Dry-salted dhoma (croakers or Jewish Fish)

The material shall be of the following three grades:

Grade	Mass, g
Large	Above 150
Medium	100 to 150
Small	Below 100

B.11 Dry-salted Bombay duck

The material shall be of three grades based on size and mass:

Grade	Size, cm ¹⁾	Mass, kg ²⁾
Large	Above 20	Above 10
Medium	15 to 20	7.5 to 10
Small	Below 15	Below 7.5

¹⁾ Length in centimetres measured from the tip of the snout to the base of the caudal fin in the case of the dried fish.

²⁾ Mass of 1 000 individual fish in kilograms.

B.12 Laminated Bombay duck

The material shall be of three grades based on size and mass:

Grade	Size, cm ¹⁾	Mass, kg ²⁾
Large	15 and above	500 and above
Small	Less than 15	Less than 500

¹⁾ Length in centimetres of the laminated piece.

²⁾ Mass of 100 pieces in grams.

B.13 Dried white baits

The material shall be of two grades based on count:

Grade	Count ³⁾
Large	Below 200
Small	200 and above

³⁾ Count = Number of white baits per 1 000 g.

B.14 Dried prawns

The material shall be of the following four grades depending upon count:

Grade	Count ⁴⁾
Large	Below 50
Medium	50 to 250
Small	251 to 500
Tiny	Above 500

B.15 Dried shark fins

The material shall be of the following two types:

- a) White fins, and
- b) Black fins

Depending upon the size of the fins, the material shall be of the following grades:

- a) Dorsal, ventral and pectoral fins:

Grade	Size, cm ⁵⁾
A	Below 10
B	10 and below 20
C	20 and below 30
D	30 and above

⁵⁾ Length of a single dried shark fin in centimetres when measured from the tip to upper or anterior corner.

- b) Caudal (tail) fins:

Grade	Size, cm ⁵⁾
A	Below 20
B	20 and below 30
C	30 and below 40
D	40 and above

⁵⁾ Length of a single dried shark fin in centimetres when measured from the tip to upper or anterior corner.

B.16 Dried fish maws

The material shall be of the following three grades:

Grade 1 — Clear to slightly discoloured

Grade 2 — Moderately mottled

Grade 3 — Extensively discoloured

B.16.1 The material shall be of the size grades given in Table 5

Table 5 — Size grades

S/No.	Name of Species	Grades	Count/kg
(1)	(2)	(3)	(4)
i)	Eel	a)	15 and below
		b)	16 to 30
		c)	31 to 45
		d)	Above 45
		e)	Broken
ii)	Jew	a)	12 and below
		b)	13 to 25
		c)	Above 25
		d)	Broken
iii)	Threadfin	a)	7 and below
		b)	8 to 15
		c)	16 and above
		d)	Broken
iv)	Giant croaker	a)	7 and below
		b)	8 to 15
		c)	16 and above
		d)	Broken
v)	Cat fish	a)	40 and below
		b)	41 to 100
		c)	101 and above
		d)	Broken
vi)	Bekti	a)	12 and below
		b)	13 and above
		c)	Broken
vii)	Lizard fish	a)	15 and below
		b)	16 and above
		c)	Broken

Annex C
(informative)

Preparation

C.1 Dry-salted fish

In the preparation of dry-salted fish (mackerel, leather jacket, seer fish, tuna, shark, cat fish, threadfin, jew fish, horse mackerel and dhoma) the fresh fish is split open by a cut from dorsal side along the vertebral column and the entrails and gills are removed. The knife is passed deep along the vertebral column and the fish is flattened out. Scores are made on the thick fleshy parts by passing the knife lengthwise. After washing the fish, salt shall be smeared in proportion of not less than 1:4 by mass on the cut surface of the fish and the fish is kept under cure for not less than 24 h. Salt used for curing shall conform to EAS 35. The salted fish is washed slightly to remove excess of undissolved salt and dirt. The fish is dried in sun spread over drying racks for a period of 10 to 18 h over two to three days. During drying, the fish is turned upside down occasionally to facilitate quicker and even drying. The fish while drying shall be protected against contamination from dirt, sand, flies and insects. In the case of large size fish, it may be cut longitudinally into pieces of suitable size.

C.2 Dried Bombay duck

In the preparation of dried duck, the fresh fish as soon as it is landed is washed with clean water all adhering and hung in pairs on ropes between vertical poles, the jaws being used for locking in pairs. The fish is dried in the sun. It may also be dried in artificial driers.

C.3 Laminated Bombay duck

In the preparation of laminated Bombay duck, the fresh fish is thoroughly washed in clean water. The guts are removed and then washed well again. The gutted fish are suspended from a scaffold for surface drying for about 2h. At this stage, remove the head, tail and fins using a sharp knife or scissors and split longitudinally along the belly portion. Bones can be removed if required. Dip the fish thus laminated in sufficient quantity of 1 percent brine (prepared from refined salt) for 20 min. Drain the fish and spread on drying racks to a moisture level of 16-17 percent. Flatten the product by means of a roller press. Trim the sides to get pieces of uniform size. Dry the product again for 1-2 h so that the final moisture content is about 15 percent. It is always advantageous to use a tunnel drier for drying the product to improve the quality of the finished product.

C.4 Dried white baits

In the preparation of dried white baits, the fish shall be cleaned thoroughly with potable water and dried either in the sun on clean raised platforms or drying racks or in artificial driers.

C.5 Dried prawns

In the preparation of dried prawns, the material shall be prepared from fresh prawns characteristic in colour and shall be free from black discoloration. The material shall be of the following four types:

- a) Boiled, peeled and dried prawns;
- b) Boiled, dried and deshelled prawns;
- c) Peeled, boiled and dried prawns; and
- d) Dried uncooked prawns shell-on.

Cooked material shall be prepared by cooking the whole prawns/peeled prawns in brine. It is then dried. Alternatively, it shall also be prepared by peeling, cooking and then drying. Dried, uncooked, shell-on prawns are prepared by simple drying.

The strength of the brine shall be such that it shall not impart too much saltiness to the material. The salt used shall conform to IS 594. The cooking time shall be such that the shells get loosened from the meat and the material acquires a firm texture. The material shall be dried either in the sun or in artificial driers under hygienic conditions.

The limits for the presence of shell material in the cooked types and grades of the material shall be as follows:

- | | |
|--------------------|---|
| a) Peeled, boiled: | Absent for all grades and dried prawns |
| b) Boiled, peeled: | Not more than 0.5 percent and dried prawns by mass |
| c) Boiled, dried: | Large and medium and deshelled prawns grades — below 1.0 percent. Small and tiny grades below 5.0 percent by mass |

The limits for broken pieces of meat in the material shall be as follows:

- | | |
|---|--|
| a) Peeled, boiled and dried prawns | Not more than 1.0 percent by mass for all grades |
| b) Boiled, peeled and dried prawns | |
| c) Boiled, dried and deshelled prawns | Large and medium grades — below 3.0 percent, small and tiny grades below 5.0 percent by mass |
| d) Dried, uncooked prawns with shell-on | |

C.6 Dried shark fins

In the case of dried shark fins, the dorsal, ventral and pectoral or caudal fins of edible sharks shall be used for the preparation of the product. The material shall be prepared from fresh sharks. The fins may be cut as soon as the sharks are landed. While cutting, avoid as much flesh as possible. Any flesh attached to the cut fins should be removed. The fin shall be washed with clean water. The fins may be dusted with salt in the ratio 1:10 (salt:fins). The cut portions may be dusted with salt and a little lime and treated fins should be kept for 24 h. The fins should again be washed with clean water and dried in the sun preferably by hanging on poles or ropes or by spreading on mats or by artificial driers till the moisture is reduced to 10 percent. The material shall not have salt or lime excretion on the surface.

C.7 Fish maws

Fish maws is prepared from the air bladder of fishes, such as cat fish, jew fish, eel and Indian salmon. The air bladder after removal shall be washed thoroughly in clean water and shall be free from stains, blood vessels, shreds, blood spots, etc. The material shall be dried in the sun by spreading on drying racks¹ platforms or by artificial driers till a satisfactory product is obtained. Fish maws shall be in split, chunk or any other form as agreed to between the purchaser and the vendor. The material shall be well-dried not sticking to each other.

Annex D
(normative)**Determination of moisture content****D.1 Principle**

The determination should be carried out in duplicate and a reagent blank should be carried out.

D.2 Preparation of the sample

Cut the large portions of fish into small pieces and mix. Comminute the pieces as finely as possible to obtain a homogenous sample, care being taken that no moisture is lost during the process. Keep the product in an air-tight container in order to prevent changes in moisture content during subsequent handling. Use this product for testing.

D.3 Procedure

D.3.1 Place a steel dish containing about 20 g of acid washed sand and a glass rod in an air oven and dry to constant weight at 103 ± 2 °C (1 hour should be sufficient). Cool in a desiccator for 30 minutes and weigh the dish with sand and glass rod (4-place balance).

D.3.2 Add about 5 g of the sample and reweigh.

D.3.3 Add about 5 cm³ of industrial ethanol and stir with the glass rod to give a homogenous paste.

D.3.4 Place on a water bath (temperature 60 °C to 80 °C) and stir occasionally until all the ethanol has evaporated.

D.3.5 Place the dish and content (including the glass rod) in an air oven and dry to constant weight at 103 ± 2 °C. Cool in a desiccator for 30 minutes and weigh. Retain the product for the determination of sodium chloride (see **E.2.1**) and acid insoluble ash (see **F.2.1**).

D.3.6 Calculation

$$\text{Moisture, per cent by mass} = \frac{M_2 \times 100}{M_1}$$

where,

M_2 = loss of mass, in g, of the sample, and

M_1 = mass, in g, of the sample taken.

Annex E
(normative)

Determination of sodium chloride

E.1 Reagents

E.1.1 Standard Silver Solution — 0.1 N, standardized against 0.1 N sodium chloride solution.

E.1.2 Dilute Nitric Acid — 1:4.

E.1.3 Ferric Ammonium Indicator Solution — A saturated solution of ferric alum $\text{Fe}(\text{NH}_4)(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$.

E.1.4 Standard potassium thiocyanate solution — 0.1N

E.2 Procedure

E.2.1 Take 0.3 g to 0.5 g of the dried products (see D.3.5) in a 250-ml Erlenmeyer flask. Add a known volume of the standard silver nitrate solution in quantity more than sufficient to precipitate all the chloride as silver chloride and then add 20 ml of dilute nitric acid. Boil on a hot plate or sand bath until the solids, except silver chloride, dissolve. Cool and add 50 ml of water and 5 ml of the ferric ammonium indicator solution and titrate against the standard potassium thiocyanate solution until a permanent light brown colour appears.

E.3 Calculation

E.3.1 Sodium chloride, per cent by weight

$$= 5.85 \frac{(V_1 N_1 - V_2 N_2)}{W}$$

where,

V_1 = volume of the standard silver nitrate solution;

V_2 = volume of the standard potassium thiocyanate;

N_1 = normality of the standard silver nitrate solution;

N_2 = normality of the standard potassium thiocyanate; and

W = weight, in g, of the dried product taken for the test.

Annex F
(normative)**Determination of acid insoluble ash****F.1 Reagent****F.1.1 Dilute Hydrochloric Acid** — 1:1, prepared from concentrated hydrochloric acid.**F.2 Procedure****F.2.1** Weigh accurately about 2 g of the dried material (see D.3.5) in a tared porcelain, silica or platinum dish. Ignite with a meker burner for about 1 hour. Complete the ignition by keeping in a muffle furnace at 500 °C to 570 °C until grey ash results.

Cool and filter through whatman filter paper No. 42 or its equivalent. Wash the residue with hot water until the washings are free from chlorides as tested with silver nitrate solution and return the filter paper and residue to the dish. Keep it in an electric air oven maintained at 135 ± 2 °C for about 3 hrs. Ignite the dish again for about 30 minutes, cool and weigh. Repeat this process till the difference between two successive weighings is less than 1 mg. Note the lowest weight.

F.3 CALCULATION**F.3.1** Acid insoluble ash, per cent by weight

$$= \frac{100(M_2 - M)}{M_1 - M}$$

where,

- M_2 = the lowest weight, in g, of the dish with the acid insoluble ash;
 M = weight, in g, of the empty dish; and
 M_1 = weight, in g, of the dish with the dried product taken for the test.

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