

PRODUCT CERTIFICATE

Certificate No.:
10000420002-Assessment Services-DNV GL-NOR

Initial date:
08 January 2021

Valid:
08 January 2021 – 08 January 2024

This certifies that the product

Salmo Salar (Lerøy Salmon™)

Produced by

Lerøy Seafood Group ASA

Thormøhlens gate 51, 5006 Bergen, Norway

Complies with the applicable requirements of:

ZSEIT-5-STP-86 rev.0

STP TECHNICAL PRODUCT SPECIFICATION (STP) for Salmo Salar (Lerøy Salmon™)

**- defined Omega 6/Omega 3 and EPA/DHA ratios
- defined minimum of Omega 3 content**

Food Product Certification: The specifications and characteristics being certified are detailed in the Appendix

Limitations:

1. Any changes in the product shall immediately be reported to DNV GL Business Assurance Norway AS in order to verify whether this Certificate remains valid.
2. The validity of this certificate is subject to periodical audits (every 6, 9 or 12 months)
3. This certificate is not valid without the related enclosure

Place and date:
Høvik, 08 January 2021



For the issuing office:
**DNV GL - Business Assurance
Veritasveien 1, 1363 Høvik, Norway**

A handwritten signature in blue ink, appearing to read 'Jøran Laukholm'.

Jøran Laukholm
Management Representative

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Appendix to Certificate

Food Product Certification (based on the surveillance of both the production and the quality system, as well as on type testing and/or type inspection carried out on samples of the product taken from the point of production and having the characteristics established in the related Technical Product Specification).

Characteristics being certified:

- food chain traceability from hatching to packed product - whole gutted fish with head
- Salmo Salar and the raw material in feed are produced after specific requirements related to sustainability and traceability.

Regions and packing codes included in the certification are as follows:

Name	Address	Packing code
Lerøy Aurora AS	c/o Kystens Hus Stortorget 1 9008 Tromsø Norway	T 126 F 55
Lerøy Midt AS	Industriparkveien 31 7246 Sandstad Norway	ST 337
Lerøy Vest AS & Sjøtroll Havbruk AS	Skipavika 54 5397 Bekkjarvik Norway	H 107

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Table 1.
Specification for Salmo Salar, Feed

When required - sampling will be in accordance with EC no 333/2007 and EC no 644/2017.

Feed			
Parameter / Subject	Demand	Verification	
1	Quantity of Omega 3	<i>Prescription control, analysis of fatty acid profile in feed.</i> <i>Nofima BioLab AO CS CE 1B 89</i>	
2	Quantity of Omega 6		
3	Relation between Omega 6:3		
4	Quantity of EPA + DHA		
5	Quantity of dioxins and PCBs	Dioxins max 1.75ng/kg WHO TEF Cadmium max 1mg g/kg Lead max 5.0 mg/kg Mercury max 0.2mg/kg	Dioxins prescription control, analysis of feed HRMS Forschungsgesellschaft mbH (Eurofins WEJ Contaminants) Geierstr.1, D-22305 Hamburg, Germany. Cadmium and Lead analysis of feed in NMKL No 1611998 mod Mercury Analysis of feed EN 162772012
6	Quantity trimmings	Min 5 % of the marine raw materials from 1+kg fish. The principle of mass balance will be used	Report from BI for used fish species and raw materials
7	Use of microalgae	Yes	Report from BI for use of raw material
8	Use of Etoxyquine in fishmeal and fishoil during transport	0	Traceability for use of antioxidants in raw material / Analysis of raw materials. Feed may contain trace amounts of EQ as long as EQ is added to the same production line for commodity to other customers. Nofima BioLab AOAC 96307
9	Use of antibiotics	0	Traceability reports for different feed types used
10	Use of cantaxantine	0	Report from BI on used pigment source
11	Use of salmon oil	0	Report from BI on used fish species and raw material
12	Use of raw materials based on GMO over 0.9 %	0.9 % for vegetable raw materials. Aminoacids and other additives may be produced using genetically modified microorganisms, but are not defined as GMOs according to EU/ Norwegian regulations	Combination traceability analysis of used raw materials that potentially contains genetically modified raw materials Feed manufacturer uses PCR analysis of raw materials containing enough DNA / protein to allow such analysis to be performed on material. For other raw materials traceability is required back to the area where the plant is grown. For risk products, certification such as ProTerra of the raw material is required. PCR analysis of the feed is unlikely to verify GM status of raw materials.
13	Use of chitin inhibitors	0	Traceability reports for different lice treatments used
14	Use of Protein Feed Materials of Mammalian or Avian origin (PAPs)	0	Traceability of used raw materials. Feed manufacturer performs microscopy analyses of raw materials that potentially contain PAPs. Plant Directorate in Denmark/ Eurofins / AI Control Stjørdal (Labnett)
15	Max kg CO ₂ e/kg feed produced	2.0 kg CO ₂ e/kg produced	LCA analysis

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Table 2.

Specification for *Salmo Salar*, Fish Farming, the traceability is according to ISO 22005:2007

Fish Farming			
Parameter / Subject		Demand	Verification
16	Max carbone footprint per kg fish produced scope 1 + scope 2	< 0.2 tons CO ₂ e/tons gross growth	Audits, registration system
17	Traceability of Lerøy Salmon in Fich Track	Yes	Audits, registration system
18	Traceability of raw materials in fish feed	Yes	Audits, registration system
19	FIFO, Max Fish in/Fish out per kg fish produced	< 2	Measurements
20	Escapes	0 per location	Audits, registration system
21	Survival, rolling 12 months	>94 %	Audits, registration system
22	Average sexually mature sealice per salmon	>0.2	Audits, registration system
23	Average environmental status per locality	Max 1.5	MOM B analysis made by 3. part companies

Table 3.

Specification for *Salmo Salar*, end product

Parameter 24,25 and 26 is verified by analysis from NIFES,

-Høy,C.E.; Hølmer,G. (1981) Incorporation of cis-Octadecenoic Acids into the Rat Liver Mitochondrial Membrane Phospholipids and Adipose Tissue Triglycerides. *Lipids* 16: 102-108.

-Lie, Ø. and Lambertsen, G., 1991. Fatty acid composition of glycerophospholipids in seven tissues of cod (*Gadus morhua*), determined by combined high-performance liquid chromatography and gas chromatography. *J. Chromatogr.* 1991 Apr 19, 565, 119-129. Accredited method.

End product			
Parameter / Subject		Demand	Verification
24	Quantity of EPA + DHA in fish meat	> 1 g / 100 g	Analysis NQC GC-FID
25	Quantity of Omega 3 in fish meat	> 2.9 g pr 100 g	
26	Relation between Omega 6:3 in fish meat	< 1	Analysis NQC GC-MS
27	Quantity of dioxins and PCBs in fish meat. Sum PCDD /F (WHO 17) + PCB (WHO 12) Lower b	< 0.5 ng/kg	
28	Quantity of Arsenic in fish meat	< 1.0 mg/kg	Analysis NQC EN 15763:2009
29	Quantity of Lead in fish meat	< 0.1 mg/kg	
30	Quantity of Copper in fish meat	< 0.5 mg/kg	Analysis NQC DIN EN ISO 11885, mod
31	Quantity of Mercury in fish meat	< 0.02 mg/kg	Analysis NQC §64 LFGB L00.00-19/4
32	Quantity of Cadmium in fish meat	< 0.1 mg/kg	EN 15763:2009

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Table 4.
Specification for *Salmo Salar*, in accordance to GRASP

General demands			
Parameter / Subject		Demand	Verification
33	Has the company developed an ethical framework that has been implemented?	Yes	Audits
34	Has the company taken procedures to avoid child labor in the business?	Yes	Audits
35	Does the company have training routines for the employees at the aquaculture activities?	Yes	Audits
36	Does the company have risk assessment work at the aquaculture activities?	Yes	Audits
37	Does the employees have regulated working conditions through contracts?	Yes	Audits

Table 5.
Content traceability, in accordance to ISO 22005:2007

Dimension	Parameter / Subject		Demand	Verification
Broodstock	38	Name of broodstock company	Yes	Audits
	39	License nr	Yes	Audits
	40	Strain	Yes	Audits
Juvenile	41	Name of hatchery	Yes	Audits
	42	License nr hatchery	Yes	Audits
	43	Hatching period	Yes	Audits
	44	Smolt weight	Yes	Audits
	45	Name of smolt plant	Yes	Audits
	46	License nr of smolt plant	Yes	Audits
	47	Name of wellboat if used	Yes	Audits
Farm	48	Name of fish farm	Yes	Audits
	49	License nr of farm	Yes	Audits
	50	Location license	Yes	Audits
	51	Name of Fjord	Yes	Audits
	52	Cage density	Yes	Audits
	53	Cage number	Yes	Audits
	54	Last day of feeding	Yes	Audits
	55	Temp Last day of feeding	Yes	Audits
	56	Date of sea transfer	Yes	Audits
	57	Name of wellboat	Yes	Audits
	58	Duration of transport	Yes	Audits
Packing station	59	Name of packing station	Yes	Audits
	60	License nr packing station	Yes	Audits
	61	Packing date	Yes	Audits
	62	Core temperature	Yes	Audits
Processing	63	Name of processing plant	Yes	Audits
	64	License nr of processing plant	Yes	Audits
	65	Processing date	Yes	Audits
Feed	66	Name of different feed types eaten from start to processing	Yes	Audits
	67	Date for first feeding date of each feed type	Yes	Audits
Treatment	68	Name of treatment used on the fish from start to processing	Yes	Audits
Quality	69	Sampling date	Yes	Audits
	70	Fat content	Yes	Audits
	71	Colour Salmofan	Yes	Audits
	72	Colour mg/kg	Yes	Audits
	73	Condition factor	Yes	Audits