European Union Reference Laboratory for Fish and Crustacean Diseases

NATIONAL INSTITUTE OF AQUATIC RESOURCES, TECHNICAL UNIVERSITY OF DENMARK

EURL-Fish and Crustacean work done in 2019/20

Niels Jørgen Olesen

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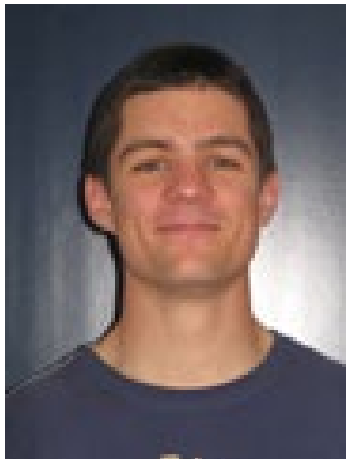

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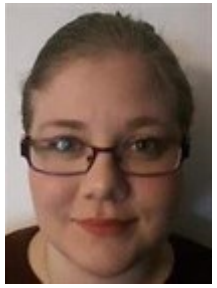

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EURL-Fish work program 2019-2020

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 23rd Annual Workshop

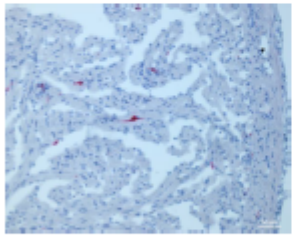
European Union Reference Laboratory for Fish and Crustacean Diseases
NATIONAL INSTITUTE OF AQUATIC RESOURCES, TECHNICAL UNIVERSITY OF DENMARK

Report of the

23rd Annual Workshop of the National Reference Laboratories for Fish Diseases

Kgs. Lyngby, Denmark

May 27th – 28th 2019



ISH staining of PRV-3 in Rainbow trout heart tissue

European sea bass infected with VHS

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

A W.G. was organized on ISA with participation from UK, FO, NO and DK

Report from

Meeting on

Sampling and diagnostic procedures for the surveillance and confirmation of Infectious Salmon Anaemia ISA

Lyngby December 5-6th 2019

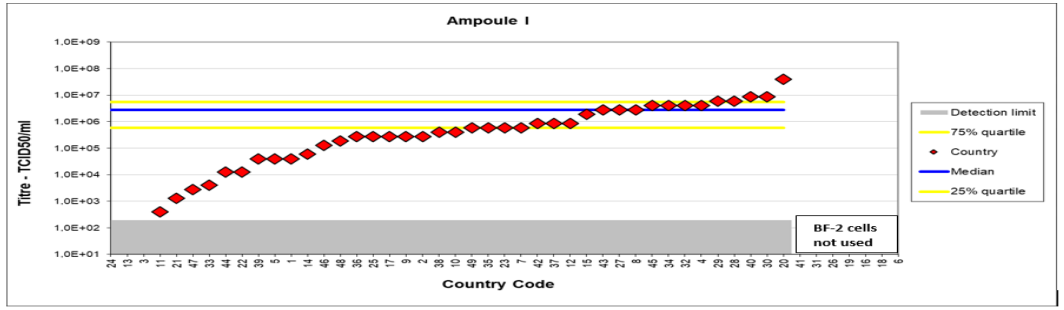
DIAGNOSTIC METHODS FOR THE SURVEILLANCE AND CONFIRMATION OF INFECTION WITH HPR-DELETED INFECTIOUS SALMON ANEMIA VIRUS (ISAV)

In the front page, on the top left, collection of clinically affected specimen in a net pen during fish farm visit.

On the bottom right, necropsy of clinically affected Atlantic salmon during ISA outbreak, severe congestion of liver, enlargement of spleen, signs of anaemia of the heart.

1-3 Organise Proficiency tests

PT1 and PT2, 42 and 38 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 2019

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

DANAK
PT Reg. no.: 515

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.

1. qPCR for Candidatus Midichloriaceae – main aetiological agent of Red Mark Syndrome in Rainbow trout
2. RT-qPCR for Infectious Haematopoietic Necrosis Virus in one-step reaction has been implemented and validated including proficiency test with 8 participating NRLs.

Manuscript submitted:

"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 courses Copenhagen, October 7th - 18th 2019

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

Course 2: Introduction to histopathology in fish and crustacean diseases

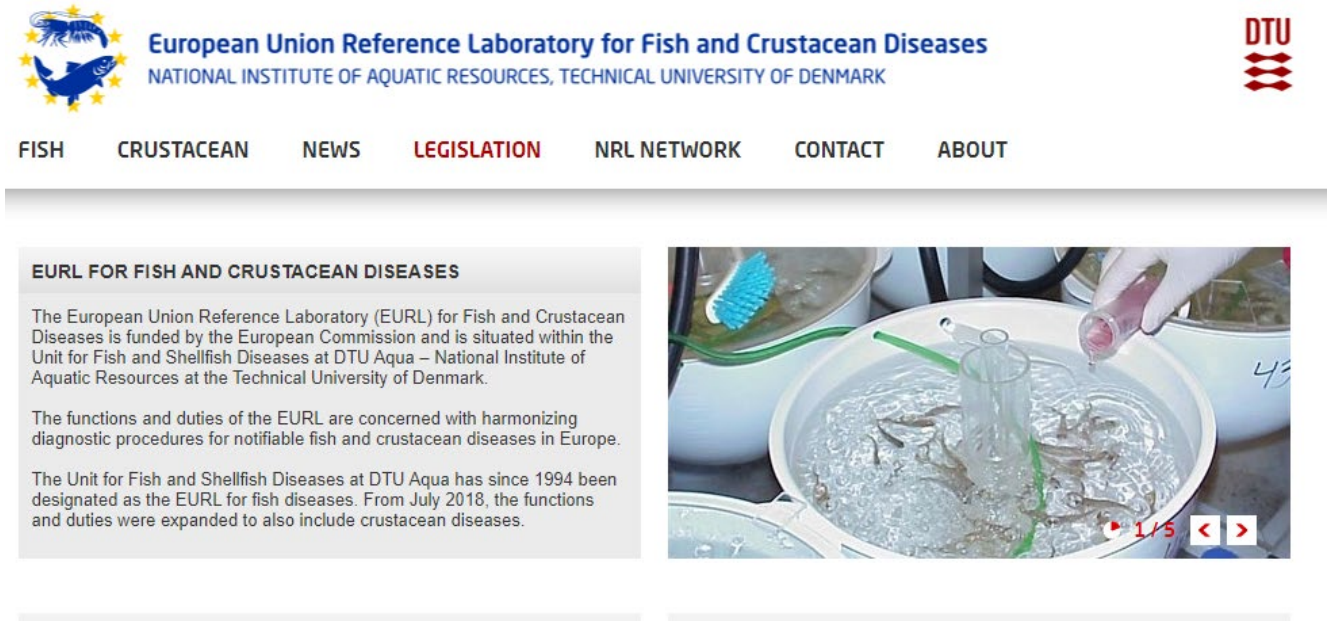
The two courses are now accredited to grant ECTS at PhD level to the participants.

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 4.448 times; 14.028 pages have been accessed from January to October 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 2019 and now contain 167 people with interest in our work. The list now 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.

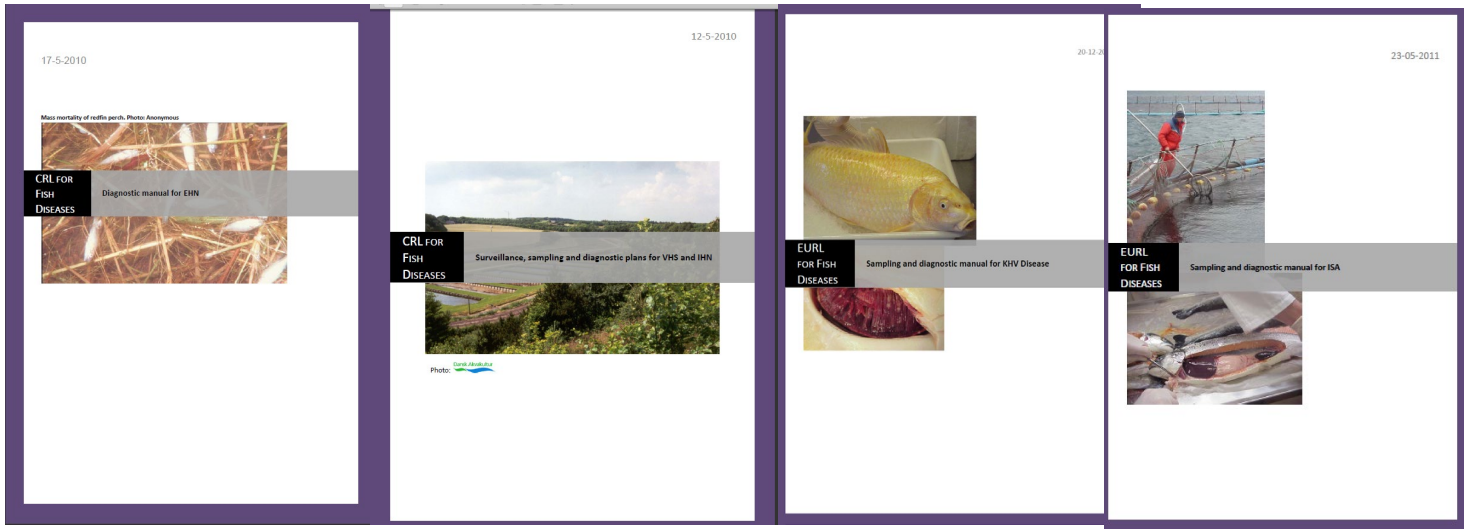
The EURL team has attended and contributed with scientific talks to a number of international conferences and meetings within the field.

EURL employees and members of the fish and crustacean unit at DTU participated in 14 international meetings and conferences and gave 38 oral presentations. The Unit 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.

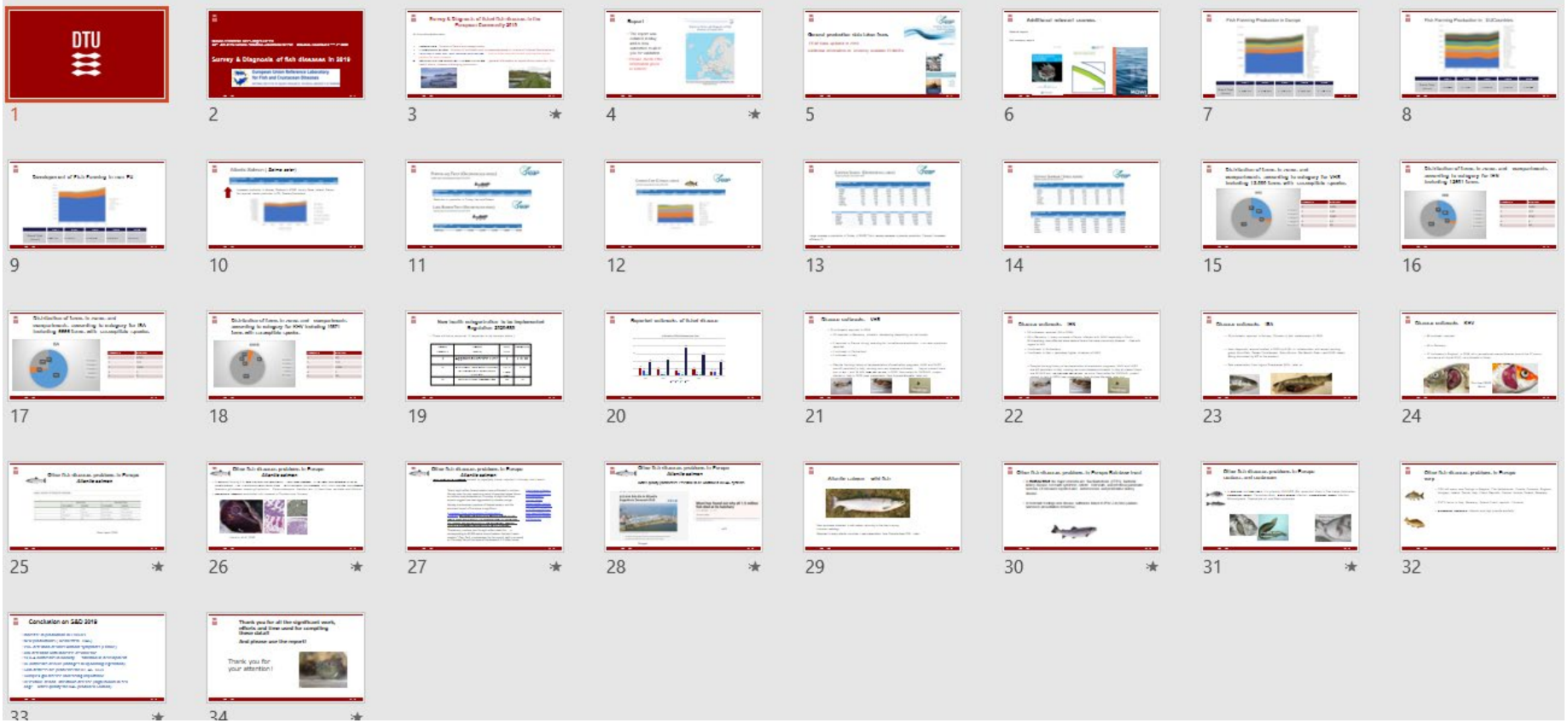


3.2. Survey and diagnosis. “collate and forward information on exotic and endemic diseases,that are potentially emerging in Community”


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 2019

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

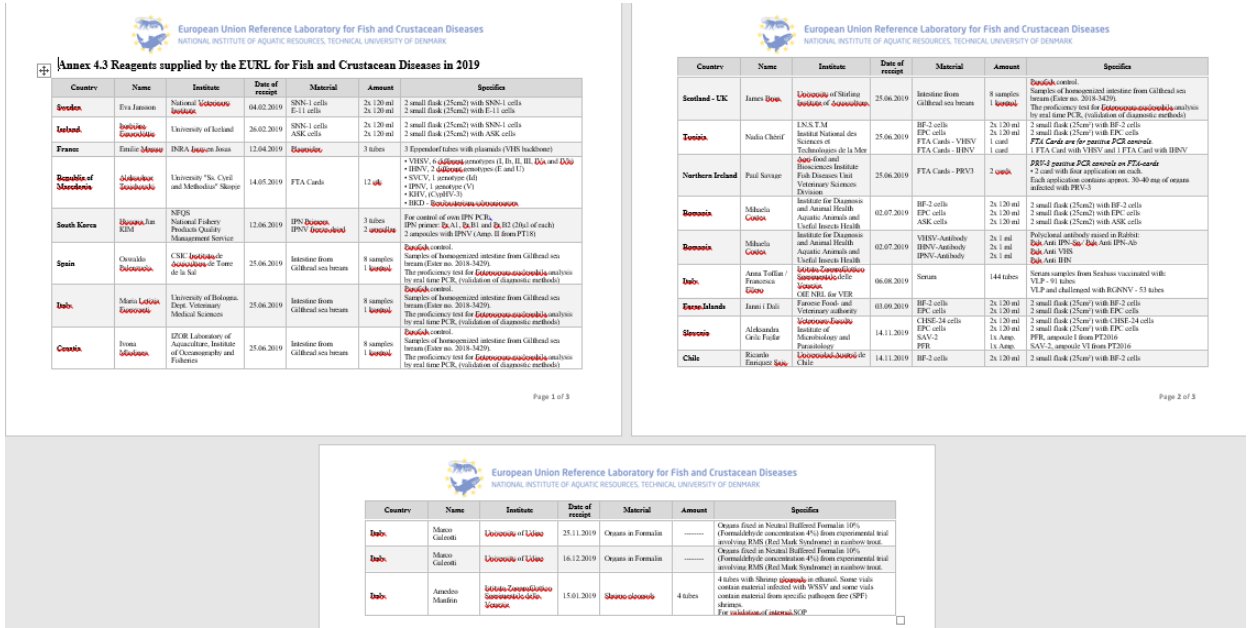
4.1. Pathogen library. For the EURL for fish and crustacean diseases to have an updated library of crustacean pathogens relevant for the EURL and Member State NRLs.

Material received from 5 countries in 9 parcels and shipped to 15 in 20 parcels

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

Annex 4.2 Reagents received at the EURL for fish and crustacean diseases in 2019

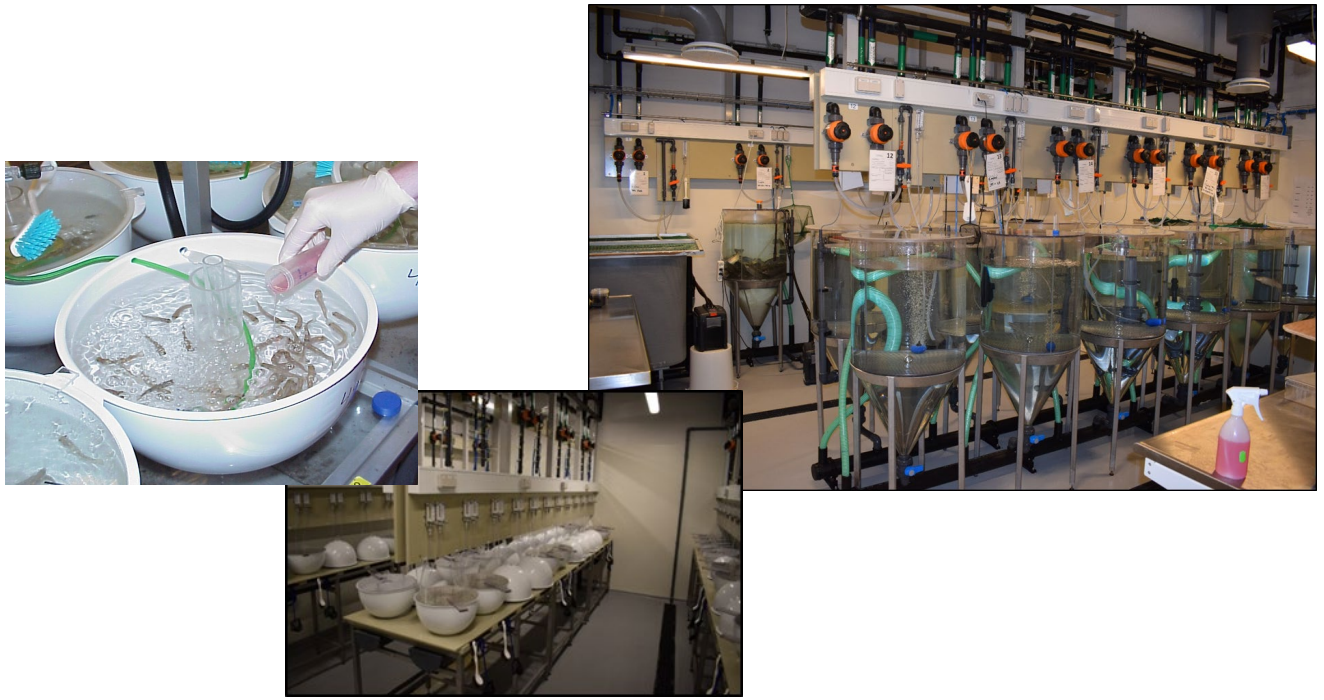
Country	Name	Institute	Date of receipt	Material	Amount	Protocol No.	Purpose
Ireland	Felix Scholz	FishVet Group Ireland	16.01.2019	Fish tissue in RNAlater	9 tubes	19-878	PMCV. Research. Screening of Salmon virus
Ireland	Felix Scholz	FishVet Group Ireland	07.03.2019	Hearts from Atlantic salmon	11 tubes	19-878	PMCV positive hearts for trial
Ireland	Felix Scholz	FishVet Group Ireland	07.03.2019	Gills from Atlantic salmon	6 tubes	19-5326	AGD - Ring Test Parafish Control
Sweden	Eva Blomkvist	National Veterinary Institute	13.03.2019	Celle supernantant infected with IPNV	2 tubes	19-3291	To have in stock
The Netherlands	Olga Haenen	Wageningen Bioveterinary Research of Wageningen UR	29.03.2019	Celle supernantant infected with IHNV	1 vial	19-5429	To have in stock (IHNV panel)
Serbia	Vladimir, Ivan Radosavljevic	Institute of Veterinary Medicine of Serbia Department of Fish Diseases	28.05.2019	Celle supernantant	1 tube	19-8000	Confirmation of IHNV
Norway	Torfinn Moldal	Norwegian Veterinary Institute	16.07.2019	Fish tissue in RNAlater Fish tissue homogenate	2 vials 2 vials	19-9736	Verification of KHV
Norway	Britt Gierset	Norwegian Veterinary Institute	24.09.2019	Fish tissue in RNAlater	2 tubes	19-11951	Verification of CEV
Norway	Maren Gagnat	Cfeed AS	04.10.2019	Copepod in Rnalater	2 tubes	19-12315	Diagnostic (PCR: TSV, WSSV and YHV)



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.

A number of full genome sequences for VHSV (around 50) were added to the database, along with continuing in the process of curating the existing records in the VHSV database.

The databases are published but nobody beside the EURL upload isolates on it. And very few visit it.

Internal discussions and considerations whether the database should be closed or not.

If closed a full copy of the database will still be accessible on our Web but it will no longer be maintained and updated

EURL Workplan 2021?

Most likely only a 1-year program

1. PT 1 and PT2: No major changes foreseen
2. Annual Workshop 2021: Hopefully face-to-face or combined with virtual access.
3. Training course(s) 2021 Hopefully face-to-face in wk 41 and/or 42
4. Emerging fish diseases (like POMV-infection, CMS in salmonids, SAV-2 in EU) 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,
    ii. VHS and IHN will be separated into two and updated,
    iii. Infection with KHV will be updated
    iv. Infection with EHNV will be updated and aligned with the OIE Aquatic Manual

25th Annual workshop?

Hopefully physical meeting at DTU Campus in Kgs- Lyngby, Denmark 1st-3rd June 2021

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

Large meetings may not be held face to face in the first half of 2021, therefore alternative dates could be September 21-23, 2021 (EAFP Conference 30th August-2nd September).

Possibilities for organizing combinations of virtual and face to face meeting will be assessed

End of 24th Annual workshop of NRL´s for Fish Diseases 2020

A Special joint session for NRL's Fish and Crustacean Diseases on the new EU Animal Health Law will follow at 11.40 to 13.00, Please access to this meeting through the Zoom invitation.

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 ☺ !