

ANNEXES

ANNEX 1. List of the feed and egg samples analysed for both sections of this work, (1) aiming at a better spawning success of salmonid in Belgium and (2) aiming at a Walloon Atlantic salmon egg production for human consumption.

FISH FEED					
Fish feed name	Origin (Brand, city, country)		Fish feed species		
Repro floating	Coppens, Helmond, The Netherlands		Captive sea trout (CoSMos)		
Repro floating improved ¹	Coppens, Helmond, The Netherlands		Captive Atlantic salmon (CoSMos)		
T-3P Optiline	Skretting, Fontaine les Verviers, France		Captive rainbow trout (Du Ry Des Pres farm)		
FISH EGGS					
Type	Species	Origin	Description	Years at sea	Treatment
Raw eggs	Atlantic salmon	CoSMos	Captive 3+ (first spawn)	0	Raw
	Atlantic salmon	CoSMos	Semi-wild (spring run)	2	Raw
	Sea tout	CoSMos	Captive 2+ (first spawn)	0	Raw
	Sea tout	CoSMos	Semi-wild (spring run, first spawn)	1	Raw
	Rainbow trout	Du Ry Des Pres	Captive	0	Raw
	Atlantic salmon	CNSS	Semi-wild	2	Raw
Salted eggs for the sensory test	Atlantic salmon	CoSMos	Captive 3+ (first spawn)	0	Salted
	Atlantic salmon	CoSMos	Semi-wild (spring run, first spawn)	2	Salted
	Sea tout	CoSMos	Captive 2+ (first spawn)	0	Salted
	Rainbow trout	Du Ry Des Pres	Captive	0	Salted
Market eggs	Pacific salmon (<i>O. keta</i>)	Delhaize	Gabriel	/	Tansformed
	Pacific salmon (<i>O. kisutch</i>)	Bio c' Bon	Kaviari	/	Tansformed
	Pacific salmon (<i>O. keta</i>)	Carrefour	Carrefour	/	Tansformed
	Pacific salmon (<i>O. gorbuscha</i>)	Petrossian	Petrossian	/	Tansformed
	Trout	Carrefour	Carrefour	/	Tansformed
	Rainbow trout	Delhaize	Gabriel	/	Tansformed

¹ Repro floating feed improved with cod liver oil (type A, ABC Chemicals, Braine-le-Château, Belgium) and “Carophyll Red” (Red animals, Ere, Belgium).

ANNEX 2. Composition and properties of the “Repro floating” artificial fish feed, used to feed the captive Atlantic salmon and the captive sea trouts of CoSMos.



REPRO FLOATING

- Good condition of parent stock
- Optimal egg development
- High egg quality and fry survival
- Optical control on feeding due to floating pellets
- Health support

COMPOSITION:

Analyses (%)	8.0 mm
Protein	48%
Fat	15%
Crude fibre	1,3%
Ash	7,0%
Total P	1,06%
Astaxanthine (mg/kg)	40

Vitamins added	
Vitamin A (IE/kg)	14.000
Vitamin D (IE/kg)	200
Vitamin E (mg/kg)	330
Vitamin C (stable) (mg/kg)	500

Energy	
Gross (MJ/kg)	21,1
Digestible (MJ/kg)	19,3
Metabolisable (MJ/kg)	17,0

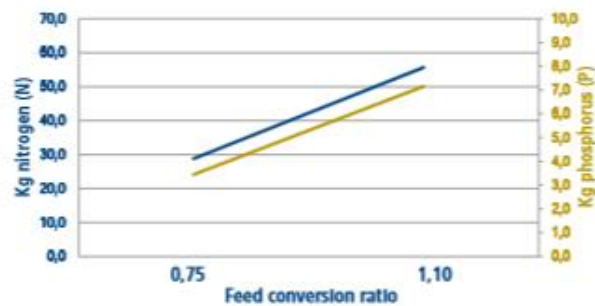
The values of the nutrients and vitamins are from the time of writing. These values can vary due to natural variation in the ingredients. We reserve the right to change our recipes. For the exact values we refer to the label.

FEEDING TABLE FOR LOW FEED CONVERSION RATIO (FCR):

Fish weight (g)	Feed size (mm)	< 6 °C	6 °C	8 °C	10 °C	12 °C	14 °C	16 °C	18 °C	> 18 °C
800-2000	8.0	According to fish's appetite	0,34	0,41	0,49	0,59	0,72	0,87	0,70	According to fish's appetite and O2 level
2000-4000	8.0		0,28	0,34	0,41	0,49	0,60	0,72	0,59	

- * The feeding advice is expressed in % biomass/day.
- * This feeding table is a guideline only and based on optimal conditions.

ECOLOGICAL FIGURES:



ANNEX 3. Composition of the "T-3P Optiline" artificial fish feed, used to feed the captive rainbow trouts of Du Ry Des Pres fish farm.

24, Le Pont de Pierre - 02140 FONTAINE-LES-VERVINS - Tél : 03.23.91.34.34 - N° AGREMENT : Alpha FR 02 321 001

T-3P Optiline A40

Aliment complet pour Truite / Volledig diervoeder voor Forel / Alleinfuttermittel für Forellen / Växtpoder för Regnbågs lax / ?????????? ?????????? ??????????

COMPOSITION / SAMENSTELLING / ZUSAMMENSETZUNG / INGREDIENSER / ??????????

- Féverole/Faba bonen/Ackerbohne/Fababonor/???? - Tourteau feed d'extraction de soja stocks/Sojaskrovoer/Soja-Extraktionschroffutter aus geschälter Saat/Fodemjöl av skaldad soja/????
 ????????????? - Protéines animales transformées de volaille / Plummeemel / Geflügelmehl / Bearbetat animaliskt protein från fjäderfä / ???
 ????????????? - Protéines de plumes hydrolysées/Gehydrolyseerd verenmeel/Vedermehl/Hydrolyserat fjädermjöl/??
 ????????????? - Blé/Tarwe/Weizen/Vete/???????????? - Huile de volaille/Plummevee/Olie/Geflügelöl/Fjäderfäolja/??
 ????????????? - Huile de poisson/Visolie/Fisöl/Fiskolja/??
 ???

TENEUR ANALYTIQUE / SAMENSTELLIR / GEHALTE AN INHALTSSTOFFEN / INNEHÅLL / ?????????

Matières protéiques brutes / Ruw eiwit / Rohprotein / ????????????????? (%) : 41,5 % Calcium / Kalzium / Kalcium / ????????? (%) : 1,5 %
 Matières grasses brutes / Ruw vet / Rohfett / Råfett / ????????????????? (%) : 21,5 % Sodium / Natrium / ????????? (%) : 0,2 %
 Cellulose brute / Ruwve celstof / Rohfaser / Fiber / ????????????????? (%) : 2,8 % Phosphore / Fosfor / Phosphor / ????????? (%) : 0,8 %
 Cendres brutes / Ruwve as / Roasche / Aska / ????????? (%) : 6,5 %

ADDITIFS / ADDITIEVEN / ZUSATZSTOFFE / TILLSATSER / ??????????

VITAMINES/VITAMINEN/VITAMINE/VITAMINER / ?????????????????
 E672 Vitamine A / Vitamin A / ?????????? : 5000 U.I./I.E.

E671 Vitamine D3 / Vitamin D3 / ?????????? D3 : 750 U.I./I.E.

OLIGO-ELEMENTS/MICRONUTRIENTS/MIKRONÄHRSTOFFE/MIKRONÄRINGSÄMNINGEN / ?????????????????

E1 Fer (sulfate ferreux monohydraté) / Jizer (ferro-sulfat monohydrat) / Eisen (Eisen-Sulfat-Monohydrat) / Järn (järnmonovätesulfat) / ???
 E2 Iode (iodate de calcium anhydre) / Jodium (calciumjodidat wasserfrei) / Jod (Kalziumjodidat) / Jod (Kalziumjodidat) / ???
 E4 Cuivre (sulfate cuivrique pentahydraté) / Koper (koper sulfatpentaahydrat) / Kopper (koppersulfatpentaahydrat) / Kopper (koppersulfatpentaahydrat) / ???
 E5 Manganèse (sulfate manganéux monohydraté) / Mangan (mangan sulfat monohydrat) / Mangan (Mangansulfat-Monohydrat) / Mangan (manganmonovätesulfat) / ?????????
 E6 Zinc (sulfate de zinc monohydraté) / Zink (zink sulfat monohydrat) / Zink (Zinksulfat Monohydrat) / Zink (zinkmonovätesulfat) / ???

42 mg
 2,1 mg
 5 mg
 16 mg
 110 mg

AMELIORATEURS DE DIGESTIBILITE / VERTERINGSBEVORDERAARS / VERDAULICHKEITSFÖRDERERE / SMÅLTARHETSFÖRBÄTTARANDE MEDEL / ?????????????????

4a1641 6-Phytase (EC 3.1.3.26) / 6-Фтyаse (EC 3.1.3.26) / 6-fytas (EC 3.1.3.26) / 6-???????? (EC 3.1.3.26) : 1000 FYT
 ANTIOXYGENES / ANTIOXIDANTEN / ANTIOXIDANTEN / ANTIKSIDANTER / ???
 E321 BHT (butylhydroxytoluène) / BHT (butylhydroxytoluol) / BHT (butylhydroxytoluol) / BHT (butylhydroxytoluol) / ???
 E324 Ethoxyquine / Ethoxyquin / Etoxiquin / ?????????????
 E310 Gallate de propyle / Gallate propyle / Propylgallat / ?????????????
 COLORANTS / KLEURSTOFFEN / FARBSTOFFE / FÄRGÄMNINGEN / ????????????????? (KE) : E161j Astaxanthine / Astaxanthin / ????????????????? : 40 mg

MODE D'EMPLOI / GEBRUIKSAANWIJZING / FÜTERUNGSHINWEIS / ANVÄNDNING / ?????????????? : Consulter la fiche technique correspondante / Voedergift in overeenstemming met de voeder tabel van de producent. / siehe Datenblatt / Foderfällning enligt tabell / ???

INFORMATIONS / INFORMATIE / HINWEIS / INFORMATION / ?????????????? : Contient de la farine de poissons, des produits sanguins et des protéines animales transformées de non-ruminants/Endst Fischmehl, verarbeitete tierische Proteine (frei von Wiederkäuer) und Blutmehl, Darm nicht an Wiederkäuer verfeinert werden /Evet vismeel, berwerkt dierlijke etwitten (vrij van herkauwers), hemoglobinepoeder, alleen voeren aan vissen /Innehåller fiskmjöl, bearbetat animaliskt protein (fritt från idisslare) och hemoglobinjöl, får endast användas för utfodring av fisk.????????????????

Poids net / Nettogewicht / Nett Gewicht / ?????????????? (kg) : 25

107044

N° Lot / Fabriknummer / Chargennummer / Batch no. / ?????????????????? : 05/09/2016

A utiliser de préférence avant / Ten minste houdbaar tot / Mindestens haltbar bis /

Bäst före / ???-????-????? :

Verdeeld in Nederland door Trouw Nutrition Nederland BV - 3880 AA Putten / Vermarktung in Deutschland von Trouw Nutrition Deutschland GmbH - 86664 Burgheim / Forsäljning : Skretting AB, Fiskebäckskanua 34, 426 58 Västra Frölunda, Sverige - Tel. +46 31 690790

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ANNEX 4. Data collected during the sampling of the eggs from the captive Atlantic salmon, at CoSMos on 28 November 2017.

Day :	28-11-17
Hall T° :	8,5°C
Species :	Atlantic salmon - 3+ captive - first spawn (sampling to use for sensory test)

SAMPLING

CoSMos Nr	Pit-Tag	Lt (mm)	Lf (mm)	Weight (g) before egg-laying	Weight (g) after egg-laying	weight (g) of egg-laying	Mean eggs weight (g)	SAMPLE 110 g		EXTRA
								Sample name	Sample weight (g)	
784	/	464	464	1198	861	242,1	0,1026	SA-C-1-E	100,6	≈ 100
785	/	460	441	953	786	159,83	0,1165	SA-C-2-E	100,2	
786	/	454	438	1016	738	199,8	0,1066	SA-C-3-E	100,6	
788	/	438	430	914	799	112,3	0,101	SA-C-4-E	100,2	
789	/	431	417	900	650	176,99	0,1119	SA-C-5-E	100,1	

On average : 20 g/female

SALTING PROCESS

Preliminary test	Batch salting : 75 min	Extra batch salting : 75 min
Start time :	Start time : 10h40	Start time : 10h43
End time :	End time : 11h55	End time : 11h58
Mixing :	Mixing : 10h50 - 11h00 - 11h10 - 11h20 -	Mixing : 10h51 - 11h01 - 11h11 - 11h21 -
	Salt level verif 11h25 - 11h30 - 11h40	11h31 - 11h41

Fridge T° : 5°C

Name	Hour	Calibration (ok/nok)	NaCl 5% (%)	Check 1 (%)	NaCl 5% (%)	Check 2 (%)	Mean salt level (%)
Raw eggs	10h50	ok	4,8	0,17	4,3	0,18	0,18
Batch salting (45 min)	11h25	ok	4,4	2,2	/	2,2	2,20
Batch salting (60 min)	11h40	ok	4,8	3,5	4,5	3,2	3,35
Batch salting (75 min)	11h55		4,5	4,4	4,1	4,5	4,45
Extra batch salting (75 min)				4,9	/	4,7	4,80

PASTEURISATION

Start time (69°C) :	14h40
End time :	15h40
Note :	extra pot : water at the end --> water removal of the pot and new pasteurisation for 1h.

STORAGE

2 pots 360 ml : 200g eggs/pot
1 pot 200 ml : 30 g eggs
EXTRA : 2 pots 200 ml : 50 g eggs/pot

ANNEX 5. Data collected during the sampling of the eggs from the semi-wild Atlantic salmon, which spent two years at sea, at CoSMos on 24 November 2017.

Day : 24-11-17
Hall T°: 10°C

Species : Atlantic salmon - Half-wild which spent 2 years at sea - first spawn - "F0 2017"

SAMPLING

CoSMos Nr	Pit-Tag	Lt (mm)	Lf (mm)	Weight (g) before egg-laying	Weight (g) after egg-laying	weight (g) of egg-laying	Mean eggs weight (g)	SAMPLE 50 g		SAMPLE 110 g		EXTRA
								Sample name	Sample weight (g)	Sample name	Sample weight (g)	
SM 166	06B8 9243	775	739	3683	2781	670,13	0,092	SA-S2-1	50	SA-S2-1-E	110,8	
SM 169	079A 64EF	820	785	4530	3272	977,71	0,1339 (false)	SA-S2-2	50,3	SA-S2-1-E	109,9	
SM 162	06B8 7D46	814	768	3698	2763	827,83	0,096	SA-S2-3	49,9	SA-S2-1-E	110,4	53
SM 192	0799 6D1E	761	722	3000	2467	459,21	0,0962	SA-S2-4	50	SA-S2-1-E	111	
SM 191	079A 3119	773	740	3642	2707	714,48	0,0861	SA-S2-5	50,5	SA-S2-1-E	110,6	

On average : 10 g/female

SALTING PROCESS

Preliminary test : 60 min
Start time : 10h43
End time : 11h43
Mixing : 10h54 - 11h05 - 11h16 - 11h26 - 11h38
Fridge T° : 5°C

Batch salting : 90 min
Start time : 11h34
End time : 13h04
Mixing : 11h45 - 11h54 - 12h04 - 12h14 - 12h20 - 12h34 - 12h44 - 12h54

Extra batch salting : 90 min
Start time : 11h47
End time : 13h17
Mixing : 11h55 - 12h04 - 12h14 - 12h20 - 12h34 - 12h44 - 12h54

Name	Hour	Calibration (ok/nok)	NaCl 5% (%)	Check 1 (%)	NaCl 5% (%)	Check 2 (%)	Mean salt level (%)
Raw eggs	10h49	ok	4,6	0,17	4,2	0,17	0,17
Preliminary salting (60 min)	11h49	ok	4,6	2,7	4,4	2,7	2,70
Batch salting (45 min)	12h19	ok	/	2,2	/	2,1	2,15
Batch salting (90 min)	12h58	ok	4,6	4,2	4,2	4,3	4,25

PASTEURISATION

Start time (69°C) : 15h25
End time : 16h25
Note : extra pot : water at the end --> water removal of the pot and new pasteurisation for 1h.

STORAGE

2 pots 360 ml : 200g eggs/pot
1 pot 200 ml : 50 g eggs legs of the whole batch, freeze on ice during transport from Ereze to LLN!
EXTRA : 1 pot 200 ml : 50 g eggs/pot

ANNEX 6. Data collected during the sampling of the eggs from the semi-wild sea trouts, which spent one year at sea, at CoSMos.

Species :	Sea trout - half-wild which spent one year at sea - first spawn
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SAMPLING								SAMPLE 50 g		
Sampling day	CoSMos Nr	Pit-Tag	Lt (mm)	Lf (mm)	Weight (g) before egg-laying	Weight (g) after egg-laying	weight (g) of egg-laying	Mean eggs weight (g)	Sample name	Sample weight (g)
13-12-17	44	079A-090D	500	500	1282	1035	206,82	0,075	TM-S1-1	50,1
13-12-17	47	0799-6EA3	570	560	1808	1424	319,65	0,094	TM-S1-2	50,1
12-01-18	27	0799-B5CA	530	530	1623	1280	279,21	0,081	TM-S1-3	50,55
12-01-18	?	079A-3005	491	491	1305	1231	39,6	0,067	TM-S1-4	39,6
12-01-18	32	079A-229F	620	620	2656	2052	484,38	0,103	TM-S1-5	50,6
31-01-18	36	079A-OC9F	560	560	2071	2000	56,3	0,081	TM-S1-6	56,3

ANNEX 7. Data collected during the sampling of the eggs from the captive sea trouts, at CoSMos on 23 November 2017.

Day :	23-11-17
Hall T°:	10°C
Species :	Sea trout – 2+ captive (F1) – first spawn

SAMPLING

CoSMos Nr	Pit-Tag	Lt (mm)	Lf (mm)	Weight (g) before egg-laying	Weight (g) after egg-laying	weight (g) of egg-laying	Mean eggs weight (g)	SAMPLE 50g		SAMPLE 110g		EXTRA	
								Sample name	Sample weight (g)	Sample name	Sample weight (g)	Pot 1 (g)	Pot 2 (g)
	/	470		1138	888	211,1	0,0587	TM-C-1	49,9	TM-C-1-E	110		
	/	468		1312	1004	267,74	0,0712	TM-C-2	50,4	TM-C-2-E	110,1		
	/	450		1195	896	254,8	0,08	TM-C-3	50,4	TM-C-3-E	109,9		
	/	446		1023	827	170,89	0,0657	TM-C-4	50,1	TM-C-4-E	110		
	/	475		1136	908	180,26	0,067	TM-C-5	50,7	TM-C-5-E	110,2		46,9

On average : 10 g/female

SALTING PROCESS

Preliminary test : 45 min	Batch salting : 40 min + 18 min	Extra batch salting : 60 min
Start time : 10h22	Start time : 11h28	Start time : 11h34
End time : 11h07	End time : 12h08	End time : 12h34
Mixing : /	Mixing : 11h28-11h38-11h48-11h58	Mixing : 11h47-11h58-12h05-12h14
	Start time : 12h23	
	End time : 12h41	
	Mixing : 12h33	

Fridge T° : 5°C

Name	Hour	Calibration (ok/nok)	NaCl 5% (%)	Check 1 (%)	NaCl 5% (%)	Check 2 (%)	Mean salt level (%)
Raw eggs	10h35	ok	4,6	0,19	4,4	0,18	0,19
Preliminary salting (45 min)	11h10	ok	4,6	4,4	4,1	4,2	4,30
Batch salting (40 min)		ok	4,4	2,4	4,4	2,3	2,35
Extra pot salting	12h40	ok	4,5	5,5	3,7	5,3	5,40
Batch salting (58 min)	13h00	ok	/	5,1	4,4	4,7	4,90

PASTEURISATION

Start time (69°C) :	chrono 1 hour
End time :	chrono 1 hour
Note :	no water in the pots at the end

STORAGE

2 pots	360 ml : 200g eggs/pot
1 pot	200 ml : 50 g eggs
EXTRA :	1 pot 200 ml : 50 g eggs/pot

ANNEX 8. Data collected during the sampling of the eggs from the captive rainbow trouts, at “Du Ry Des Pres” farm (Philippeville) on 03 December 2017.

Day :	03-12-17
Hall T°:	0°C
Species :	Captive rainbow trout - Fish farm of Mr Godfriaux (Philippeville)

Nr	SAMPLE 50 g		SAMPLE 110 g		EXTRA	Total sampling (g)	Number of eggs
	Sample name	Sample weight (g)	Sample name	Sample weight (g)			
1	ARC-C-1	50,9	ARC-C-1-E	110,7	79,4	241	3391
2	ARC-C-2	50,4	ARC-C-2-E	110	48,8	209,2	3224
3	ARC-C-3	50,2	ARC-C-3-E	110,3	60,5	221	3815
4	ARC-C-4	38,8	ARC-C-4-E	110,7		149,5	2458
5	ARC-C-5	51,4	ARC-C-5-E	110,2	97,9	259,5	4949
							TOT : 17 837

SALTING PROCESS

Preliminary test : 45 min Start time : 12h38 End time : 13h23 Mixing : 12h48 - 12h58 - 13h08	Batch salting : 35 min Start time : 13h08 End time : 13h43 Mixing : 13h18 - 13h28	Extra batch salting : 35 min Start time : 13h10 End time : 13h45 Mixing : 13h20 - 13h30
Cold room T° : 2°C		

Name	Hour	Calibration (ok/nok)	NaCl 5% (%)	Check 1 (%)	NaCl 5% (%)	Check 2 (%)	Mean salt level (%)
Raw eggs	12h40	ok	4,6	0,12	4,2	0,13	0,13
Preliminary salting (45 min)	13h16	ok	/	5,6	/	5,2	5,40
Batch salting (35 min)	13h40	ok	4,9	4,4	4,5	4	4,20

PASTEURISATION

Start time (69°C) : 14h10 End time : 15h10 Note : /

STORAGE

2 pots 360 ml : 200g eggs/pot 1 pot 200 ml : 50 g eggs EXTRA : 2 pots 200 ml : 100 g eggs/pot + 1 pot 200 ml : 50 g eggs
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ANNEX 9. Sampling list of the commercial eggs from Pacific salmon and rainbow trouts purchased in Belgium markets at three different periods during the year 2017.

Species	Brand	Market	Sample name	Date of purchase	Place of purchase	N° Lot
Pacific salmon (O. keta)	Gabriel	Delhaize	SP-G-1	03-11-17	Wavre	42463
			SP-G-2	05-12-17	Wavre	42463
			SP-G-3	23-01-18	Wavre	42626
Pacific salmon (O. kisutch)	Kaviari	Bio c'Bon	SP-K-1	30-11-17	Bruxelles	K/160
			SP-K-2	16-12-17	Bruxelles	K/160
			SP-K-3	18-01-18	Bruxelles	K/171
Pacific salmon (O. keta)	Carrefour sélection	Carrefour	SP-CS-1	03-11-17	Wavre	17144011
			SP-CS-2	05-12-17	Wavre	173364
			SP-CS-3	23-01-18	Wavre	173484
Pacific salmon (O. gorbuscha)	Petrossian	Petrossian	SP-P-1	27-11-17	Uccle	88062852
			SP-P-2	16-12-17	Uccle	2852
			SP-P-3	20-01-18	Uccle	89095621
Trout (unknown species)	Carrefour sélection	Carrefour	ARC-CS-1	03-11-17	Wavre	17168021
			ARC-CS-2	05-12-17	Wavre	17168021
			ARC-CS-3	23-01-18	Wavre	173551
Rainbow trout	Gabriel	Delhaize	ARC-G-1	05-12-17	Wavre	42374
			ARC-G-2	18-12-17	LLN	42374
			ARC-G-3	23-01-18	Wavre	43162

ANNEX 10. Description of the chemical analyses carried out on the egg and feed samples.

1. Dry matter, crude ash and crude protein contents

To determine the dry matter content, the experimental protocol AOAC 967.03 (105°C, 16h) was applied on 0.5 g of sample for 16 h and the AOAC 923.03 (550°C, constant weight) and AOAC 967.04 (550°C for 16 h) were followed for the determination of the crude ash content on the same 0.5 g of each sample. To identify the crude protein content, the Kjeldahl method (N x 6.25) was used after acid digestion with 0.5 g of sample.

2. Crude lipid content

The standard method to determine the crude lipid content is the Soxhlet method (AOAC 98/64/CE, AOAC 920.39). According to the approximative lipid content, there are two types of approach, one of two steps and one of three steps (if the crude lipid content is higher than 15%). Those methods taking time, we tested a third method using the first step of lipid extraction of the fatty acid profile determination by the Bligh and Dyer method with some modifications (Bligh & Dyer, 1959). We tested those three methods on three samples (with two technical replicates) and compare the results obtained. There were no significant differences between the results of the Soxhlet method of two or three steps. For the last method, little difference was observed and we chose this method to carry out our analyses. Furthermore, to control our results, we made some verifications for a couple of samples with the Soxhlet method of two steps. The method used to determine the crude lipid content is described below.

Samples (about 60 mg freeze dried weight) were homogenised with 800 µl water and silica beads for 2 x 30 s at a speed of 6000 rpm using MagNA lyser (Roche Diagnostic, Kendro Laboratory, Germany). Samples were then transferred from the Eppendorf tube that had been rinsed twice with 1 ml of methanol (VWR chemicals, Radnor, PA, USA) into a pyrex glass tube. Lipids were then extracted according to a method adapted from Bligh and Dyer ((Bligh & Dyer, 1959) using chloroform/methanol/water (2/2/1.8, v:v:v) (VWR chemicals, Radnor, PA, USA). After a centrifugation (1120 x g for 10 min at room temperature), a biphasic system could be observed. The aqueous upper phase was discarded and 1.5 ml of the organic lower phase was transferred into a tared receptacle. After total solvent evaporation, receptacles were weighed and the crude lipid content weighed.

3. Fatty acid profile determination

a) Lipid extraction

Sample lipids were extracted according to a method adapted from Bligh and Dyer (Bligh & Dyer, 1959). Precisely, samples (about 40 mg freeze dried weight) were firstly homogenised with 800 µl water and silica beads for 2 x 30 s at a speed of 6000 rpm using MagNA lyser (Roche Diagnostic). Then, the lipids were extracted sequentially with 2 ml of methanol (VWR chemicals), 2 ml of chloroform (VWR chemicals) and 1 ml of water

to respect the Chloroform/Methanol/water ratio (2/2/1.8, v:v:v). Nonadecanoic acid (N5252 – 1 g, Sigma-Aldrich, St-Louis, MO, USA) was used as internal standard for lipid quantification. After a centrifugation (1120 x g for 10 min at room temperature), the aqueous upper phase was discarded and 1.5 ml of the organic lower phase was kept for methylation.

b) Methylation

A derivatisation enables the analysis of fatty acids in gas chromatography (GC). The methylation transforms the fatty acids in their methyl ester forms and lowers their boiling point. Therefore, sampled lipids were submitted to both alkaline and aciditic methylations. The first reaction occurs under alkaline conditions in which fatty acids are hydrolysed from their initial glycerol backbone through the addition of 0.1 M KOH (VWR chemicals) and incubation at 70°C for 1 h. The second reaction is a Fisher esterification under acidic conditions which transforms the free fatty acids into fatty acid methyl esters (FAME) through the addition of 1.2 M HCl (VWR chemicals) in methanol and incubation at 70°C for 20 min.

After a centrifugation (1170 x g for 5 min at room temperature), FAME were extracted using hexane and water to remove unwanted compounds from organic phase. A determined volume of organic phase was then transferred into amber vials (FilterService, Eupen, Belgium) and 600 µl of hexane (VWR chemicals). An injection standard methylundecanoate, (94118-1ml, Sigma-Aldrich) was added in order to check for the accuracy of injected volumes and correct the potential errors.

c) FAME identification and quantification by gas chromatography

FAME are separated and quantified using GC chromatograph (GC Trace 1310, Thermo Scientific, Milan, Italy) equipped with a flame ionisation detector, a RT2560 capillary column (100m x 0.25mm internal diameter, 0.2 µm film thickness, Restek, Bellefonte, PA, USA) and a GC Pal autosampler (Pal Systems, CTC Analytics AG, Zwingen, Switzerland). The system uses hydrogen as carrier gas at an operating pressure of 200 kPa. The hydrogen flow rate is at 35 mL/min and the air flow rate at 350 mL/min.

The oven temperature programme is as follows: gradual heating from 80°C to 175°C at a 25°C/min rate, 25 minutes at 175°C, gradual heating until 205°C at a 10°C/min rate, 10 minutes at 205°C, gradual heating until 210°C at a 5°C/min rate, 3 minutes at 210°C, gradual heating until 215°C at a 5°C/min rate, 5 minutes at 215°C, gradual heating until 230°C at a 10°C/min rate, 25 minutes at 230°C and gradual cooling from 230°C to 80°C at a 20°C/min rate. GC is run and results are processed by the software ChromQuest 5.0 (Thermo Finnigan, Milan, Italy). The fatty acids are identified and quantified by comparison with retention times and peak areas of a standard mode of 42 pure FAME.

ANNEX 11. Questionnaires of the sensory test.

QUESTIONNAIRE 1 : QUESTIONNAIRE DE DONNÉES GÉNÉRALES

Votre numéro/N° de table :

Vous êtes : Homme / Femme

Quel âge avez-vous ? ans

Quel est votre métier ?

Si vous êtes étudiant, dans quelle faculté ?

Avez-vous déjà mangé des œufs de poissons avant aujourd'hui ? Oui Non

○ Si non, pourquoi ?.....
.....

○ Si oui, lesquels ?.....
.....

Dans quel contexte et sous quelle forme mangez-vous des œufs de poissons ?

.....
.....

Pouvez-vous estimer votre consommation d'œufs de poisson par an ? fois /an

QUESTIONNAIRE 2 : ASPECT VISUEL

Votre numéro/N° de table :
.....

	PRODUIT :	PRODUIT :	PRODUIT :	PRODUIT :
Selon la gradation suivante, répondez au critère ci-dessous : Je n'aime pas <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J'aime <i>La gradation des cases peut être considérée comme la suivante, de gauche à droite : très faible - faible - moyen - fort - très fort</i>				
Appréciation globale	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Selon la gradation suivante, répondez aux 3 critères ci-dessous : Désagréable <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Agréable <i>La gradation des cases peut être considérée comme la suivante, de gauche à droite : très désagréable - désagréable - moyen - agréable - très agréable</i>				
Couleur	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Brillance	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Caractère gluant	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Commentaire
Percevez-vous des différences entre les quatre produits ? <input type="checkbox"/> Oui <input type="checkbox"/> Non Si oui, pour quel(s) produit(s) et quelle(s) raison(s) ? Si oui, quel est votre ordre de préférence, du moins apprécié au plus apprécié ? (ex-aequo acceptés, entourez le symbole adéquat : < ou =) <div style="text-align: center;"> < / < / < / </div>				
COMMENTAIRE GÉNÉRAL :				

QUESTIONNAIRE 3 : ASPECT GUSTATIF

Votre numéro/N° de table :	PRODUIT :	PRODUIT :	PRODUIT :	PRODUIT :
Selon la gradation suivante, répondez au critère ci-dessous : Je n'aime pas <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> J'aime <i>La gradation des cases peut être considérée comme la suivante, de gauche à droite : très faible - faible - moyen - fort - très fort</i>				
Appréciation globale	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Selon la gradation suivante, répondez aux critères ci-dessous : Désagréable <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Agréable <i>La gradation des cases peut être considérée comme la suivante, de gauche à droite : très désagréable - désagréable - moyen - agréable - très agréable</i>				
Goût	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Croquant (texture)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Salé	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Arrière-goût	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Commentaire
Percevez-vous des différences entre les quatre produits ? <input type="checkbox"/> Oui <input type="checkbox"/> Non Si oui, le(s)quel(s) et pour quelles raisons ? Si oui, quel est votre ordre de préférence, du moins apprécié au plus apprécié ? (ex-aequo acceptés, entourez le symbole adéquat : < ou =) <div style="text-align: center;"> < / < / < / </div>				
COMMENTAIRE GÉNÉRAL :				

QUESTIONNAIRE 4 : CLASSEMENT GÉNÉRAL

Votre numéro/ N° de table :

Dans l'ensemble, ces produits vous plaisent-ils ? Oui Non

Seriez-vous prêt à acheter ce type de produit ? Oui Non

Parmi les critères suivants, quels sont ceux pouvant influencer votre consommation et selon quel ordre de grandeur ?

La gradation des cases peut être considérée, de gauche à droite, comme : pas du tout important – pas vraiment important – pas d'avis – assez important – très important

Aspect visuel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goût	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Production locale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Produit de qualité nutritionnelle supérieure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Produit riche en acides gras oméga-3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Production durable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prix	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Parmi tous ces critères, s'il ne fallait en indiquer qu'un seul sur l'emballage afin de faire de la publicité, lequel mettriez-vous ?

Avec quel(s) produit(s) (ou types de produits) consommeriez-vous notre produit ?

Merci pour votre participation!

ANNEX 12. Fatty acid profile (mg/g of dry matter) of eggs from captive rainbow trouts, from Atlantic salmon, either captive or which spent two years at sea, coming either from CoSMos or from CNSS, from captive sea trouts and from sea trouts, which spent one year at sea.

Fatty acid	Captive rainbow trout	Captive Atlantic salmon	Semi-wild Atlantic salmon (CoSMos ²)	Semi-wild Atlantic salmon (CNSS ²)	Captive sea trout	Semi-wild sea trout
12:0	0.14±0.03	0.11±0.01	0.09±0.01	0.05±0.03	0.1±0	0.08±0.01
14:0	1.77±0.19	2.69±0.15	4.11±0.37	2.78±0.13	2.13±0.05	2.65±0.4
16:0	25.69±1.04	28.68±0.7	27.38±1.15	23.64±0.57	22.92±0.56	26.04±1.66
18:0	9.17±0.34	11.26±0.21	11.68±0.33	9.67±0.45	7.4±0.29	10±0.81
20:0	0.14±0.07	0±0	0.06±0.06	0.07±0.07	0.04±0.04	0.05±0.05
22:0	0.11±0.06	0±0	0±0	0±0	0.04±0.04	0±0
24:0	0±0	0±0	0±0	0±0	0±0	0±0
14:1n-5	0±0	0.02±0.02	0.07±0.01	0.02±0.02	0±0	0.04±0.02
16:1n-7	5.41±0.32	9.32±0.5	15.48±3.7	8.76±0.45	5.77±0.18	9.97±0.39
18:1n-7	6.31±0.33	7.04±0.36	8.86±1.25	6.76±0.3	7.34±0.11	10.16±1.06
18:1n-9	54.24±2.47	69.65±2.67	43.62±0.78	38.3±0.97	46.73±2.49	34.98±2.52
20:1n-9	4.05±0.95	1.69±0.03	3.57±0.29	5.34±0.37	3.99±0.29	1.96±0.18
22:1n-9	0.12±0.01	0.17±0.13	0.17±0.01	0.18±0.02	0.24±0.18	0.03±0.03
24:1n-9	0±0	0±0	0±0	0±0	0±0	0±0
18:2n-6	19.41±0.63	23.77±0.62	2.95±0.33	2.31±0.05	15.8±0.83	1.57±0.59
18:3n-6	1.39±0.24	1.13±0.18	0.04±0.04	0.05±0.05	0.2±0.02	0±0
20:2n-6	3.36±0.62	1.86±0.04	0.4±0.02	0.43±0.01	3.73±0.13	0.42±0.1
20:3n-6	5.41±0.81	4.21±0.26	0.59±0.15	0.45±0.01	3.1±0.1	0.43±0.15
20:4n-6	6.98±0.32	3.19±0.24	1.16±0.11	1.09±0.12	2.54±0.25	3.75±1.27
22:4n-6	0.74±0.08	0.2±0.01	0±0	0.06±0.03	0.39±0.05	1.04±0.45
22:5n-6	0.77±0.07	0.33±0.01	0.25±0.02	0.25±0.01	0.59±0.07	0.87±0.46
18:3n-3	2.95±0.07	4±0.39	1.05±0.11	0.88±0.05	2.86±0.12	1.29±0.26
18:4n-3	1.11±0.17	1.01±0.08	0.69±0.07	0.7±0.06	0.3±0.01	0.28±0.05
20:3n-3	0.42±0.06	0.35±0.17	0.15±0.08	0.24±0.01	0.48±0.24	0.33±0.06

20:4n-3	0.67±0.1	1.7±0.2	3.73±0.57	3.26±0.05	0.99±0.09	1.86±0.45
20:5n-3	7.68±0.35	11.36±0.09	21.53±0.39	18.53±0.39	6.31±0.41	15.15±2.14
22:5n-3	3.06±0.55	4.52±0.28	13.67±1.03	11.76±0.74	4.21±0.68	15.06±1.7
24:5n-3	0±0	0±0	0.05±0.02	0±0	0.1±0.02	0.16±0.04
24:6n-3	0.28±0.04	0.11±0.01	0.03±0.03	0.05±0.03	0.31±0.01	0.15±0.02
22:6n-3	33.69±0.87	41.68±0.88	43.96±1.23	42.84±2.45	42.53±2.18	42.09±0.55
Σ SFA ¹	37.02±1.56	42.74±0.99	43.32±1.82	36.21±1.05	32.63±0.61	38.82±2.55
Σ MUFA	70.29±3.95	88.17±3.55	71.77±4.82	60.03±1.5	64.29±2.74	57.68±1.07
Σ C18 n-6 PUFA	20.81±0.4	24.9±0.71	2.99±0.37	2.37±0.08	15.99±0.84	1.57±0.59
Σ n-6 HUFA	17.27±1.18	9.8±0.33	2.4±0.25	2.28±0.16	10.35±0.54	6.51±2.42
Σ C18 n-3 PUFA	4.06±0.11	5.01±0.41	1.74±0.18	1.57±0.07	3.15±0.13	1.57±0.23
Σ n-3 HUFA	45.79±0.64	59.72±1.1	83.12±0.62	76.69±2.48	54.91±1.58	74.81±4.4
n-3/n-6	1.31±0.06	1.87±0.05	16.15±1.81	16.97±1.41	2.21±0.12	12.06±3.64
n-3 HUFA/n-6 HUFA	2.68±0.19	6.11±0.28	35.46±3.79	34.05±3.46	5.33±0.25	14.66±4.37
Total fatty acids	195.24±7.06	230.35±6.47	205.34±6.36	179.16±3.7	181.32±4.21	180.97±5.17

For each condition, three independent samples were analysed and results are expressed as mean values ± SEM.

¹See abbreviations Table 4.

² CoSMos, “Conservatoire du Saumon Mosan” ; CNSS, “Conservatoire National du Saumon Sauvage”

ANNEX 13. Fatty acid profile (mg/g of dry matter) of commercial eggs, from Pacific salmon of four different brands: Carrefour, Gabriel, Kaviari and Petrossian.

Fatty acid	Carrefour	Gabriel	Kaviari	Petrossian
12:0	0.22±0.01	0.29±0.03	0.08±0.01	0.12±0
14:0	7.25±0.45	8.48±0.27	3.02±0.18	4.59±0.03
16:0	24.74±0.91	23.15±0.27	23.42±0.79	21.93±0.18
18:0	10±0.24	9.7±0.19	10.27±0.28	9±0.09
20:0	0.25±0.07	0±0	0±0	0.06±0.06
22:0	0±0	0±0	0±0	0±0
24:0	0±0	0±0	0±0	0±0
14:1n-5	0.11±0.01	0.11±0.01	0.09±0.01	0.13±0
16:1n-7	10.72±0.66	9±0.92	11.87±0.44	9.52±0.17
18:1n-7	7.07±0.35	5.21±0.49	7.73±0.28	6.15±0.09
18:1n-9	38.29±1.82	35.8±1.93	30.75±0.83	32.4±0.47
20:1n-9	1.45±0.07	1.99±0.05	1.91±0.08	1.8±0.02
22:1n-9	0.33±0.04	0.48±0.06	0.06±0.06	0.14±0.14
24:1n-9	0±0	0±0	0±0	0±0
18:2n-6	2.61±0.17	2.67±0.05	1.64±0.08	2.75±0.03
18:3n-6	0±0	0±0	0±0	0±0
20:2n-6	0.69±0.03	0.72±0.02	0.34±0.02	0.72±0
20:3n-6	0.31±0.02	0.28±0.01	0.26±0.02	0.34±0
20:4n-6	2.52±0.28	2.12±0.08	2.48±0.15	2.29±0.11
22:4n-6	0.15±0.07	0.17±0.02	0.22±0.01	0.18±0
22:5n-6	0.78±0.05	0.81±0.12	0.32±0.01	0.57±0.01
18:3n-3	2.57±0.18	2.59±0.18	1.1±0.06	2.33±0.04
18:4n-3	1.67±0.13	1.94±0.09	0.71±0.06	2.16±0.02
20:3n-3	0.57±0.05	0.46±0.01	0.22±0.12	0.33±0.17
20:4n-3	3.72±0.26	4.01±0.16	1.26±0.07	4.18±0.06
20:5n-3	33.48±1.83	29.93±0.94	25.84±1.23	35.97±0.32
22:5n-3	13.14±0.71	10.82±0.85	14.72±0.41	12.51±0.08
24:5n-3	0±0	0±0	0.1±0.01	0±0
24:6n-3	0±0	0±0	0±0	0±0
22:6n-3	49.02±1.64	50.78±1.9	44.47±1.38	49.74±0.35
Σ SFA ¹	42.47±1.52	41.63±0.71	36.8±1.23	35.7±0.24
Σ MUFA	58.39±2.75	52.97±1.04	52.96±1.59	50.45±0.53
Σ C18 n-6 PUFA	2.61±0.17	2.67±0.05	1.64±0.08	2.75±0.03
Σ n-6 HUFA	4.44±0.39	4.1±0.22	3.62±0.2	4.1±0.12
Σ C18 n-3 PUFA	4.24±0.32	4.54±0.26	1.81±0.12	4.49±0.06
Σ n-3 HUFA	99.94±4.29	96±1.47	86.61±3.12	102.73±0.69
n-3/n-6	14.85±0.44	14.87±0.45	16.83±0.27	15.67±0.33
n-3 HUFA/n-6 HUFA	22.69±1.07	23.53±1.16	23.98±0.44	25.09±0.73
Total fatty acids	212.08±9.23	201.91±3.53	183.44±6.31	200.22±1.53

For each condition, three independent samples were analysed and results are expressed as mean values ± SEM. ¹See abbreviations Table 4.

ANNEX 14. Fatty acid profile (mg/g of dry matter) of commercial eggs, from rainbow trouts of two different brands: Carrefour and Gabriel.

Fatty acid	Carrefour	Gabriel
12:0	0.09±0.01	0.12±0.01
14:0	3.13±0.16	2.66±0.07
16:0	24.64±0.82	25.37±1.02
18:0	8.41±0.19	10.51±0.13
20:0	0.27±0.03	0.2±0.03
22:0	0±0	0±0
24:0	0±0	0±0
14:1n-5	0±0	0±0
16:1n-7	5.81±0.29	5.84±0.28
18:1n-7	7.11±0.26	5.37±0.35
18:1n-9	58.08±2.72	35.2±0.95
20:1n-9	5.19±0.14	3.48±0.42
22:1n-9	0.44±0.27	0.05±0.02
24:1n-9	0.08±0.04	0±0
18:2n-6	22.66±1.26	22.65±4.76
18:3n-6	0.26±0.01	0.37±0.15
20:2n-6	4.38±0.13	4.53±0.1
20:3n-6	1.7±0.07	2.15±0.25
20:4n-6	2.14±0.16	3.09±0.29
22:4n-6	0.21±0.01	0.38±0.02
22:5n-6	0.51±0.02	0.53±0.26
18:3n-3	7.42±0.44	3.88±0.46
18:4n-3	0.87±0.06	0.66±0.21
20:3n-3	0.89±0.45	0.88±0.13
20:4n-3	1.54±0.07	0.91±0.08
20:5n-3	13.04±0.47	10.28±0.62
22:5n-3	4.75±0.17	3.91±0.06
24:5n-3	0.21±0.01	0.19±0
24:6n-3	0.32±0.01	0.29±0.02
22:6n-3	43.39±1.21	43.85±1.36
Σ SFA ¹	36.54±1.16	38.86±1
Σ MUFA	76.73±3.21	50.12±2.09
Σ C18 n-6 PUFA	22.92±1.28	23.02±4.91
Σ n-6 HUFA	8.94±0.37	10.67±0.36
Σ C18 n-3 PUFA	8.29±0.5	4.54±0.67
Σ n-3 HUFA	64.14±2.25	60.31±0.81
n-3/n-6	2.28±0.03	2.01±0.28
n-3 HUFA/n-6 HUFA	7.18±0.08	5.67±0.26
Total fatty acids	217.57±8.72	187.53±4.11

For each condition, three independent samples were analysed and results are expressed as mean values ± SEM. ¹See abbreviations Table 4.

ANNEX 15. Fatty acid profile (mg/g of dry matter) of artificial feeds, used to feed the captive Atlantic salmon or the captive rainbow trouts or the captive sea trouts.

Fatty acid	Atlantic salmon	Rainbow trout	Sea trout
12:0	0.15±0	0.76±0.03	0.62±0.01
14:0	4.13±0.04	3.28±0.04	3.57±0.04
16:0	19.72±0.16	26.79±0.26	19.51±0.22
18:0	4.54±0.05	8.23±0.11	4.49±0.01
20:0	0.44±0.03	0.85±0.01	0.41±0
22:0	0.22±0.01	1.42±0.04	0.26±0.02
24:0	0.12±0.08	0.07±0.07	0±0
14:1n-5	0.09±0.01	0.16±0	0.11±0.01
16:1n-7	6.98±0.07	6.02±0.06	4.58±0.05
18:1n-7	5.07±0.02	4.41±0.05	3.81±0.04
18:1n-9	45.42±0.45	67.42±0.49	46.14±0.3
20:1n-9	5.87±0.11	1.45±0.03	3.78±0.03
22:1n-9	0.57±0.05	0.31±0.01	0.52±0.03
24:1n-9	0.45±0.02	0.26±0	0.49±0.03
18:2n-6	22.23±0.33	32.52±0.27	23.47±0.26
18:3n-6	0.17±0	0.19±0.01	0.14±0
20:2n-6	0.55±0.01	0.24±0	0.81±0
20:3n-6	0.19±0	0.17±0.01	0.24±0
20:4n-6	0.82±0.01	0.89±0.04	0.71±0.01
22:4n-6	0.05±0.05	0.2±0	0.16±0.01
22:5n-6	0.27±0	0.15±0.01	0.22±0
18:3n-3	5.35±0.11	8.37±0.16	5.71±0.04
18:4n-3	1.69±0.01	0.7±0.01	1.06±0.02
20:3n-3	0.28±0	0±0	0.42±0.01
20:4n-3	0.54±0.01	0.19±0.01	0.55±0.01
20:5n-3	8.33±0.09	5.22±0.09	4.82±0.05
22:5n-3	1.48±0.02	0.74±0.01	1.22±0
24:5n-3	0.16±0.01	0±0	0.12±0
24:6n-3	0.05±0.02	0±0	0.01±0.01
22:6n-3	10.05±0.08	3.24±0.02	7.41±0.1
Σ SFA ¹	29.32±0.33	41.41±0.45	28.86±0.26
Σ MUFA	64.82±0.72	80.52±0.8	59.62±0.37
Σ C18 n-6 PUFA	22.41±0.33	32.71±0.28	23.61±0.26
Σ n-6 HUFA	1.89±0.04	1.65±0.04	2.13±0.02
Σ C18 n-3 PUFA	7.04±0.1	9.07±0.16	6.78±0.05
Σ n-3 HUFA	20.89±0.22	9.39±0.1	14.55±0.16
n-3/n-6	1.15±0.01	0.54±0.01	0.83±0
n-3 HUFA/n-6 HUFA	11.08±0.21	5.71±0.12	6.82±0.01
Total fatty acids	146.36±1.58	174.73±1.66	135.55±1.1

For each condition, three independent samples were analysed and results are expressed as mean values ± SEM. ¹See abbreviations Table 4.

ANNEX 16. Fatty acid profile (mg/g of dry matter) of salted eggs from captive rainbow trouts, Atlantic salmon, either captive or which spent two years at sea (CoSMos²), and from captive sea trouts.

Fatty acid	Captive rainbow trout	Captive Atlantic salmon	Semi-wild Atlantic salmon	Captive sea trout
12:0	0.14±0.01	0.14±0.02	0.05±0.03	0.1±0
14:0	1.51±0.04	2.4±0.1	2.97±0.11	1.94±0.08
16:0	22.63±0.36	25.34±0.64	23.62±0.6	21.39±0.87
18:0	8.17±0.09	10.03±0.1	10.06±0.09	6.75±0.22
20:0	0.11±0.05	0±0	0.07±0.07	0.08±0.04
22:0	0.14±0.07	0±0	0±0	0±0
24:0	0±0	0±0	0±0	0±0
14:1n-5	0±0	0±0	0.02±0.02	0±0
16:1n-7	4.54±0.11	8.42±0.36	11.51±0.5	5.1±0.23
18:1n-7	5.52±0.08	6.39±0.21	7.27±0.2	6.54±0.24
18:1n-9	44.57±0.69	60.84±1.58	38.03±1.29	41.06±1.52
20:1n-9	3.8±0.05	1.58±0.04	3.47±0.11	3.79±0.16
22:1n-9	0.07±0.04	0±0	0.16±0.01	0.11±0.01
24:1n-9	0±0	0±0	0±0	0±0
18:2n-6	16.03±0.31	20.21±0.64	2.39±0.09	13.85±0.55
18:3n-6	1.1±0.03	0.66±0.33	0.02±0.02	0.2±0.01
20:2n-6	3.07±0.04	1.21±0.43	0.36±0.01	3.39±0.12
20:3n-6	4.64±0.07	4.05±0.1	0.47±0.01	2.97±0.11
20:4n-6	6.48±0.12	2.88±0.05	1.32±0.06	2.48±0.02
22:4n-6	0.67±0.01	0.12±0.06	0.07±0.04	0.35±0.01
22:5n-6	0.73±0.01	0.3±0.01	0.27±0.01	0.56±0.03
18:3n-3	2.41±0.08	3.34±0.12	0.86±0.05	2.41±0.11
18:4n-3	0.88±0.03	0.66±0.24	0.54±0.03	0.26±0.01
20:3n-3	0.33±0.01	0.48±0	0.2±0	0.58±0.01
20:4n-3	0.54±0.01	1.57±0.04	2.64±0.1	0.87±0.03
20:5n-3	6.71±0.13	9.81±0.29	17.8±0.53	5.54±0.27
22:5n-3	2.55±0.03	4.01±0.07	10.93±0.23	3.32±0.12
24:5n-3	0±0	0±0	0±0	0±0
24:6n-3	0.24±0	0.07±0.03	0±0	0.29±0.01
22:6n-3	30.73±0.49	37.28±0.98	39.29±1.02	40.13±1.57
Σ SFA ¹	32.7±0.46	37.91±0.86	36.77±0.74	30.26±1.19
Σ MUFA	58.74±0.81	77.49±2.11	60.7±1.91	56.91±2.16
Σ C18 n-6 PUFA	17.12±0.34	20.88±0.59	2.41±0.09	14.05±0.56
Σ n-6 HUFA	15.58±0.16	8.56±0.45	2.49±0.08	9.75±0.29
Σ C18 n-3 PUFA	3.3±0.11	3.99±0.21	1.4±0.07	2.67±0.11
Σ n-3 HUFA	41.1±0.63	53.22±1.35	70.86±1.87	50.73±2
n-3/n-6	1.36±0.01	1.95±0.06	14.75±0.09	2.24±0.01
n-3 HUFA/n-6 HUFA	2.64±0.04	6.26±0.45	28.42±0.39	5.2±0.05
Total fatty acids	168.54±2.39	202.05±4.74	174.63±4.76	164.37±6.3

For each condition, three independent samples were analysed and results are expressed as mean values ± SEM. ¹See abbreviations Table 4. ² CoSMos, “Conservatoire du Saumon Mosan”.