

ISO 12877:2011

**Traceability of finfish products —
Specification on the information to be
recorded in farmed finfish distribution chains**

**From data interoperability to data spaces in the
aquaculture domain – Workshop 28/02/23**

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About Nofima

Nofima is a private, non-profit research institute owned by the Norwegian government with head office in Tromsø and over 390 employees in six different locations around Norway.

Nofima was founded in 2008 when four former public food research institutes merged:

- Norconserv – canned and preserved foods, Stavanger
- Matforsk – food from agriculture, Ås
- Akvaforsk – aquaculture related research, Sunndalsøra
- Fiskeriforskning – seafood and processing, Tromsø

Main areas of work:

- Aquaculture and fisheries – raw materials
- Food from agriculture and aquaculture – processes and products
- Consumer and market research, which includes:
 - Consumer research, buying behaviour, food and context
 - Innovation and product development
 - Traceability, sustainability, environmental accounting

Turnover in 2020 was around 65 Million Euros



Background - TraceFish standards

- CEN Workshop Agreement - CWA 14659 (2003) Traceability of fishery products — Specification of the information to be recorded in farmed fish distribution chains
- CEN Workshop Agreement - CWA 14660 (2003) Traceability of fishery products — Specification of the information to be recorded in captured fish distribution chains
- Developed in EU-project "TraceFish" 2000-2003
- Involvement and feedback from more than 100 stakeholders
- Translated into JA, NO, SP, VI
- Became CWA for 3 years, renewed as CWA for another 3 years (2007-2010)

ISO standards

- ISO standards are not legal requirements (unless a country decides this)
- ISO standards are voluntary industry standards
- Buyers of fish products may give preference to suppliers who implement the standards
- Certification may happen on these standards
- Buyers of fish products may require their suppliers to be certified according to these standards

ISO TC234/WG1 participants

- Belgium
- Canada
- Denmark
- Finland
- France
- Iceland
- India
- Italy
- Korea
- Malaysia
- Mauritius
- New Zealand
- Norway
- Pakistan
- South Africa
- Spain
- Thailand
- UK
- USA
- Vietnam

Unique identification 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 there should be no other TUs in that part of the chain that may have the same number.

The "Shall" category

This category contains recordings related to identifiers and transformations that is 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.

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.

The "Should" category

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", "ID of food business", "production date", etc. Part of certification.

The "May" category

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, that may still be useful or relevant to record. It also contains parameters that are 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.
Not part of certification.**

Table 4 — Detailed information requirements for fish farms

Data element	Description	Examples	Categorisation			
			Shall	Should	May	
FISH FARMS						
FFF101	Food business ID	Unique national identification number for the organization plus country prefix as well as name and address of the food business that operates fish farm establishment	Fjord Harvest Ltd 67345 Bergen Norway		x	
FFF102	Fish farm establishment ID	Unique national identification number for the organization plus country prefix as well as name and address or <u>GLN</u> of fish farm establishment	Fjord Harvest Ocean site 2 67345 Bergen Norway NTFS0003 NO		x	
FFF103	Fish farm GMP certification	Names of fish quality or food safety GMP schemes by which fish farm is certified	<u>Debia</u>			x
FFF150-	(unassigned)	Further information elements that describe the organization, linked to fish farm establishment ID				x
FOR EACH UNIT RECEIVED						
Identities						
FFF201	Unit ID	ULUI (if received as a logistic unit) or UTUI (if received as a separate trade unit)	(00) 10065300555555558 978817525.0766.000010272	x		
FFF202	Trade unit IDs	If received as a logistic unit, the IDs of the trade units within the logistic unit.	978817525.0766.000010123 978817525.0766.000010131 978817525.0766.000010272	x		



FOR EACH UNIT RECEIVED**Control checks** (either on logistic or separate trade units)

FFF205	Temperature check	Temperature °C i.e. in received unit	4,0 °C		x	
FFF206	Temperature record	If recording device is affixed to batch, temperature/time record from creation of unit onward.	(°C) / date and time points in ISO8601 format			x
FFF207	Quality control checks	Type of checks + measured results or indication if records are available in electronic form, on paper or not available	Paper			x

Transformation Information

FFF208	Related created trade unit IDs	List of ID's of created trade units that may incorporate part of this received trade unit.	978817525.0766.000010123 978817525.0766.000010131 978817525.0766.000010272	x		
FFF209	Fractions	Fraction (%)s, kilos) of the received trade unit that go into each created unit	UTUI-1 50%, 1000 kg UTUI-2 50%, 1000 kg		x	

Additional data

FFF250-	(unassigned)	Further information elements that describe the received trade / logistic unit, linked to UTUI / ULUI				x
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FOR EACH NEW TRADE UNIT CREATED BY FISH FARM

Identity

FFF301	Unit ID	UTUI	978817525.0766.000010123	x		
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Description

FFF302	Location of fish farm	Longitude + latitude or other appropriate specification.			x	
FFF303	Size (grade) distribution	Weight per size grade (1-2, 2-3, 3-4, etc) in kg	1-2 kg 200 kg 2-3 kg 500 kg 3-4 kg 250 kg		x	
FFF304	Condition factor	Mathematic formula: $100 * (\text{weight (g)} / \text{length}^3 \text{ (cm)})$.	1,2			x

Note

ISO 12877:2011 scope

This International Standard specifies the information to be recorded in farmed finfish supply chains in order to establish the traceability of products originating from farmed finfish. It specifies how traded fishery products 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 farmed finfish and their products, from finfish meal, breeding and finfish farming through to retailers or caterers.

ISO 12877:2011 has forms for:

- fish feed production
- breeders
- hatcheries
- fish farms
- live fish transporters
- processors
- transporters and storers
- traders and wholesalers
- retailers

Conclusions from the standardization process

- Standards like the ones proposed are needed
- Should be based on unique identification on lowest level, i.e. the smallest unit that will not be split up, for example a package, a box etc.
- Standards will enable electronic recording and communication, but not require it
- The standards should not have GS1 codes or any other proprietary codes as a prerequisite
- The scope is only finfish, not molluscs, prawn, crawfish, etc.
- Parameters are categorized into 'shall', 'should' and 'may'; the last only informative

Summary and status

- ISO 12875 / 12877 are used in the supply chain, mainly to facilitate electronic communication between trading partners
- For supply chain EDI and traceability in the aquaculture chain, the GS1 standards are dominant, see the “*Implementing traceability in fish, seafood and aquaculture supply chains using the GS1 standards for identification, data capture and data sharing*” guidelines, however this requires GS1 membership and hence costs
- The distribution and use of ISO 12877 (and ISO 12875) has been significant; they were renewed for another 5 years in 2020
- ISO 12875 / 12877 are mostly used by smaller producers / trading partners, and mostly outside Europe

Thanks for your attention

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