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Traceability of crustacean products — Specifications on the information to be recorded in farmed crustacean distribution chains

Traçabilité des produits crustacés — Spécifications relatives aux informations à enregistrer dans les chaines de distribution de crustacés d'élevage

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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).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 234, *Fisheries and aquaculture*.

Introduction

There are increasing demands for detailed information on the nature and origin of food products. Traceability is becoming a legal and commercial necessity.

The ISO definition of traceability concerns the ability to trace the history, application and location of that which is under consideration, and for products, this can include the origin of food materials and non-food parts thereof, the processing history and the distribution and location of the product after delivery. Traceability includes not only the principal requirement to be able to physically trace products through the distribution chain, from origin to destination and vice versa, but also to be able to provide information on what they are made of and what has happened to them. These further aspects of traceability are important in relation to food safety, quality, and labelling.

The scheme specified in this International Standard does not demand perfect traceability, i.e. that a particular retail product is to be traceable back to a hatchery and or farm and batch of origin. Pragmatically, it is recognized that mixing of animals or materials is often commercially necessary at a number of stages in the distribution chains, e.g. in grading at first sale and in the processing of raw materials into products. As a result, there will be occasions where whole chain traceability of materials and products is neither possible nor commercially practical. These limitations are recommended to be recognized and taken into consideration when auditing against this International Standard and ought not to preclude compliance so as to disadvantage otherwise compliant operators. Where such mixing necessarily occurs, the food business has to generate a trade unit or units only from the point that identification of units is possible. The requirement for traceability is that the business records the IDs of created or received trade units that may be input into each subsequently created unit thereafter, and vice versa. The particular product or products are then traceable through the supply chain (as far as is practical) to generate information on the maximum number of stages of the chain as possible.

Given the variety of crustacean products and of their distribution chains that operate within and between different countries, and varying legal requirements, the information specifications cannot itemize all the information that can possibly be required in every situation. This International Standard provides a generic basis for traceability. Flexibility is allowed for businesses to record further information, in their own non-standardized files, but keyed to the same unit IDs.

The information remains the ownership of the food business that generated it, but is available when required by law for the purposes of traceability (in the event of a food safety problem) or by commercial agreement between businesses. The structure, names and content of the information is standardized so that it can be readily communicated from business to business through the distribution chains, ensuring common understanding of terms and meanings.

Commercial arrangements for businesses to communicate information through the distribution chains are to be encouraged, particularly for the information desired by the trade to be visible at the various transaction points in the chains, but that is not the subject of this International Standard.

Though this International Standard is designed with electronic representation and communication of data in mind, the specifications may be met by paper systems.

Traceability of crustacean products — Specifications on the information to be recorded in farmed crustacean distribution chains

1 Scope

This International Standard specifies the information to be recorded in farmed crustacean supply chains in order to establish the traceability of products originating from farm raised crustaceans. It specifies how farmed crustacean products traded are to be identified and the information to be generated and held on those products by each of the food businesses that physically trade them through the distribution chains. It is specific to the distribution for human consumption of crustacean and their products, from farm through to retailers or caterers.

The types of business identified in this International Standard for farmed crustacean distribution chains are the following:

a) farming

   1) broodstock collection
   2) hatcheries and nurseries
   3) crustacean farm
   4) harvesting;

b) processors;

c) traders and wholesalers;

d) retailers and caterers;

e) logistics including materials brought from other domains;

f) feed production.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8601, *Data elements and interchange formats — Information interchange — Representation of dates and times*

3 Terms and definitions

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

3.1
traceability
ability to trace the history, application or location of that which is under consideration

Note 1 to entry: When considering product, traceability can relate to

— the origin of materials and parts,

— the processing history, and

— the distribution and location of the product after delivery.

[SOURCE: ISO 9000:2005, definition 3.5.4, modified]

3.2
Unique Logistic Unit Identifier
ULUI
any composition established for transport and/or storage that needs to be identified and managed through the supply chain

3.3
Unique Trade Unit Identifier
UTUI
smallest unit, which is guaranteed to retain its integrity as it moves from one link of the chain to the next

Note 1 to entry: It is the smallest unit that is kept whole and undivided with no change in content or label/identification.

3.4
crustacean
aquatic animal belonging to the phylum Arthropoda

Note 1 to entry: Arthropoda is a major group of invertebrate organisms characterized by their chitinous exoskeleton and jointed appendages, occurring in marine and freshwaters and on land.

3.5
crustacean product
product prepared out of crustaceans or parts thereof

4 Abbreviated terms

In this International Standard, the following abbreviations apply:

ACC	Aquaculture Certification Council
CAC	Codex Alimentarius Commission
EPC	Electronic Product Code, a unique number provided by GS1 used to identify instances of trade items (individual trade units) particularly suited for representation in an RFID chip
FAO	The Food and Agriculture Organization of the United Nations
FBO	Food Business Operator, generic term for someone in the supply chain who processes, sends or receives relevant trade units or logistic units
GAqP	Good Aquaculture Practices
GLN	Global Location Number, a 13 digit globally unique number provided by GS1 used to identify parties and physical locations
GMO	Genetically Modified Organism
GMP	Good Manufacturing Practice
GS1	Global non-profit organization dedicated to the design and implementation of global standards and solutions to improve the efficiency and visibility of supply and demand chains globally and across sectors. Previously EAN/UCC

GTIN	Global Trade Item Number, an 8 to 14 digit globally unique number provided by GS1 used to identify types of trade items (product types)
HACCP	Hazard Analysis Critical Control Points
HS	Harmonized Commodity Description and Coding System
LAT	Latin name
LU	Logistic Unit
OIE	World Organization for Animal Health
RFID	Radio-Frequency Identification, the use of an object (typically referred to as an RFID tag) applied to or incorporated into a product for the purpose of identification and tracking using radio waves
RFMO	Regional Fisheries Management Organization
SGTIN	Serialized Global Trade Item Number, a unique number provided by GS1 used to identify instances of trade items (individual trade units) by extending the GTIN
SSCC	Serial Shipping Container Code, an 18 digit globally unique number provided by GS1 used to identify logistics units
TSN	Taxonomic Serial Number
TU	Trade Unit
UI	Unique Identifier
ULUI	Unique Logistic Unit Identifier
UTUI	Unique Trade Unit Identifier

5 Principle

The fundamental principle of chain traceability is that trade units (TU) shall be identified by unique codes (UI). This code may be globally unique in itself (for instance, the GS1 SGTIN or EPC numbers) or it could be unique in that particular scope only, which means that it should be no other TUs in that part of the chain that may have the same number. If the scope (the product type, the company, the chain, the sector, the country, or similar) is assigned globally unique number, the combination of the globally unique scope number and the locally unique TU number shall constitute a globally unique identifier for the TU.

NOTE 1 The UTUI term is introduced to indicate a TU identifier which is -, or may be made globally unique.

Trade Units (TUs) may be grouped together to make Logistic Units (LUs) or LUs may be grouped together to make higher level LUs. A fundamental principle of chain traceability is that logistic units shall be identified by a unique code. This code shall be a national code which may be globally unique in itself (similar to the GS1 SSCC code) or it could be unique in that particular scope only, which means that there should be no other LUs in that part of the chain that may have the same number. If the scope (the product type, the company, the chain, the sector, the country) is assigned a globally unique number, the combination of the globally unique scope number and the locally unique LU number shall constitute a globally unique identifier for the LU.

NOTE 2 The ULUI term is introduced to indicate an LU identifier which is -, or may be made globally unique.

The key to the operation of this traceability scheme is the labelling of each unit of goods traded, whether of raw materials or finished products, with a unique ID. This shall be done by the food business that

creates each unit. Businesses that transform units, such as processors who convert the units of raw materials received into the products dispatched, shall create new units and shall give them new IDs.

As indicated above, the simplest way of implementing UTUIs and ULUIs is to use the GS1 SGTIN/EPC and SSCC codes. This practice is recommended, but is not mandatory. The central principle behind this International Standard is that businesses which create TUs or LUs should assign unique numbers to them.

Each of the food businesses that create or physically trade in those units, throughout the distribution chains from harvester through to retailer or caterer, shall generate and hold the information necessary for traceability. The information is to be held on paper or electronically, keyed to the unit IDs.

6 Requirements

6.1 Identification of the units traded

Businesses that bring in supplies of farmed crustacean products from outside of the domain of the specifications and trade them onwards shall identify each unit traded and record associated information elements as indicated in Table 3 to Table 12.

6.2 Recording of information

To distinguish between the different categories of information, all information elements are classified as either “shall”, “should” or “may”, with definition, see Table 1.

Table 1 — Classification of informative elements

Category	Definition	Explanation
“shall”	This category contains recordings related to identifiers and transformations that are necessary in order to trace the history, application or location of an entity. This means the unique identity of trade and logistic units, as well as the dependencies between the identifiers of inputs and outputs in a process.	“shall” elements are data elements that are deemed necessary to record to ensure that traceability is possible. Data elements relating to product properties are not in this category, even if these properties are essential for other purposes like product documentation or food safety.
“should”	This category contains parameters that describe and provide supporting information on the units being traced. Common parameters required by law, commercial requirements or good manufacturing practices are recorded, but only where an established international format or data list for the value exists.	This includes parameters like “species”, “production date”, etc. If certification according to this International Standard is to happen in the future, the “should” parameters are to be considered.
“may”	This category contains parameters that describe and provide supporting information on the units being traced. It contains parameters that are not part of the “should” category, but that may still be useful or relevant to record. It also contains parameters that may be deemed important, but where no established international format or data list exists.	The “may” category is informative only, and it is included to enable use and uptake of the standard. If certification according to this International Standard is to happen in the future, the recording of “may” parameters are not to be considered when evaluating adherence. The list of “may” elements is not definitive or exclusive, it is by design extendible, and the threshold for including new elements in this category is low.

Businesses that physically trade in crustacean products shall generate and hold the required information, appropriate to the type of business, for each of the units traded. The detailed information requirements are tabulated in Table 2.

Table 2 — Information requirements to be recorded by the different businesses

Food Business Operator (FBO) type	Table	Data prefix[a]	Receive	Transform	Create/ Produce	Dispatch
Broodstock collectors/suppliers	3	CBR	—	—	TU / LU	TU / LU
Hatcheries/Nurseries	4	CHA	TU / LU	Yes	TU / LU	TU / LU
Crustacean farms	5	CFF	TU / LU	Yes	TU / LU	TU / LU
Processors	6	CPR	TU / LU	Yes	TU / LU	TU / LU
Live crustacean transporters	7.1	CTR	TU / LU	Yes	TU / LU	TU / LU
Transporters and cold store operators for crustaceans other than live	7.2	CTS	TU / LU	No	LU	TU / LU
Traders and wholesalers	8	CTW	TU / LU	No	TU / LU	TU / LU
Retailers and caterers	9	CRC	TU / LU	Yes	TU / LU	–
Bringing in materials from outside the domain	10	COT	TU / LU	—	TU / LU	TU / LU
Crustacean feed producers	11	CFE	TU / LU	Yes	TU / LU	TU / LU

[a] For the purpose of unique identification to establish an extendable framework for data element identification, each table has been identified with a three letter alphanumeric code. This code plus three digits is used to give a unique number to each data element.

The information specifications separately tabulate the information to be recorded by each of these types of business. Some businesses may carry out the functions of more than one of the types listed, for example, distribution businesses can act as wholesalers and as transporters, in which case, those businesses shall record the relevant information requirements for each of the functions carried out.

NOTE 1 This International Standard is limited in scope to the distribution for human consumption of crustacean and their products. The crustacean information specifications are substantially the same from processing onward.

Pragmatically, it is recognized that some supplies of crustacean products and supplies of ingredients, etc., will come from outside of the domain and can lack the required IDs and information records. To accommodate this, a business that brings in crustacean and materials from outside of the domain is required to generate and hold the key information necessary for the traceability of the units brought in, and if they are to be traded on, to label those units with the required IDs.

NOTE 2 These specifications are designed with electronic representation and communication of data in mind, but this is not a requirement when using the International Standard. The specifications may also be met by paper systems.

Note that the specification is for data to be generated, recorded and stored at the respective link. For all links except broodstock, relevant data shall be generated in a previous link in the supply chain and passed along with the trade unit/logistic unit.

NOTE 3 In these tabulations, there is no repetition of the information originally recorded to describe the units created and their history, although businesses receiving those units later in the distribution chain will often need some of that information. The information is keyed to the unit IDs and can be supplied by commercial agreement between the businesses without having to re-input the data.

6.3 Broodstock collectors/suppliers

For the purposes of this International Standard, *broodstock suppliers* are considered to be

— establishments,

— individuals of similar interest forming a group,

— farmer groups, and

— fishermen.

The broodstock suppliers produce or collect broodstocks that are supplied to hatcheries for further maturation and production of larvae. They may carry out basic operations like collection and maintenance of broodstock under good management practices, in a sustainable way.

Prior to dispatch, broodstock suppliers may carry out their own operations or get it done through approved agencies/laboratories for absence of OIE listed diseases, quality, grading etc.

The trade units created by broodstock suppliers can range from a few hundred to several thousand passed into the hands of the next food business i.e. hatcheries.

Table 3 — Detailed information for broodstock — collectors/suppliers

Data element		Description	Examples	Categorization		
				Shall	Should	May
BROODSTOCK SUPPLIERS						
CBR101	Food business ID	Unique national identification number for the broodstock supplier plus country prefix or name and address of the group/ business that operates maintenance of broodstock (either indigenous or exported)	Name, reg. no and country prefix	x		
CBR102	Broodstock supplier establishment ID	Unique national identification number for the group/unit/ organization plus country prefix or name and address of the broodstock supplier	Women Self Help Group, Padanna, Kasargod, Kerala (PL suppliers)	x		
CBR103	Broodstock supplier GAP certification	Any Quality Certification Available	Norms suggested by National Competent Authority and aligned to Codex GAP			x
CBR150-	(unassigned)	Further information elements that describe the breeder, linked to broodstock supplier ID	Certified Wild Broodstock bank			x
FOR EACH TRADE UNIT CREATED						
Identity						
CBR201	Unit ID	UTUI	ID can be created for a batch with national prefix depending up on the area and time of collection	x		
Description						
CBR202	Species	LAT- followed by Latin name, or FAO- followed by FAO 3alpha code, or TSN-followed by Taxonomic Serial Number (may be repeated if several species)	LAT-Fenneropenaeus indicus FAO-PNI TSN:551579		x	
CBR203	Area/country of origin	FAO area/RFMO area of the broodstock if captured from wild or country of origin for brood stock from farmed stock, or more specific location	51/57	x		
NOTE In case of broodstock collectors from wild, this requirement will be scored in the may column.						

Table 3 *(continued)*

Data element		Description	Examples	Categorization		
				Shall	Should	May
CBR204	Health quality checks	Type of checks and measured results physical and microbiological or indication if records are available in electronic form, on paper, or not available	OIE listed diseases e.g. White spot virus			x
CBR205	GMO	Use of GMO in production or in feeding of broodstock Yes/No	No			x
Production history						
CBR206	Farm unit ID	ID no. of broodstock producer	M/s.xyz hatchery followed by unique national identification number	x		
CBR207	Broodstock maintainance record	Record showing water temperature, salinity, prophylaxis, water flow and other water quality parameters of broodstock maintenance to be kept by broodstock supplier	Temperature 26 °C salinity 22 ppt, water quality for aquaculture as per IS, ECO - PRO, 20 ppm (mg/kg) formalin, OXY–MORE			x
CBR208	Feeding record	Pelleted feed as per growth requirement	B543345, Avanthi feeds limited, India			x
Additional data						
CBR250-	(unassigned)	Further information elements that describe the created trade unit, linked to UTUI				x
FOR EACH LOGISTIC UNIT CREATED						
Identities						
CBR301	Unit ID	ULUI	Unique national identification number or GS1 number for the logistic unit	x		
CBR302	Trade unit IDs	The IDs of the trade units within the logistic unit	Unique national identification number or GS1 number for the trade unit	x		
Additional data						
CBR350-	(unassigned)	Further information elements that describe the created logistic unit, linked to ULUI				x
FOR EACH UNIT DISPATCHED (either as a logistic unit or a separate trade unit)						
Identity						
CBR401	Unit ID	ULUI (if dispatched as a logistic unit) or UTUI (if dispatched as a separate trade unit)	400653005555555558	x		
Destination						
NOTE In case of broodstock collectors from wild, this requirement will be scored in the may column.						