

European Union Reference Laboratory for Fish and Crustacean Diseases

NATIONAL INSTITUTE OF AQUATIC RESOURCES, TECHNICAL UNIVERSITY OF DENMARK

EURL-Crustacean work done in 2021

Morten Schiøtt, Argelia Cuenca, Teena V. Klinge, Niccoló Vendramin, Niels Jørgen Olesen





Niels Jørgen Olesen



Niccoló Vendramin



Argelia Cuenca



Tine Iburg



Lone Madsen



Morten Schiøtt Senior scientist and Coordinator



Teena Klinge



1-1 Organise and prepare for the 12th Annual Workshop



Report of the

12th Annual Workshop of the National Reference Laboratories for Crustacean Diseases

> Kgs. Lyngby, Denmark June 2nd 2021



Organized by the European Union Reference Laboratory for Fish and Crustacean Diseases,
National Institute of Aquatic Resources, Technical University of Denmark, Kgs. Lyngby



Report of

Special session for NRL's on new Animal Health Law

31st of May 2021

National Institute of Aquatic Resources Technical University of Denmark 2800 Kgs. Lyngby, Denmark





Organized by the European Union Reference Laboratory for Fish and Crustacean Diseases, National Institute of Aquatic Resources, Technical University of Denmark, Kgs. Lyngby



1-2 Organise scientific working group meetings

European Union Reference Laboratory for Fish and Crustacean Diseases
NATIONAL INSTITUTE OF AQUATIC RESOURCES, TECHNICAL UNIVERSITY OF DENMARC

Working groups reports on listing susceptible species to infection with listed fish and crustacean diseases, respectively were updated

SCIENTIFIC OPINIONS AND RECOMMENDATIONS FOR LISTING FISH SPECIES SUSCEPTIBLE TO INFECTION WITH LIST A, C AND E DISEASES ACCORDING TO EU/2018/1882

Expert group on listing species susceptible or vectors for EU listed Aquatic Animal diseases

Niels Jorgen Olesen Niccolo Vendramin Edimind Peeler Coordinator of the EURL for MSc MRCVS Professor fish and crustacean diseases Epidemiologist Public Sector Consultancy Myndighedsbetjeningssekretari Unit for Fish and Shellfish Diseases Aquatic Posts and Pathogens, Barrack Road, Weymouth, Durset, EU Reference Laboratory for Fish DTU Aqua - Denmark DT4 8UB - UK and Crustacean Diseases niven@acua.dtu.dk ed.peelen@cefns.co.uk OIE Reference laboratory for VHS -Dennurk riol@aona.dtu.d Anna Toffan, DVM PhD Thierry MORIN Atle Lillehaus National Reference Laboratory for Fish Unit Viral Fish Diseases. Senior scientist National Reference Laboratory Research Section - Biosicurity and for listed Fish Diseases, French Istituto Zooprofilattico Sperimentale New Diseases delle Venezie Agency for Food, Norwegian Veterinary Institute Oslo - Norway Viale dell'Università 10, 35020 Environmental and Occupational Health & Safety Legnaro (Padova) - Italy - France Thierry.MORIN@anses.fr MEMBERS OF THE EXPERT GROUP Morten Schiott

EXPERT GROUP REPORT

Senior Researcher

Shellfish Diseases

Kemitorvet Bygning 202

DTU AQUA - Unit for Fish and

DK-2800 Kgs. Lyngby - Denmark

MEMBERS OF THE EXPERT GROUP

ON ASSESSMENT OF CRUSTACEAN SPECIES SUSCEPTIBLE TO INFECTION WITH LIST A AND C DISEASES ACCORDING TO EU/2018/1882

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NRL for Fish Molluse and

Crustacean Diseases Istituto Zooprofilattico

Dr Niccolo Vendramin
Senier Researcher
Coordinator of the FURL for fish
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Kenitorve Bynning 202
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1-2 Organise scientific working group meetings

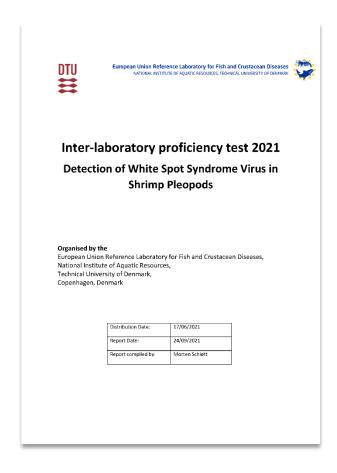
Working group on Diagnostic manual for WSSV Participants:

- EURL: (Morten Schiøtt, Argelia Cuenca and Niels Jørgen Olesen)
- IZSVe (Tobia Pretto)
- CEFAS (Kelly Bateman and Grant Stentiford)
- AAHL, Geelong ACDP (Nick Moody and Peter Mohr)



1-3 Organise Proficiency tests

PT21 WSSV: 26 laboratories in 18 EU Member States
PT21 TSV & YHV: 17 laboratories in 12 EU Member States







1-4 Novel molecular methods

For the EURL to have molecular diagnostic methods of the highest scientific standards and to be able to provide these methods to all Member State NRLs.

In 2021 the following new diagnostic PCR methods were introduced in the laboratory:

RT-qPCR for IMNV

qPCR for IHHNV

qPCR for AHPND



2-1 Training:

Facilitate and provide training in laboratory diagnosis:

EURL training courses Kgs. Lyngby, October 18th – 22nd 2021

Course 2: Introduction to histopathology in fish and crustacean diseases

European Union Reference Laboratory for Fish and Crustacean Diseases
NATIONAL INSTITUTE OF AQUATIC RESOURCES, TECHNICAL UNIVERSITY OF DENMARK

EURL Training Course on Introduction to histopathology in fish and crustacean diseases

Copenhagen, October 18th - 22th 2021

Hosted by the European Union Reference Laboratory for Fish and Crustacean Diseases

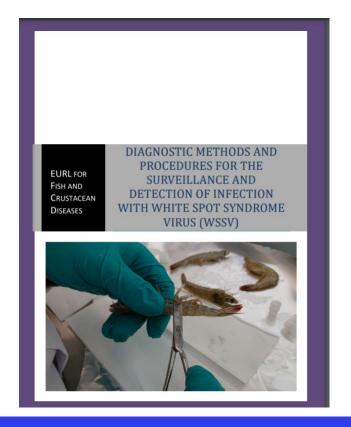
The course is accredited to grant ECTS at PhD level to the participants.



3. TO PROVIDE SCIENTIFIC AND TECHNICAL ASSISTANCE TO THE EUROPEAN COMMISSION AND OTHER ORGANISATIONS

3.1. Diagnostic manuals.

To have updated diagnostic manuals for all listed crustacean diseases available for Member State NRLs on the EURL website www.eurl-fish-crustacean.eu.



DTU Aqua EURL work done and planned



THE 3.2. Survey and diagnosis. "collate and forward information on exotic and endemic diseases, that are potentially emerging in Community"

Surveillance and diagnostics of crustacean diseases in Europe

Morten Schiøtt



4. REAGENTS AND REFERENCE COLLECTIONS

4.1. Pathogen library. For the EURL for fish and crustacean diseases to have an updated library of crustacean pathogens relevant for the EURL and Member State NRLs.

Please help us updating the repositories, in order to maintain an EU wide repository of Fish and Crustacean pathogen isolates.



Annex 4.2 Reagents received at the EURL for fish and crustacean diseases in 2020

Country	Name	Institute	Date of receipt	Material	Amount	Protocol No.	Purpose
Norway	Espen Rimstad	Norwegian University of Life Sciences (NMBU)	09.01.2020	Fish - hole	2	20-356	Research
Northern Ireland	Paul Savage	Agri-food and Biosciences Institute	15.01.2020	Fishskin	6	20-518	Confimation of MLO by Q- PCR
Croatia	Sujezana Zmcic	"Croatian Veterinary Institute Laboratory for Fish and Molluscs diseases"	12.05.2020	Cellsupematant Homogenat Cellsupematant 1st pass	2 trials 2 tubes 2 tubes	20-3660	Confimation of IHNV
Norway	Mona Gjessing	Norwegian Veterinary Institute Section for Fish Health and Biosecurity	26.05.2020	Gill Kidney	1 tube 1 tube	20-4093	Confination KHV (and CEV)
Norway	Hame Nielson	Norwegian Veterinary Institute Fish diseases bacteriology and pathology	19.06.2020	Gill in RNAlater	4 tubes	20-4943	To be tested for CEV
Norway	Mona Gjessing	Norwegian Veterinary Institute Section for Fish Health and Biosecurity	01.09.2020	Skin Gill Kidney	1 tube 1 tube 1 tube	20-7026	To be tested for CEV and KHV
Norway	Torfinn Moldal	Norwegian Veterinary Institute Virology	29.09.2020	Purified DNA/RNA	2 tubes	20-7863	Confirmation of KHV and CEV
Republic of North Macedonia	Aleksadnar Trajchovski	Faculty of veterinary medicine – Skopje (FVMS) Biology and Pathology of Fish, Honey Beet and Wildlife	05.10.2020	RBT fry (whole)	11 tubes	20-8107	Confirmation of IFINV
Italy	Anna Toffan	Istituto Zooprofilattico Sperimentale delle Venezie	10.11.2020	Organs in RNAlater	4 tubes	20-9358	Research VHS vaccination PRV-3 Q-PCR + BKD
Italy	Anna Toffan	Istituto Zooprofilattico Sperimentale delle Venezie	10.11.2020	Organs in RNAlater	3 tubes	20-9359	Research VHS vaccination PRV-3 Q-PCR
France	Nadege Hochart	Copalis Industrie	02.07.2020	Fish feed	4 samples	20-5706	To be tested for WSSV



Country	Name	Intitate	Date of receipt	Material	Amount	Specifics
Releva	Naturila Sai	The Relaxuates State Veterinery Center - ISSIC Description of Vissions and Cell Culture	22.01.2020	FTA Cards	Salk	5 FTA-card - VHIV - BON - SVCV - KGIV - BAN
Hangary	Plac Malik	National Food Chain Safety Office Vistorinary Diagnostic Directorate Laboratory of Virology	14.02.2020	Non-informal fiels calls	2x 2ffedia	- 2 small bettis with one-inflored RF 2 cells - 2x 25 ces* - 2 small bettis with one-inflored RPC cells - 2x 25 ces*
United Kingfore	Nonogeas LK Sample Californion Geome	NOVOGENE (CIC) COMPANY LTD.	01.04.2020	Reported DNA		
Normay	Salamana Hist France	Navagias Vatorinary Institute	04.05.2020	Plicod assure Organs in Formalia Fish facus in RNA later + Pall blood	955 olike 15 besizes 11 beises between 50-90 takes in each	SAV stat, March 2020 Repartmental stat in Atlantic school with SLAV
Farne Islanda	Daha Christianan	Food & Vistorinary Agency (FVA) National Reference Laboratory for Fish Diseases	14.05.3030	Fish tissue in RNA later or RLT buffle Pull blood or serum in RNA later or RLT buffler	10 below between 50-60 tales in each	ISAV trial March 2020 Reperimental trial in Atlantic school with ISAV Also a handful of takes which are the water father in ISLT buffer
Hangwy	Västida Nileselli	National Food Chain Safety Office Food Chain Safety Salesmany Discounted Laboratory of Farasitology, Fish and San Dissame	16.00	Proceedial feb virus	6 ampoxins	1 amposite of: - VHS DK-5151 - SHN 270A - KEN-7P 20 - RISK 868774 - SVC 5679 - ESA General 290

Country	Name	Satitute	Date of receipt	Material	Assess	Specifica
Grouss	Athennin Paper (Secution Action	VETERONARY CENTER OF ATRICAL Department of Publishings of Aquatio Organisms National Laboratory for Fals and Contactors Distates	16.01.2020	Non-informal field colls Cell accomment informal mid-view (VECV) or 1997(V)	In Officials In Officials	 2 world beefer with non-influent OF wills — In 15 or 12 or
Grouse	Atlanacine Propos I Stamptine Arfan	WETERPARTY CENTER OF ATTEMS Department of Pullsdays of Aquatio Organisms National Laboratory for Fish and Creatment Distance	63,47,2929	Lyophilized VHI + IRN	ls 2 aspecia	- 2 amposite of typophizmal SPAV 2014. — with the following other: 1,9x at 7 CEDSWell - SPA 5,8x at 7 CEDSWell - SPA - 2 amposite of typophizmal VESV DE-GDT - with the following other: 2,7x at 7 CEDSWell - SPA 2,1x at 7 CEDSWell - SPA 1,5x at 7 CEDSWell - SPA
Tuly	Assa Toffes	latina Zaconflatios Sociounale dels Veseria	13.07.2020	Feb receive	I take	4 oil alignet of fish vaccion prototype assiste betweeknistes (RCDNV) hand on Virus like naticine –VLP styrmand in years papertir is
Norway	Sakasma Hol France	Norwegies Veterinay Institute	21.07.3030	Spines in RNA later	11) tubes	ISAV trial, Namb 2000 Spines in RNA later from superinsental trial in Atlantic saleson with NAV

70	European Union Re	rference Laborate AGENTIC RESOURCES, 1	ory for Fish and C	rustacean Disease or Devekko	s
Name	Inditate	Date of	Material	Assessed	Speci

Country	Name	Institute	Date of receipt	Material	Assessed	Specifics
France	Linely LOUROUTIN	ANNE French agency for food, conferencement and competitued health address Pleasingue-Pourseil Laboratory / Viral Fish Diseases Unit	21.00.2020	HVA infected cell exp.	Inde	6.7 ml of Hamonicus asserbles (BVA). Feb Sponies European oil Auguilla aspella Colgin: Dessanic Jaconal careller: 207152 2. Passona on EX-1 cells 1. mls 10.05 2007
Dolgaria	Patya Stafanowa Orogona	National Diagnostic and Research Vistorinary Medical Institute National Reference Laboratory for Pish, Medican and Greatmoses Diagnose	25.00.2020	Non-informal Sub-calls	3x25s6s	- 2 small bettis with non-infected BPC sails - 2x 25 sair - 2 small bettis with non-infected CRES-214 sails - 2x 25 sair
Polend	Magdalma Stadesk	National Vistarinery Research Institute, Department of Fish Disease	31.06.2020	Non-informed flets coding	2fela	- 2 small hettin (2x 25 cm²) with non-informat CCB cells.
Canada	Kylo Garver	Fisherine & Oceano Canada Aquatic Asimal Health Section Pacific Biological Station	09.10.2020	Fab Seese is RNAleter	étaku	Rainbow tout fame informé with PRV-3 mond in EVAlute. 18-10000-90: Som Desmark (PRV- 36) with Ct 17.8 18-10000-42: Som Narway (PRV- lay with Ct 18.8 Two miles of each.
Canada	Kyla Garvar	Fisherins & Ounce Counts Associa Animal Fisher Station Pacific Hological Station	16.11.2020	Fish Sense in RNAlater	2 tales	Heart infected with PRV-2 (originate from other actions provided by dr. Takano in Jenus) strend in BYO-Mater 20-256 I and 20-256-2
Press	Linaly LOUBOUTIN	ANTES French agency for fixed, environmental and encapational health artery Proctinges-Proctant Laboratory Visal Pith Diseases Unit	16.11.2020	PAI-mil-HVA	Itale	1 od of Polycioner Rabbit and 470 A. (RVA 20522) Lykewed. Rabbit on. 1884(5)

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ountry	Name	Entitate	Date of receipt	Material	Assess	Specifics		
Spain	Plar Femirale Stenaile	Cantal Veterinary Laboratory Ministry of Agriculture and Patherine and Food	16.11.2020	Audi-VSBI Audi-SBN	I take I take	0,5 ml of Polyclinest Rabbit on File 0,5 ml of polyclinest Rabbit and File		
Italy	Maruo Gallotti	University of Utiliza	27.11.2020	Spines in RNA later	114 tubes	Approx. Strug splean in 500sl RNA later from experimental to involving RMS (Red Mark Syndrome) in careful treet.		

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EURL Workplan 2021-2022

- 1. PT 21 and PT22: Accomplished. Included all 3 listed pathogens WSSV, TSV and YHV1.
- 2. Annual Workshop 2021: virtual access only!. AW 2022 Combined virtual Face to face
- **3. Training course 2022**: a course will be held in wk 42 on histopathology.
- 4. Accreditation of TSV and YHV1 diagnostic PCR methods will be obtained.
- 5. Scientific assessment of the effect of pooling samples for surveillance and diagnostics by PCR and provision of guidelines on how to pool.
- **6. Establishment of facility** for maintaining permanent stock of shrimp.
- **7. Diagnostic Manuals** will be prepared and made ready for upload on www.eurl-fish-crustacean.eu:
 - i. Infection with WSSV, done.
 - ii. Infection with TSV will be updated and aligned with the OIE Aquatic Manual, pending.
 - iii. Infection with YHV will be updated and aligned with the OIE Aquatic Manual, Pending.



EURL Workplan 2023-2024

2-year program

- **1. PT23 and 24: T2**: No major changes for listed diseases expected. *Aphanomyces astaci* may be included.
- **2. Annual Workshop 2023**: Virtual? face to face? or a combination?.
- **3. Training course(s) 2023**: New topics for training courses? E.g. in epidemiology?
- **4. Quality assurance**: provide help for implementing in NRL's (SOPs, visits etc.)
- **5. Diagnostic methods**: Implementation of additional diagnostic methods of crustacean diseases
- 6. Scientific assessment of the effect of pooling samples for surveillance and diagnostics by PCR and provision of guidelines on how to pool.
- 7. Upgrade facility for maintaining permanent stock of shrimp (and other crustaceans?).
- 8. Further update of Diagnostic manuals
- 9. Proposals for topics are VERY welcome!



14th Annual workshop 2023?

1/2 31st May + 1st June 2023 at DTU Aqua in Lyngby, (Wednesday and Thursday) Denmark. Face to face and virtual or a combination?

Three workshops back to back, on fish and crustacean diseases, respectively and a closed session for the NRLs in EU and EFTA.







End of 13th Annual workshop of NRL's for Crustacean Diseases 2022

Important! Please give us feed back as soon as possible by filling the evaluation scheme send to all of you.

Upon request we will send you a signed certificate of participation.

Thank you for all the excellent presentations, valuable questions and contributions and for participating in this workshop

We are looking forward seeing you soon again Hopefully face to face ©!

