

## EURL-Fish in 2012

### EURL-Fish work done in 2012

Turbulent year due to the decision of closing the laboratory in Aarhus rapidly and moving the function to Copenhagen

*Niels Jørgen Olesen, Niccolò Vendramin, Nicole Nicolajsen, Helle Frank Skall, Susie Sommer Mikkelsen, Anemone Olaja and Torsten Boutrup*

National Veterinary Institute





National Veterinary Institute

5

**The Fish1+2 Team**

Helle Frank Skall

Niccoló Vendramin

Susie Sommer Mikkelsen

Torsten S. Boutrup

Marianne Veteri Lajer Hansen

Mette Eliassen

Maj-Britt Christopher sen

Nicole Nicolajsen

BU group:  
Jane, Herdis, Anne Marie

DTU

**The Fish1+2 Team**

Niccoló Vendramin

Susie Sommer Mikkelsen

Torsten S. Boutrup

Betina

Christina vet

Birgitte

Troels

Anemone

??

DTU

**EURL-Fish work program 2012**

8

**5 main objectives**

- 1. Coordination and training
- 2. Proficiency test
- 3. Reagents and products
- 4. Scientific advice and activities
- 5. Missions

**20 subgoals**

National Veterinary Institute



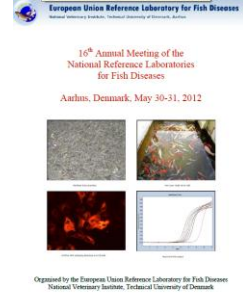
**EURL-Fish work program 2012**

9

**Objectives**

- 1-1 Organise and prepare for the 16th Annual Workshop for the National Reference Laboratories for Fish Diseases (NRLs) in 2012
- 1-2 Produce a report from the Annual Workshop 2012.
- 1-3 Collect and report data on the fish disease situation in EU, including all the listed non-exotic fish diseases given in Council Directive 2006/88/EC Annex IV Part 2.
- 1-4 Facilitate and provide training in laboratory diagnosis. The yearly training courses in methods used for diagnosis of fish diseases will be offered at the EURL laboratory facilities. The courses will primarily be for training of staff from NRLs and the content will depend on request from participants.
- 2-1 Prepare the Annual Inter-laboratory Proficiency Test year 2012 for the NRLs. The test will include VHSV, IHNV, EHN, ISAV, KHV and *Aphanomyces Invadans*.
- 2-2 Collate and analyse information gained from the Inter-laboratory Proficiency Test
- 3-1 Supply reference reagents to the NRLs in Member States.
- 3-2 Production of antisera against selected isolates when necessary
- 3-3 Update and maintain a library of isolates of Infectious salmon anaemia virus (ISAV), Viral Haemorrhagic Septicaemia virus (VHSV) and Infectious Haematopoietic Necrosis virus (IHNV), Koi Herpes virus (KHV) and enzootic haematopoietic necrosis virus (EHN) and *Aphanomyces Invadans*.
- 3-4 Maintain a library of tissue material from fish infected with listed pathogens
- 4-1 Update the webpage for the EURL, [www.eurl-fish.eu](http://www.eurl-fish.eu)
- 4-2 Update the diagnostic manuals for VHS, IHNV, ISA, KHV disease, EHN and EUS on the EURL web page.
- 4-3 Collect information on strain variation occurring within pathogens causing the listed diseases VHS, ISA, EHN and KHV disease and provide recommendations on how to discriminate between various strains.
- 4-4 Identify and characterise selected isolates of listed viruses (serological and genetic characterisation).
- 4-5 Update and expand [www.fishpathogens.eu](http://www.fishpathogens.eu) with more pathogens.
- 4-6 Perform molecular epidemiology analysis to improve knowledge on diseases spreading mechanisms of viral pathogens.
- 4-7 Assessment and standardisation of real-time PCR tests for the diagnosis, identification and typing of the listed non-exotic fish diseases.
- 4-8 In collaboration with specialised experts WW to review selected emerging fish diseases in Europe and assess their potential listing as exotic or non-exotic diseases (e.g. using discontours and similar tools)
- 5-1 Organizing missions to relevant laboratories. Missions will focus on NRLs where on-site communication would be beneficial.
- 5-2 Attending missions, international meetings and conferences in order to be updated on emerging and listed exotic and non-exotic fish diseases.

**1-1,1-2 Organise and prepare for the 16<sup>th</sup> Annual Meeting for the NRLs and produce a report from the Annual Meeting**



National Veterinary Institute



**1-3 Collect and report data on the fish diseases situation in EU**

11



National Veterinary Institute



**1-4 Facilitate and provide training in laboratory diagnosis: EURL training courses 2012**  
**Molecular techniques for identification of listed fish diseases (week 4)**  
**General Virology (week 5)**  
 Aarhus, 24/1-3/2 2012 organised by the EURL for Fish Diseases



**2-1, 2-2 Prepare and report the Annual Inter-laboratory Proficiency Test.**

PT1-2012 for identification of:

VHSV, IHNV, EHNV, SVCV and IPNV

and PT2 identification of:

CyHV-3 (KHV), ISAV and *Aphanomyces invadans*



National Veterinary

13



**3-1 Supply reference reagents to the NRLs in Member States**

**Materials supplied by the EURL**

On request, the EURL supplies material to other laboratories in Member States and Third Countries to aid in the diagnosis and characterisation of fish diseases.

National Veterinary Institute

14



**3-2 Production of antisera against selected isolates when necessary**

High titre rabbit antisera against *Herpesvirus Anguilla* (AnHV-1) were produced and assessed in 2012 in 2 rabbits (F-3015 and F-3253).

National Veterinary Institute

15



**3-3 Update and maintain a library of isolates of ISAV, VHSV and IHNV, KHV and EHNV**

- Several isolates of the listed viruses VHSV, IHNV and KHV were received and stored in our library during 2012. Furthermore, two isolates of the oomycete *Aphanomyces invadans* were received and 400 vials of VHSV tissue homogenate supernatant for validation of VHS RT-PCR and real-time RT-PCR.
- 
- In addition, the EURL received other relevant pathogens like SVCV, IPNV, perch rhabdovirus and *Aphanomyces astaci*, the causative agent of crayfish plague. Our library have continuously been updated and maintained.

National Veterinary Institute

16



**3-4 Maintain a library of tissue material from fish infected with listed pathogens**

Challenge for VHSV, IHNV and IPNV.

Infected and non-infected organ material from single fish collected  
 Challenge trials with VHSV, IHNV, IPNV, SD virus and OMV of small rainbow trout for positive controls in histology as whole body mount were conducted and samples collected

Collected tissue material with *Aphanomyces invadans* (EUS) from both gouramis and rainbow trout is being stored, as well as tissue material for use as positive controls in PCR.



National Veterinary Institute



**4-1 Update the webpage for the EURL, [www.eurl-fish.eu](http://www.eurl-fish.eu)**

The **diagnostic manuals** for VHS, IHN, ISA, KHV, EHN disease and EUS have been uploaded on the web page.

Furthermore, **reports** of the EURL, e.g. the proficiency test, the Annual Meeting, questionnaire on "Survey & Diagnosis", Training courses etc.

In addition a **new e-mail group was created in 2012: VET-EURL** with approximately 100 colleagues subscribing. The site is used for newsletters, scientific updates and announcements from the EURL Fish.

National Veterinary Institute



DTU

**4-2 Update the diagnostic manuals for VHS, IHN, ISA, KHV disease, EHN and EUS on the EURL web page**

- The diagnostic manuals for VHS, IHN, ISA, KHV, EHN disease and EUS have all been prepared and are available from the EURL web page.
- The diagnostic manuals for VHS and IHN are updated and modifications of Commission Decision 2001/183/EC made.
- The diagnostic manual for ISA was prepared based on Commission Decision 2003/446/EC.
- In all five manuals with the latest information on test developments as analytical sensitivity and specificity are included.
- The diagnostic manual for EUS has been uploaded.



National Veterinary Institute

DTU

**4-3 Collect information on strain variation occurring within pathogens causing the listed diseases VHS, ISA, EHN and KHV disease and provide recommendations on how to discriminate between various strains**

- **VHS:** Studies have been conducted in order to develop methods to discriminate between VHSV genotypes using monoclonal antibodies *Ito et al. (2012) Typing of VHSV by monoclonal antibodies, J. Gen. Vir., 93, 2546–2557.*
- **KHV:** submitted to *Veterinary Research: Engelsma et al.: Detection of novel strains of Cyprinid herpesvirus closely related to koi herpesvirus*
- **ISA** HPR0 is still in focus. *Scientific Opinion on infectious salmon anaemia (ISA)*

National Veterinary Institute

DTU

21

**4-4 Identify and characterise selected isolates of listed viruses**

- Again in 2012 a significant number of virus isolates were received for further characterisation at the EURL and for storing in our virus library

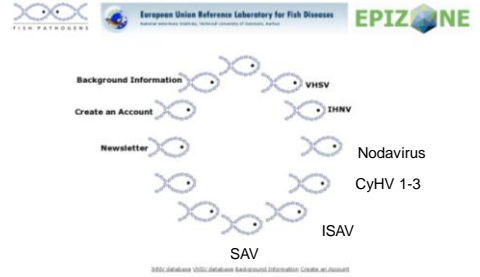
Member States/Countries outside EU		
Material received	Laboratories	Units
Diagnostic material for virology	3	22 samples
Diagnostic material for PCR	2	41 samples
Virus isolates	2	27 samples
PCR material	3	442 samples
Other material	2	8 specimens

National Veterinary Institute



22

**4-5 Update and expand [www.fishpathogens.eu](http://www.fishpathogens.eu) with more pathogens**



National Veterinary Institute



23

**4-6 Perform molecular epidemiology analysis to improve knowledge on diseases spreading mechanisms of viral pathogens.**

Vir ■■■ BREEDERS OF AQUATIC ORGANISMS ■■■ Publisher ■■■  
doi:10.1007/s10641-013-0044-4

**European freshwater VHSV genotype Ia isolates divide into two distinct subpopulations**

S. Kahna<sup>1,2,\*</sup>, H. F. Skall<sup>1</sup>, R. S. Kaas<sup>2</sup>, H. Korsholm<sup>1</sup>, B. Bang Jensen<sup>1,3</sup>, S. F. Jonstrup<sup>1</sup>, M. J. Dodge<sup>4</sup>, K. Einer-Jensen<sup>1</sup>, D. Stone<sup>5</sup>, N. J. Olesen<sup>1</sup>

<sup>1</sup>National Veterinary Institute, Technical University of Denmark, 4000 Aarhus N, Denmark  
<sup>2</sup>National Food Institute, Technical University of Denmark, 2800 Lyngby, Denmark  
<sup>3</sup>Section for Aquaculture, Danish Veterinary and Food Administration, 1160 Vejle, Denmark  
<sup>4</sup>CEZAS Westmeath Laboratory, Westmeath, Ireland 01474 418 374

Journal of Fish Diseases 2013, 36: 110-114

doi:10.1111/jfd.12004



**Trade practices are main factors involved in the transmission of viral haemorrhagic septicaemia**

M Reichert<sup>1</sup>, M Matras<sup>2</sup>, H F Skall<sup>2</sup>, N J Olesen<sup>3</sup> and S Kahna<sup>2\*</sup>

<sup>1</sup> Department of Pathology, National Veterinary Research Institute, Pulawy, Poland  
<sup>2</sup> Department of Fish Diseases, National Veterinary Research Institute, Pulawy, Poland  
<sup>3</sup> National Veterinary Institute, Technical University of Denmark, Aarhus N, Denmark



National Veterinary Institute



24

**4-7 Assessment and standardisation of real-time PCR tests.**

**4-8 Review selected emerging fish diseases in Europe and assess their potential listing as exotic or non-exotic diseases**

*5-1 Organizing missions to relevant laboratories.*

*5-2 Attending missions, international meetings and conferences in order to be updated on emerging and listed fish diseases.*

### 18th Annual Meeting 2014

- When?
- Where?

