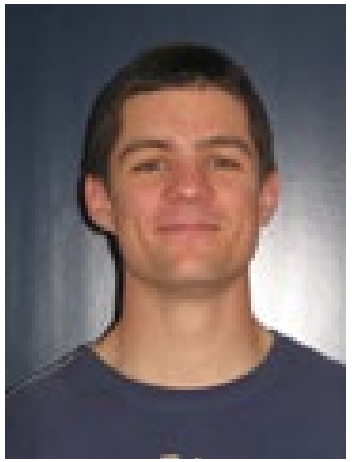
European Union Reference Laboratory for Fish and Crustacean Diseases

NATIONAL INSTITUTE OF AQUATIC RESOURCES, TECHNICAL UNIVERSITY OF DENMARK

EURL-Fish work done in 2020

Niels Jørgen Olesen

Niels Jørgen Olesen



Niccoló Vendramin

Argelia Cuenca

Tine Iburg

Lone Madsen

Jacob G,. Schmidt

Morten Schiøtt

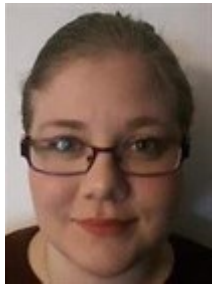
Anna L. F. Alencar

Sofie Barsøe

Juliane Sørensen

Valentina Donati

Camilla Priess



Kristina Andkjær Andersen

Betina Lynerup

Christina Flink Desler

Anne Marie Nordvig Petersen

Teena Klinge

Kári Karbech Mouritsen

Niels Lorenzen

Professor

Dagoberto Sepulveda

Post Doc.

Jakob Skov

Post Doc.

Irina Vardia

Technician

Inger Dalsgaard

Ass. Professor

Retired emeritus

EURL-Fish work program 2019-2020

5 main objectives:

- **1. TO ENSURE AVAILABILITY AND USE OF HIGH QUALITY METHODS AND TO ENSURE HIGH QUALITY PERFORMANCE BY NRLs.**
- **2. TO PROVIDE SCIENTIFIC AND TECHNICAL ASSISTANCE TO NRLs**
- **3. TO PROVIDE SCIENTIFIC AND TECHNICAL ASSISTANCE TO THE EUROPEAN COMMISSION AND OTHER ORGANISATIONS**
- **4. REAGENTS AND REFERENCE COLLECTIONS**
- **5. REQUIREMENTS RELATED TO OTHER LEGISLATION**

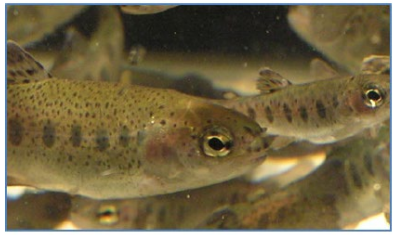
1-1 Organise and prepare for the 24th Annual Workshop for Fish diseases

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

Report of the

24th Annual Workshop of the National Reference Laboratories for Fish Diseases

Kgs. Lyngby, Denmark
November 4th – 5th 2020



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

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

Report of

Special session for NRL's on new Animal Health Law

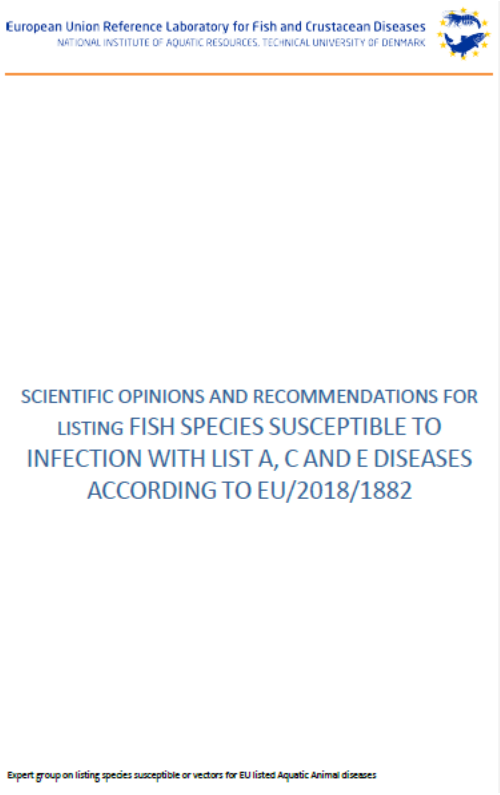
4th November 2020

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

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


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

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


MEMBERS OF THE EXPERT GROUP

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EU Reference Laboratory for Fish and Crustacean Diseases
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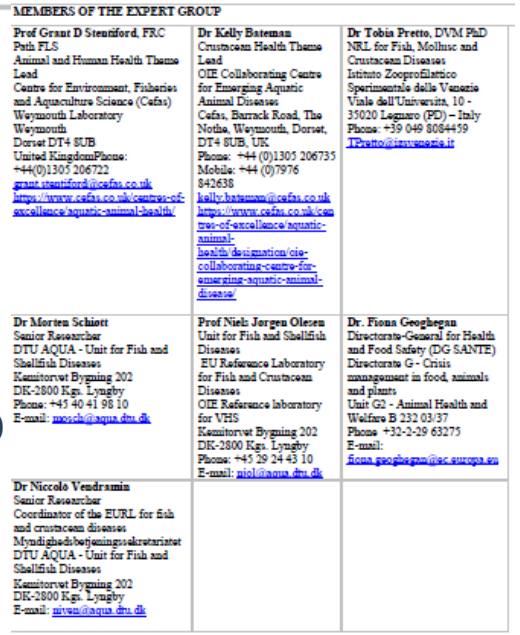
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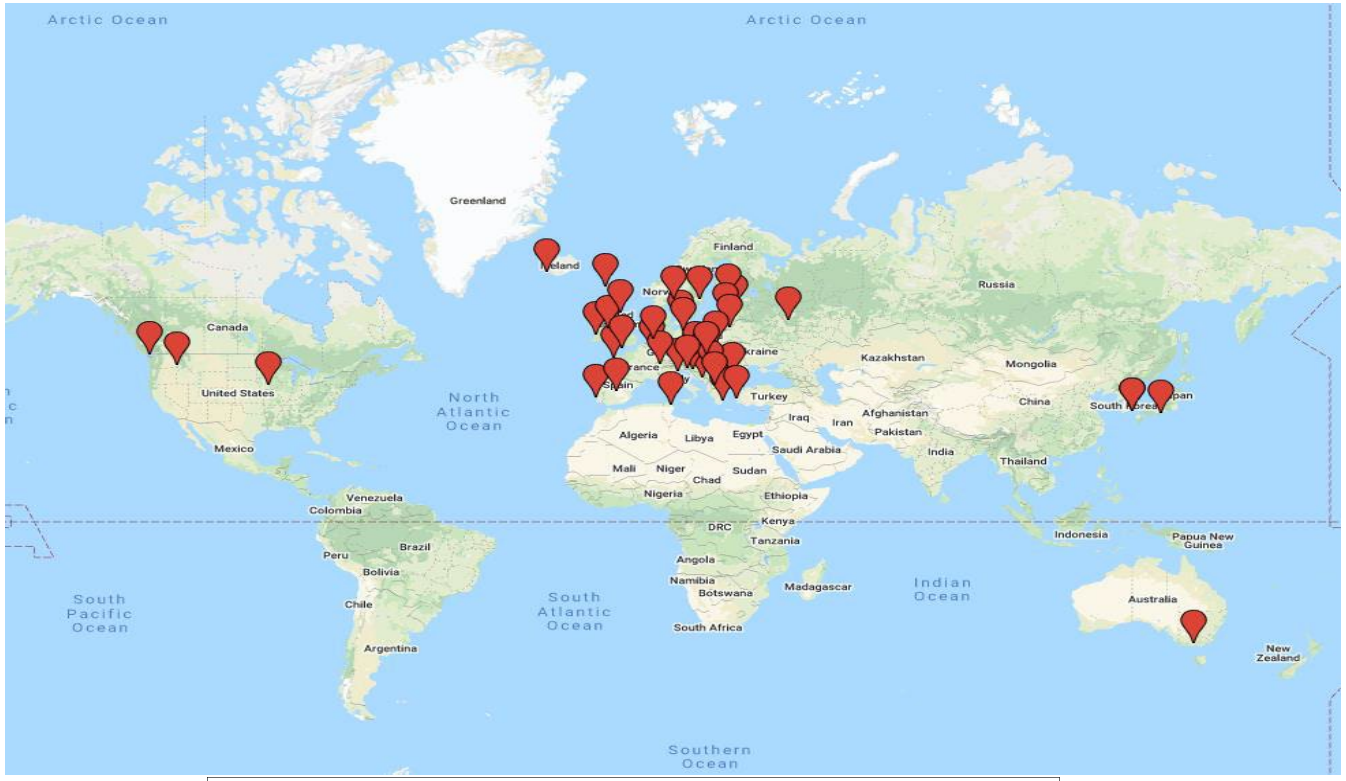
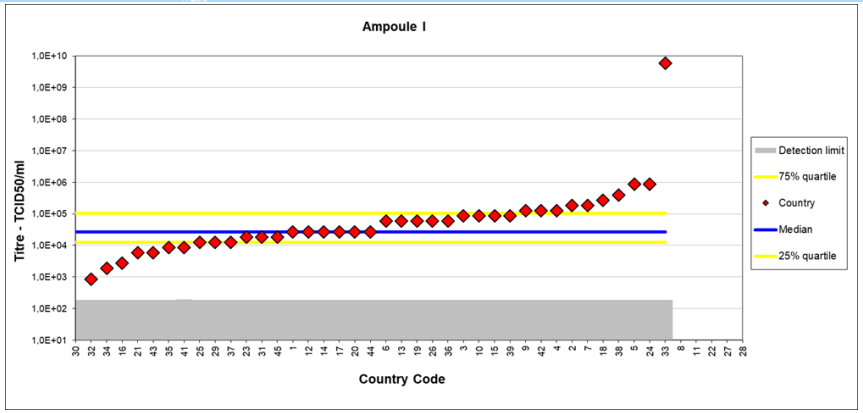
EXPERT GROUP REPORT

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

1-3 Organise Proficiency tests

PT1 and PT2, 44 and 43 laboratories respectively participated





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

EURL for Fish Diseases

Report of the Inter-Laboratory Proficiency Test 2020

for identification and titration of

VHSV, IHNV, EHNV, SVCV and IPNV (PT1)

and identification of

CyHV-3 (KHV), SAV and ISAV (PT2)

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

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 2020 the following new diagnostic PCR methods were introduced in the laboratory:

RT-qPCR for PRV-3

PCR for CEV for sequencing

qPCR for detection of Yellowhead Virus Genotype 1

qPCR for White Spot Syndrome Virus has been accredited

RT-qPCR for Infectious Haematopoietic Necrosis Virus in one-step reaction has been accredited

Manuscript published:

"Analytical validation of one-step real-time RT-PCR for detection of infectious hematopoietic necrosis virus (IHNV)" Argelia Cuenca[1]*, Niccolò Vendramin[1], Niels Jørgen Olesen[1]

2-1 Training:

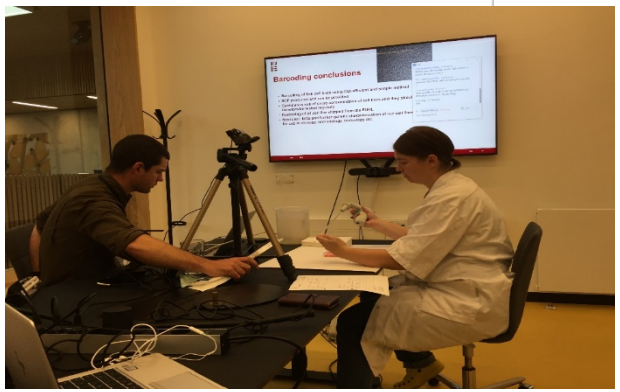
Facilitate and provide training in laboratory diagnosis:

EURL training course Copenhagen, October 5th - 9th 2020

Course 1: Methods for implementation of surveillance procedures for listed fish diseases

Course 2 was cancelled due to COVID19: I

The two courses are accredited to grant ECTS at PhD level to the participants.

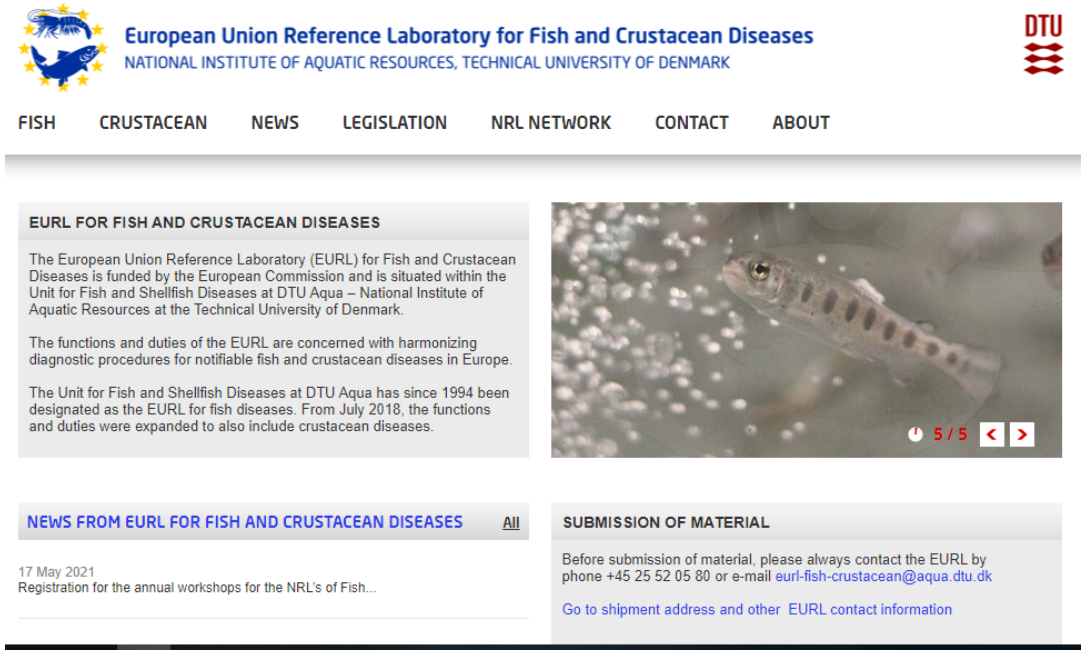


Sub-activity 2.2 Webpage

To provide the Member State NRLs with a fast entrance to information from the EURL.

www.eurl-fish-crustacean.eu

The EURL website has gone through a substantial re-structuring and update. It now compiles the information on the activities by both the EURL for fish and crustacean diseases. The website has been accessed 5.445 times; 17.210 pages have been accessed in 2020.



2.3. FishRefLabNet.

To ensure that relevant and important information rapidly can get from the EURL directly to the Member State NRLs.

The e-mail list FishRefLabNet have been continuously updated during 2020 and now contain 167 people with interest in our work. The list also includes all the NRL contacts for the Crustacean Diseases.

2.5. International conferences and meetings

To keep the EURL updated on the newest scientific information on emerging and listed exotic and non-exotic fish and crustacean diseases, and to disseminate knowledge and scientific data provided by the EURL.

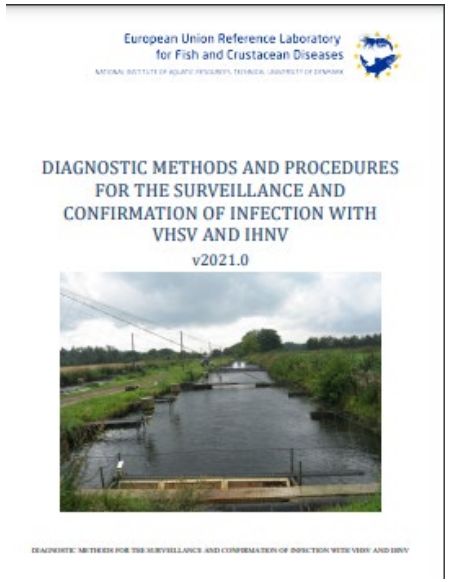
Due to COVID19 the EURL team only attended and contributed with scientific talks to few international conferences and meetings within the field in 2020.

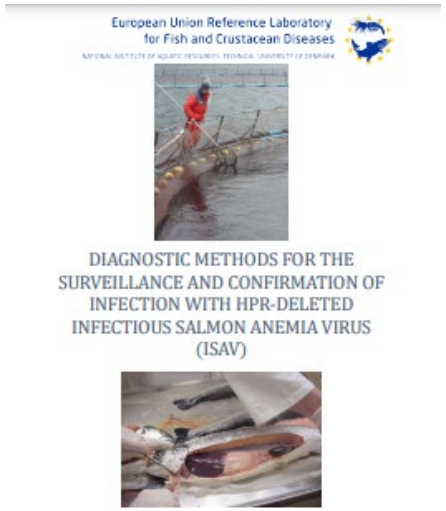
The Unit with EURL team members authored 20 publications in Peer-reviewed journals.

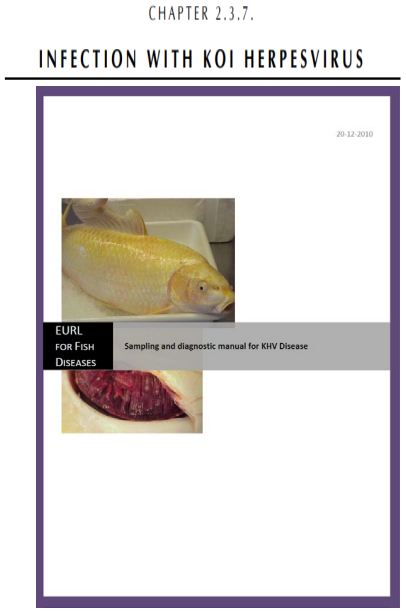
3. TO PROVIDE SCIENTIFIC AND TECHNICAL ASSISTANCE TO THE EUROPEAN COMMISSION AND OTHER ORGANISATIONS

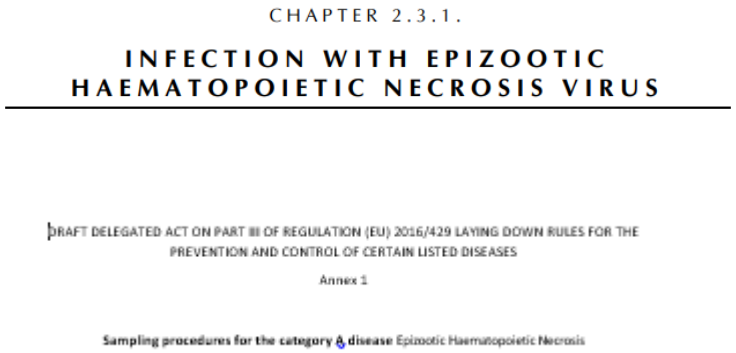
3.1. Diagnostic manuals.

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







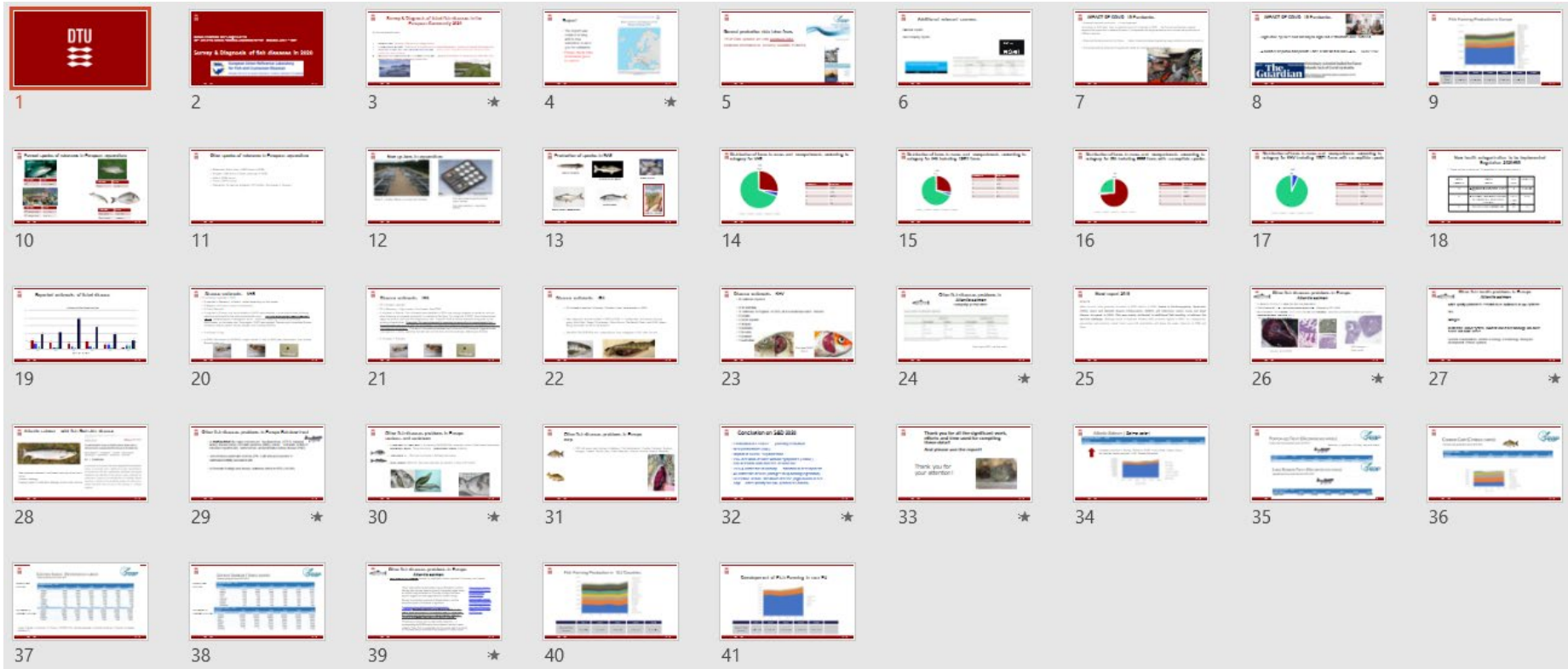


3.2. Survey and diagnosis. “collate and forward information on exotic and endemic diseases,that are potentially emerging in Community”


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

Report on Survey and Diagnosis of Fish Diseases in Europe 2020

DISCLAIMER The EURL for Fish and Crustacean Diseases and the EU commission have no liability for the accuracy of the information and cannot be held liable for any third-party claims or losses of any damages related to this report.



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.

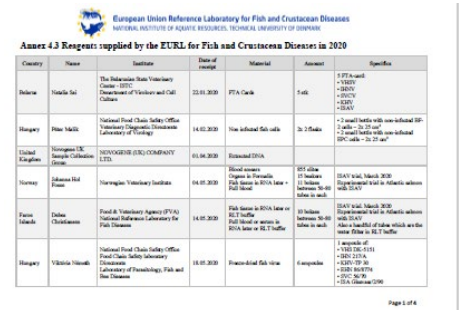
Material received from 6 countries in 11 parcels and shipped to 10 in 20 parcels

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

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

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	Snježana Zrnčić	"Croatian Veterinary Institute Laboratory for Fish and Molluscs diseases"	12.05.2020	Cellsupernatant Homogenat Cellsupernatant 1st pass	2 vials 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	Confimation KHV (and CEV)
Norway	Hanne Nielsen	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	Aleksandar Trajchovski	Faculty of veterinary medicine – Skopje (FVMS) Biology and Pathology of Fish, Honey Bees and Wildlife	05.10.2020	RBT fry (whole)	11 tubes	20-8107	Confimation of IHNV
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	Nadège Hochart	Copalis Industrie	02.07.2020	Fish feed	4 samples	20-5706	To be tested for WSSV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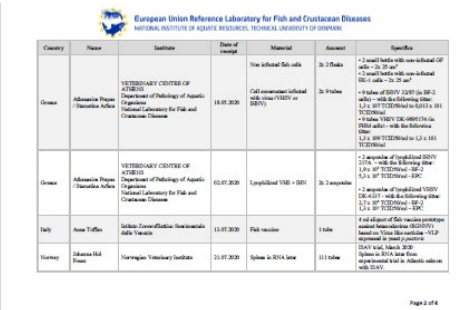
Annex 4.3 Reagents supplied by the EURL for Fish and Crustacean Diseases in 2020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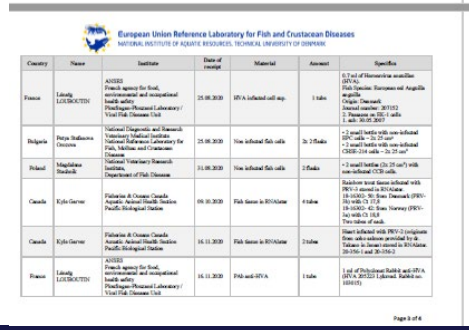
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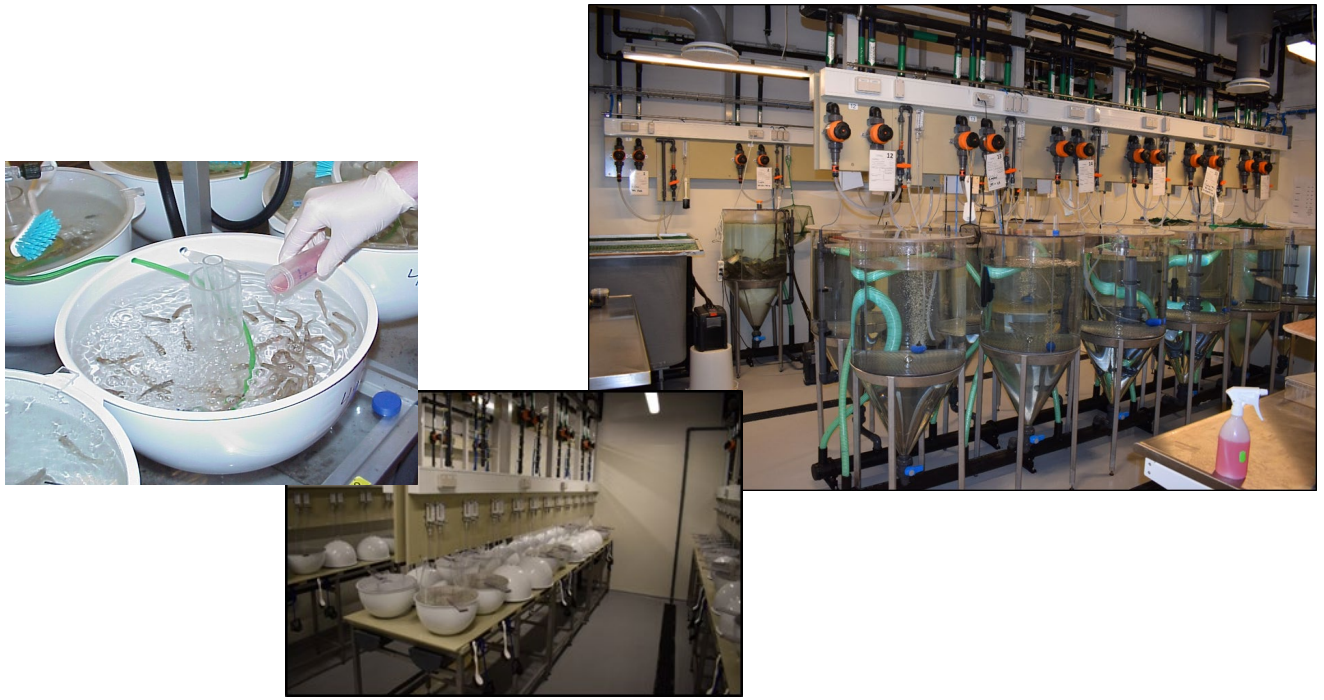
4.2. Pathogen characterization.

For the EURL to be able to identify and characterize isolates of listed viral fish pathogens on request from the Member State NRLs.

Support to NRLs in molecular characterization of IHNV isolates occurring in their country.



4.1 The database www.fishpathogens.eu

To have an updated database of all serious viral fish pathogens in the EU.

Albeit the work put into the development, maintenance and curation of the databases, the statistics of the access to the fishpathogens website show that there is a low interest from the international community to submit records to the databases, and to use the information provided on it.

It was therefore decided to remove the databases for IHNV, SAV and Betanodavirus from the main Fish pathogen databases. The part regarding VHSV will be maintained for internal use and for sharing upon request.

25th Annual workshop

31st May + 1st-2nd June 2021 all virtual!

Three workshops back to back, on fish and crustacean diseases, respectively.

EURL Workplan 2021

Only a 1-year program

1. **PT 1 and PT2**: No major changes
2. **Annual Workshop 2021**: virtual access only!.
3. **Training course(s) 2021**: two virtual courses will be held in wk 41 and/or 42 one on diagnostic procedures and one on histopathology.
4. **Emerging fish diseases** (like POMV-infection, CMS in salmonids, TiLV in tilapia) will be studied
5. **Scientific assessment of the effect of pooling samples for surveillance and diagnostics by PCR and provision of guidelines on how to pool.**
6. All **Diagnostic Manuals** will be updated and ready on www.eurl-fish-crustacean.eu by 21st April 2021:
    i. Infection with HPR-deleted ISAV is finalised, Done
    ii. VHS and IHN finalized and uploaded, Done
    iii. Infection with KHV will be updated - delayde
    iv. Infection with EHNV will be updated and aligned with the OIE Aquatic Manual delayed.

EURL Workplan 2022??

1 or 2-year program

1. **PT 1 and PT2**: No major changes maybe change of material from cell culture to tissue from infected fish.
2. **Annual Workshop 2022**: This time MUST be face to face or a combination!.
3. **Training course(s) 2022**: two face-to face courses will be held in wk 41 and/or 42 one on diagnostic procedures and one on histopathology.
4. **Quality assurance**: provide help for implementing in NRL´s (SOPs, visits etc.)
5. **Emerging fish diseases** (What to come?) The new development of IHN in EU shall be addressed carefully and will be studied- herunder update of the diagnostic procedures (RT-qPCR)
6. **Scientific assessment of the effect of pooling samples for surveillance and diagnostics by PCR and provision of guidelines on how to pool.**
7. **Use of fetal calf serum concentration for propagating virus**
8. **Further update of Diagnostic manual**
9. **Proposals for topics are VERY welcome!**

26th Annual workshop

30th and 31st May + 1st June 2022 at DTU Aqua in Lyngby, Denmark. Likely a combination of face to face and virutual.

Two workshops back to back, on fish and crustacean diseases, respectively. Maybe again a closed session for te NRLs in EU and EFTA.

End of 25th Annual workshop of NRL´s for Fish Diseases 2021

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 ☺ !