EURL training courses




Copenhagen October 10th -20th 2016

Hosted by the European Union Reference Laboratory for Fish Diseases

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General introduction

The training courses took place in Copenhagen at DTU National Veterinary Institute, Bülowsvej 27, 2700 Frederiksberg C Denmark, from October the 10th to the 20th, 2016. Two courses were prepared: the first one, with 7 trainees, was entitled "Methods for implementation of surveillance procedures for listed fish diseases" and took place from 10th to 14th October 2016.
The second course was entitled "Introduction to histopathology in fish diseases" and took place in Copenhagen 17th to 20th October 2016 with 14 participants. 1 person participated in both training courses.

The overall purpose of the training course was to provide an opportunity for the NRLs to send employees for training in techniques relevant when working with fish diseases.
Concerning the course on surveillance of listed fish diseases the first course the staff of the EURL provided this training, together with teachers from the Danish Veterinary and Food Administration
For the course focused on Histopathology, staff of EURL and DTU VET, in cooperation with NVI-Oslo and Aquapri DK, constitute the tutor team.
Knowledge-sharing and discussions between participants and teachers were important parts of the courses.

Methods for implementation of surveillance procedures for listed fish diseases.

The 5-days course in "Methods for implementation of surveillance procedures for listed fish diseases" was primarily based on practical work (hands on) in combination with theoretical presentations.

Day 1 was dedicated to a fish farm inspection**.**
As procedure does not allow a visit to a fish farm after working in our laboratory it was decided to meet with the participants at the entrance of our institute and to drive to the FVO offices in Vejen, where we were received by Dr. Korsholm. After the training course introduction by Niccoló Vendramin and presentations on Danish surveillance plans for fish diseases held by Dr. Korsholm, the participants visited a rainbow trout farm, Vejen Store Vandmolle, approx 5 km from Vejen.
During the on-site visit, procedures for inspection and sample collection were demonstrated; participants were taught on how fish necropsy techniques are performed in the field. All participants had the opportunity to perform necropsy on diseased fish collected at the farm; they collected relevant samples and brought them back to the laboratory in Copenhagen for further examination.

On day 2 a detailed description of the course program was presented by Niels Jørgen Olesen and discussed with the participants. After the introduction, a lecture on fish virology was given by prof. Niels Jørgen Olesen. The participants were then divided into two groups. As an assignment each participant had to process the samples collected in the fish farm and test it to rule out the presence of the listed disease VHS. Further on, participants were asked to investigate if other pathogens were present in the sample. The processing of fish samples collected the day before was demonstrated before the participants were asked to do it themselves.

Day 3 and 4 were replicated so that one group could follow the cell culture part one day and the Real-time PCR the day after and vice versa for the other group. With this organization it was possible for all the trainees to participate in all the practical activities that were demonstrated.
Every activity had a team of tutors in order to provide an effective support to the trainees. For the cell culture activities Niccolò Vendramin, Betina Lynnerup and Christina Flink Desler were assigned, while for the real-time PCR part, Argelia Cuenca Navarro, Troels Secher Rundqvist and Didde Hedegaard Sørensen were the tutors.
The day dedicated to cell culture started with the demonstration of the procedure implemented in the laboratory to prepare diagnostic trays with BF-2 and EPC cell cultures. Subsequently all the participants prepared their own trays and inoculated the trays with the sample prepared the day before. Titration procedure was also demonstrated and a talk on titre calculation and cell susceptibility test was given. The afternoon was allocated to provide the participants with knowledge in reading different fish cell lines inoculated with different viral pathogens, highlighting features of different cytopathogenic effects (CPE). As practical assignment participants were asked to read titration plates previously prepared, calculate the titre of the virus inoculated, and describe and draw different CPE's on infected cell cultures.

The day dedicated to real-Time PCR started with a brief introduction addressing the use of PCR techniques in surveillance and diagnostic, with focus in detection of VHSV. The practical laboratory exercises started with participants being demonstrated how to purify RNA from their samples, with participant processing his own sample. One of the participants of the group prepared the Mastermix, and set up the RT-qPCR for the whole team. Finally samples were loaded in the real-time PCR machine. While the machine was processing the samples, the participants attended a presentation explaining the theoretical principles behind the different PCR techniques and methods of data analysis. Finally, a session addressing troubleshooting and pitfalls in real-time PCR, as well as routines to minimize the risk of (cross-) contamination was provided. At the end of the day, results of the analysis were collected and discussed.

Day 5 was allocated to finalize the course, discuss both results obtained by the participants and different methods for performing surveillance for listed fish diseases in their countries of origin. Finally a questionnaire for the course evaluation was given and participants asked to fill it anonymously.

The methods taught were primarily focused on the protocols given in EU legislation and on the OIE guidelines from the Manual of Aquatic Animal Diseases, and included how to select proper controls, the typical pitfalls, trouble shooting, etc. As get-together, a joint dinner the second evening was included.

Introduction to histopathology in Fish Diseases.

The 4-days course in histopathology and immunochemical techniques was divided into theoretical lectures on relevant topics, practical exercises both in necropsy room and microscopy laboratory.

Day 1 started with introduction of course and practical information, each participant had the opportunity to present himself to the tutors and his fellows. Practical demonstration on how to sample fish tissues and organs for proper histological examination followed, and each participant could practically try the technique. Lectures given by Ole Bendik Dahle from NVI-Oslo on the normal histology and artifacts followed after lunch break.
Day 2 was divided between practical observation of slides from confirmed case at the microscope and theoretical lectures focusing on general pathology. Once again Ole Bendik Dahle took the lead of the teaching supported by Tine Iburg from DTU VET.

The first part of day 3 was dedicated to lectures on Immunehistochemistry-IHC, the different phase of sample preparation for this staining technique and troubleshooting and pitfalls during the process were discussed this part of the program was conducted by Tine Moesgaard Iburg, the fish pathologist employed at the EURL fish team. The day was concluded with presentation and discussion of specific cases in an open forum where participants where welcome to comment the images displayed on the screen.

Day 4, the last day of the course started directly at the microscopy room, diagnostic cases brought by participants were discussed and presented in an open forum, with supervision of tutors Ole Bendik Dahle and Tine Iburg.

After lunch, there was a last round of group work before all the participants met up again for a last discussion about the subjects that had been covered earlier in the day. At the end of the course the participants were provided with a questionnaire to fill in as part of the evaluation. Furthermore, the participants were invited to give their opinions on the course. All in all, the course was very well-received, and the distribution of practical and theoretical lessons seemed well balanced.

Through lectures, exercises, discussions, and knowledge exchange between participants, the knowledge on histopathology, and troubleshooting related to this technique was increased. There was much fruitful discussion among participants and teachers during the course, both during the lectures, the breaks and the theoretical exercises.

As get-together, an optional dinner event on day 2 was held.

Participant List

Name	Country	Affiliation	Course 1	Course 2
Rud Yuriy	Ukraine	Institute of Fisheries of the National Academy of Agrarian Sciences of Ukraine, Kyiv,	X	
Humberto Gonzalez	Chile	Sernapesca	X	X
John Bignell	UK	CEFAS-NRL		X
Eva Lewish	Austria	VETMEDUNI VIENNA NRL		X
Eva Jansson	Sweden	SVA		X
Tuja Kantala	Finland	EVIRA	X	
Anna Kycko	Poland	PIWET		X
Agnieszka Jasik	Poland	PIWET		X
Marlene Areskog	Sweden	SVA	X	
Tamara Dolenšek	Slovenia	University of Ljubiana		X
Moldal Torfinn	Norway	NVI	X	
Magdalena Stachnik	Poland	PIWET		X
Raoul Kuiper	Sweden	Karolinska Institute	X	x
Marta Alarcon	Norway	NVI		X
Caroline Wünster	Norway	NVI		X
Tomas Myoral Ortega	Spain	Central Vet Laboratory		X
Panos Kalatsis	Denmark	KU	X	x

EURL-Fish training course: Methods for implementation of surveillance procedures for listed fish diseases. Copenhagen 10th to 14th October 2016

Description of the course "Methods for implementation of surveillance procedures for listed fish diseases", held at the European Union Reference Laboratory (EURL) for Fish diseases, Frederiksberg (10/10-14/10 2015)

Course content:

The 5-days course is primarily based on practical work (hands on) in combination with theoretical presentations.

This year the course will focus on the comparison between diagnostic techniques for listed fish diseases evaluating pros and cons of cell culture and Real-Time PCR methods.

The first day of the course all participants will take part in a fish farm visit. The trip will be supervised by the Danish Veterinary and Food Administration, Section for Aquaculture that will provide guidelines and protocols for inspection, necropsy and sample collection. Organ material will be collected on site for processing the following days.

During the farm visit sampling procedures will be demonstrated and conducted by each participant.

Starting from day 2, theoretical class room teaching will be given on methodologies, pitfalls and troubleshooting. After the introduction, the participants will be divided into groups.

Each group will start processing the samples collected in the farm. This process will include cell culture preparation, inoculation on monolayers, observation of cell culture and assessment of cytopathogenic effect.

All cell cultures used for isolation of the listed viruses will be demonstrated and procedures will be conducted by the participants themselves.

Participants will initially be introduced to basic cell culture work: 24-well plate preparation for diagnostic purpose as well as 96-well plates for titration and flasks maintenance will be demonstrated and subsequently prepared by participants. Inoculation of diagnostic samples on cell cultures will be practiced. The CPE of different viruses will be shown and the participant will practice reading of diagnostic trays. Titration procedures will be demonstrated and afterwards participants will have the opportunity to practice by themselves; finally course participants will calculate virus titres.

The application of novel validated and accredited Real-Time PCR protocols suitable for surveillance will be demonstrated and performed by participants. Special emphasis will be put in the routines and methods to minimize contamination when PCR techniques are used with diagnostic purposes.

The course is dialogue based and sufficient time will be given for discussion under way and for evaluation of test results.

Quality assurance, cleaning and disinfection etc. will be an integral part of the practical demonstrations.

The taught methods will primarily focus on the protocols given within EU legislation and OIE guidelines from the Manual of Aquatic Animal Diseases, and include how to select proper controls, the typical pitfalls, trouble shooting, etc.

A social dinner will be organized the second evening. Further details are provided in the invitation letter.

General course objectives

The course aims to provide participants knowledge on the most used cell cultures available for diagnosis of important fish viruses. The course will focus on basic cell cultivation techniques, production of cells for different purposes (IFAT, diagnostic trays, titration etc.), cell susceptibility testing, inoculation of samples and sub-cultivation procedures, reading of cell cultures (including CPE) and virus titration.

To provide the participants with knowledge on the most used methods for diagnosis of important fish pathogens. The course will focus on real-Time PCR protocols validated for surveillance of listed fish diseases.

To understand the underlying principles of the tests and to critically review them in order to assess pitfalls and to correctly interpret them

Learning objectives

The participants that will have fully followed all the course's objectives will be able to:

Maintain, cultivate, inoculate and read most used cell lines (BF-2, EPC, CCB and ASK) for fish disease diagnostic purposes.

Prepare cell cultures for different purposes, e.g. diagnosis, IFAT and virus titration.

Inoculate and sub-cultivate diagnostic samples.

Read diagnostic trays.

Titrate virus.

Apply real-Time PCR for surveillance purposes.

Assess pitfalls and errors in test performances and designs.

The major focus will be on the viral fish diseases using VHS as model.

The course will provide a forum where pre-knowledge, experience and examples can be discussed between participants and teachers, and hereby raise the awareness of pitfalls when using the various techniques.

Intended learning outcomes

To increase the practical and theoretical knowledge of cell culture based and bio-molecular techniques used in fish virus diagnostics. The course also aims at providing a forum where (good and bad) experiences can be discussed among participants and teachers.

The core elements

Fish cell line cultivation

Real-Time PCR

Identification and discussion of pitfalls and perform trouble shooting.

Assessment

Each day will end with a short result and discussion follow-up in order to evaluate whether the participants picked up the treated core elements. Their results will be discussed. At the end of the course a questionnaire for course evaluation will be delivered to all participants.

The course material

Protocol for the hands-on exercises, power-point presentations as well as the original scientific papers describing the applied assays/techniques is included in the course binder. The supervisors will collect the generated results and provide shared data overviews to be starting point of discussions.

The course participants

Since course attendants can come from very different experiences, during the general introduction (day 1), researchers and technicians will be asked to introduce themselves, their pre-experience in the laboratory and their expectations to the course in order to target the course content optimally, especially during the theoretical- and discussion workshops. Their starting point will therefore be mixed as some may have limited theoretical or practical experience, while others may be highly experience in some or all disciplines.

Course supervisors

Prof. Niels Jørgen Olesen experienced in fish virology and has been working with cell cultivation, ELISA and IFAT for >15 years, in cooperation with Henrik Korsholm (>15 years of experience in aquaculture surveillance plan) will take care about the farm visit.
Argelia Cuenca Navarro (Molecular Biologist PhD) will be supervisor for biomolecular techniques.
Niccoló Vendramin (DVM) will be supervisor for cell culture preparation and reading.
Technical help and assistance for running the laboratory courses will be given by:
Betina Lynnerup (Cell Culture)
Christina Flink Desler (sample preparation)
Troels Secher Rundqvist (Real Time PCR)
Didde Hedegaard Sørensen (sample preparation)
Teena Vendel Klinge (course material preparation)

Program: Methods for implementation of surveillance procedures for listed fish diseases

Day 1	Day 2	Day 3	Day 4	Day 5
Section 1 **FISH farm inspection**	**Section 2** **Laboratory introduction**	**Section 3** **Cell culture facility**	**Section 4** **qPCR analysis**	**Section 5** **Discussion and evaluation**
FISH FARM VISIT in collaboration with FVST (Danish Veterinary and Food Administration, Section for Aquaculture). The participants will be introduced to the contingency plan in Denmark, practical demonstration of farm inspection will be performed and samples for surveillance will be collected by participants	9:00-10:00 Participants will be introduced to the laboratory Coffee Break 10:00-10:30 10:30-12:00 Theoretical introduction to the use of cell culture and qPCR for surveillance programs for non-exotic listed disease in Europe.	8:30-10:00 Cell culture preparation for diagnostic purpose, titration and IFAT Coffee Break10:00-10:30 10:30-12:00 Titration procedure Viral titre calculation	8:30 - 12:00 Nucleic acid purification and master mix preparation	9:00- 9:30 Reading plates prepared by participants 9:30-10:30 Presentation of results obtained by participants 10:30-12:00 Scientific discussion and recommendations. Conclusion
	Lunch 12 -12:30	**Lunch12 -12:30**	**Lunch12 -12:30**	**Lunch12 -12:30**
	12:30 – 14:30 Samples processing collected following different diagnostics procedure (Cell culture and PCR) Coffee Break 14:30-15:00	12:30- 14:30 Cell observation Coffee Break 14:30-15:00 15:00-16:30 Cell observation 2	12:30-14:30 Real-time PCR troubleshooting Coffee Break 14:30-15:00 15:00-16:30 PCR results to be collected and discussed	12:30-15:00 Course evaluation Last minutes questions and Good Byes Wrapping up of the course and questionnaire fill out (coffee at the tables).

Evaluation: Methods for implementation of surveillance procedures for listed fish diseases

Table 1-3 and graphs 1-3 showing participant satisfaction level considering every section.

Table 1 evaluation of the training course activities during fish farm inspection calculated as percentage

Fish Farm Inspection	Very Low	Low	Average	Good	Very Good
Teachers preparedness	0,0	0,0	0,0	0,0	100,0
Course relevance for you	0,0	0,0	0,0	14,3	85,7
Increase of your knowledge	0,0	0,0	0,0	14,3	85,7
Overall opinion of course	0,0	0,0	0,0	0,0	100,0

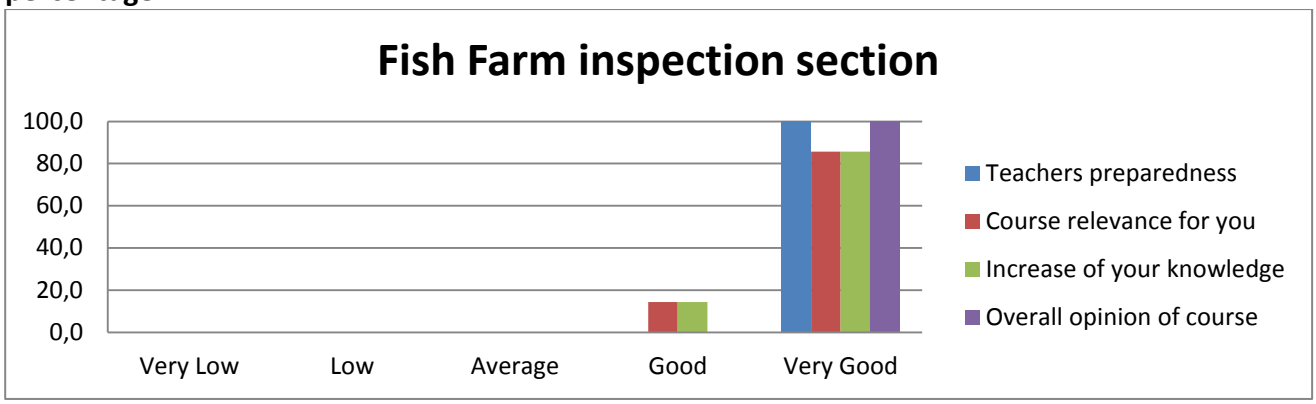
Table 2 evaluation of the training course activities during Real time PCR session calculated as percentage

Real Time PCR	Very Low	Low	Average	Good	Very Good
Teacher expertises	0,0	0,0	0,0	14,3	85,7
Teachers preparedness	0,0	0,0	0,0	14,3	85,7
Course relevance for you	0,0	14,3	0,0	14,3	71,4
Increase of your knowledge	0,0	14,3	14,3	14,3	57,1
Overall opinion of course	0,0	0,0	0,0	28,6	71,4

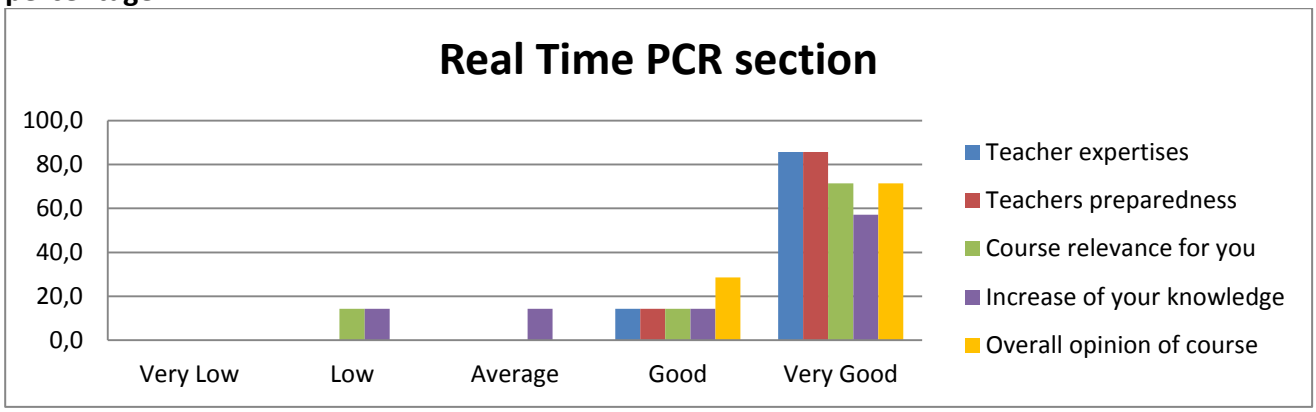
Table 3 evaluation of the training course activities during Cell culture session calculated as percentage

Cell culture	Very Low	Low	Average	Good	Very Good
Teachers expertises	0,0	0,0	0,0	0,0	100,0
Teachers prepardness	0,0	0,0	0,0	0,0	100,0
Course relevance for you:	0,0	0,0	0,0	0,0	100,0
Basic cell culture techiques	0,0	0,0	0,0	14,3	85,7
Inoculation and subcultivation procedures	0,0	0,0	0,0	14,3	85,7
Virus titration	0,0	0,0	0,0	0,0	100,0
Reading of plates (CPE, toxic effect etc.)	0,0	0,0	0,0	14,3	85,7

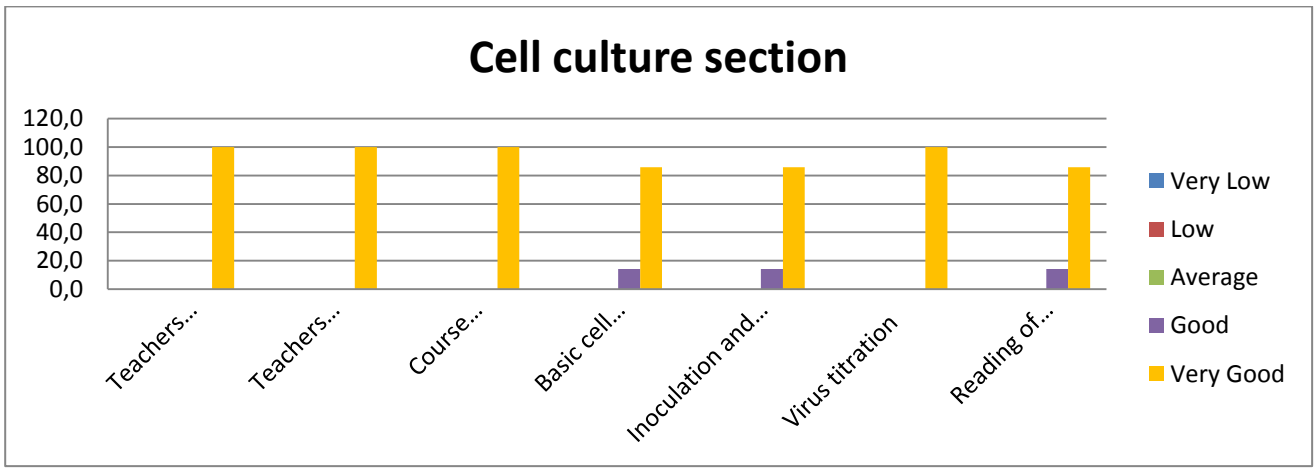
Graph 1 evaluation of the training course activities during fish farm inspection calculated as percentage



Graph 2 evaluation of the training course activities during Real time PCR session calculated as percentage



Graph 3 evaluation of the training course activities during Cell culture session calculated as percentage



Description of the course "Introduction to Histopathology in fish diseases"European Union Reference Laboratory (EURL) for Fish diseases, Frederiksberg (17th – 20th October 2016)

Course content:

The 4-days course is primarily based on a combination of practical work (hands on) and theoretical presentations.
This course will focus on the use of histopathology in fish diseases, combining a general histopathological approach with pathogen specific techniques as Immunohistochemistry (IHC).
The first day participants will be shown how to take optimal samples for histopathological evaluation, considering different tissues and fish sizes. In the afternoon, lectures in pathology and histopathology will begin.
During the next days, the participants will continue the training track with a combination of lectures and practical work and will be introduced to special staining methods or pathogen detecting techniques as IHC.
The course gives an introduction to general pathology and the specific histopathological lesions and lesion pattern that occur as a consequence of disease. Focus is put on the understanding of general pathological processes and on training in histopathological diagnostic skills.
The course is dialogue based and sufficient time will be given for discussion under way.
A social dinner will be organized the second evening. Further details are provided in the invitation letter.

General course objectives
The course aims to introduce participants to the use of histopathology in fish diseases, combining technical knowledge on how to process samples including collection, fixation and the detection and description of lesions that can be observed during different disease stages of systemic infections.

The course will be structured on two main pillars: an overarching part on how to approach histopathology and combine theoretical knowledge on specific lesions to diseases patterns and a more specific part on Immunohistochemistry describing pitfalls and application of these techniques to specific pathogens.

Lectures will include descriptions of the techniques with major focus on their application, pitfalls and trouble shooting. Practical sessions and show-and-tell sessions will allow participants to spend time on the microscope individually observing prepared slides, open discussion as well as one-to-one supervision with the tutors.

Participants are welcome to bring their own slides to discuss the case with the other participants and tutors. Slides for the last day with open discussion should be handed in on the first day.

Learning objectives

This course aims to introduce the students to pathology and histopathology of fish with the main focus on the systemic infections in farmed fish.

The participants that will have completed the entire course and fulfilled the course's objectives:

Will be able to:

- sample organs and tissue for histopathological examination and submit them in a correct way

Will have gained knowledge:

- on how to discriminate between normal histology and artefacts that occurred during fixation and processing
- on how detect and describe pathological changes and patterns in a systematic and uniform way
- on the technology for preparing IHC and how to assess pitfalls and errors in staining process.

Overall the course will allow participants to understand the underlying principles of the histopathology and specific techniques such as IHC, thus increasing the ability to evaluate histological slides and critically review results based on histopathological examination. Furthermore the course will allow the participants a better understanding of specific staining methods thus increasing the ability to critically review these methods in order to assess pitfalls and to correctly interpret them

The major focus will be on systemic infections including listed fish diseases.

The course will provide a forum where pre-knowledge, experience and examples can be discussed between participants and teachers, and hereby raise the awareness of pitfalls when using the various techniques.

Intended learning outcomes

To increase the practical and theoretical knowledge of histopathology of systemic fish diseases including listed diseases. The course also aims at providing a forum where (good and bad) experiences can be discussed among participants and teachers.

The core elements

Histopathology of fish diseases

IHC applied to fish diseases

Assessment

During each day participants are encouraged to take part in the discussions on the subjects presented.

A specific session at the end of the course is allocated for discussion and evaluation of the course and at the end of the course a questionnaire for course evaluation will be delivered to all participants.

The course material

A course binder with practical information will be provided. The course binder will also be used for collection hand-outs from the various lectures.

The course participants

Since course attendants can come from very different experiences, during the general introduction (day 1), researchers and technicians will be asked to introduce themselves, their pre-experience in the laboratory and their expectations to the course in order to target the course content optimally, especially during the theoretical- and discussion workshops. Their starting point will therefore be mixed as some may have limited theoretical or practical experience, while others may be highly experienced in some or all disciplines.

Course supervisors

Ole Bendik Dale, tutor responsible for pathology and histopathology
Tine Moesgaard Iburg course supervisor and tutor for IHC

Program: Introduction to Histopathology in fish diseases

Day 1	Day 2	Day 3	Day 4
Section 1	**Section 2**	**Section 3**	**Section 4**
9:00-10:00 Course introduction Participants will present themselves… Place: M1 Coffee Break 10:00-10:20 10:30-12:00 Sampling for histopathological examination. Theory and Practice Place: Necropsy room DTU Vet	9:00-10:00 Lecture on pathology and histopathology Place: M1 Coffee Break 10:00-10:15 10:30-11:45 Microscopy room I Practical exercise	9:00-10:00 Lecture on IHC I Place: M1 Coffee Break10:00-10:30 10:30-12:00 Lecture on IHC II Place: M1	8:30 - 11:45 Microscopy Room Show and tell of cases by Ole Bendik Dale with discussion and participation of course participants Coffee Break 10:00-10:30 11:45
Lunch 12.00 -12:30	**Lunch 12.00 -12:30**	**Lunch 12.00 -12:30**	**Lunch12.00 -12:30**
12:30 – 15:00 Lecture on pathology and histopathology Place: M1	12:30 – 14:00 Lecture on pathology and histopathology Place M1 Coffee Break 14:00-14:30 14:45-16:30 Microscopy room II Practical exercise	12:45- 14:30 Microscopy room III Practical exercise Coffee Break 14:45-15:15 15:15-16:30 Theoretical exercise on IHC Place: M1	12:45-14:45 General discussion on selected cases brought by participants 14:45 15:00-15:30 Course evaluation Coffee, cakes and goodbye

Table 4-10 and graph 4-10 showing participant satisfaction level during each section.

Table 4 evaluation of the training course activities during Sampling for histopathological examination calculated as percentage

Sampling for Histopathological Examination	Very Low	Low	Average	Good	Very Good
Teacher expertises	0	0	0	8	92
Teachers preparedness	0	0	0	15	85
Course relevance for you	0	0	8	46	46
Increase of your knowledge	0	8	0	31	62
Overall opinion of course	0	0	0	15	85

Table 5 evaluation of the training course activities during Pathology and histopathology session calculated as percentage

Lectures on pathology and histopathology	Very Low	Low	Average	Good	Very Good
Teacher expertises	0	0	0	15	85
Teachers preparedness	0	0	0	31	69
Course relevance for you	0	0	8	23	69
Increase of your knowledge	0	0	15	23	62
Overall opinion of course	0	0	0	23	77

Table 6 evaluation of the training course activities during practical exercise in microscopy room calculated as percentage

Practical exercise in microscopy room	Very Low	Low	Average	Good	Very Good
Teacher expertises	0	0	0	15	3
Teachers preparedness	0	0	0	8	92
Course relevance for you	0	0	15	0	85
Increase of your knowledge	0	0	8	15	77
Overall opinion of course	0	0	0	15	85

Table7 evaluation of the training course activities during practical exercise in Show and tell in microscopy room calculated as percentage

Show and tell in microscopy room	Very Low	Low	Average	Good	Very Good
Teacher expertises	0	0	0	15	85
Teachers preparedness	0	0	0	31	69
Course relevance for you	0	8	0	15	77
Increase of your knowledge	0	0	8	23	77
Overall opinion of course	0	0	0	31	69

Table 8 evaluation of the training course activities during IHC session calculated as percentage

IHC session	Very Low	Low	Average	Good	Very Good
Teacher expertises	0	0	0	8	92
Teachers preparedness	0	0	0	15	85
Course relevance for you	0	15	0	38	46
Increase of your knowledge	0	0	15	15	69
Overall opinion of course	0	0	0	38	62

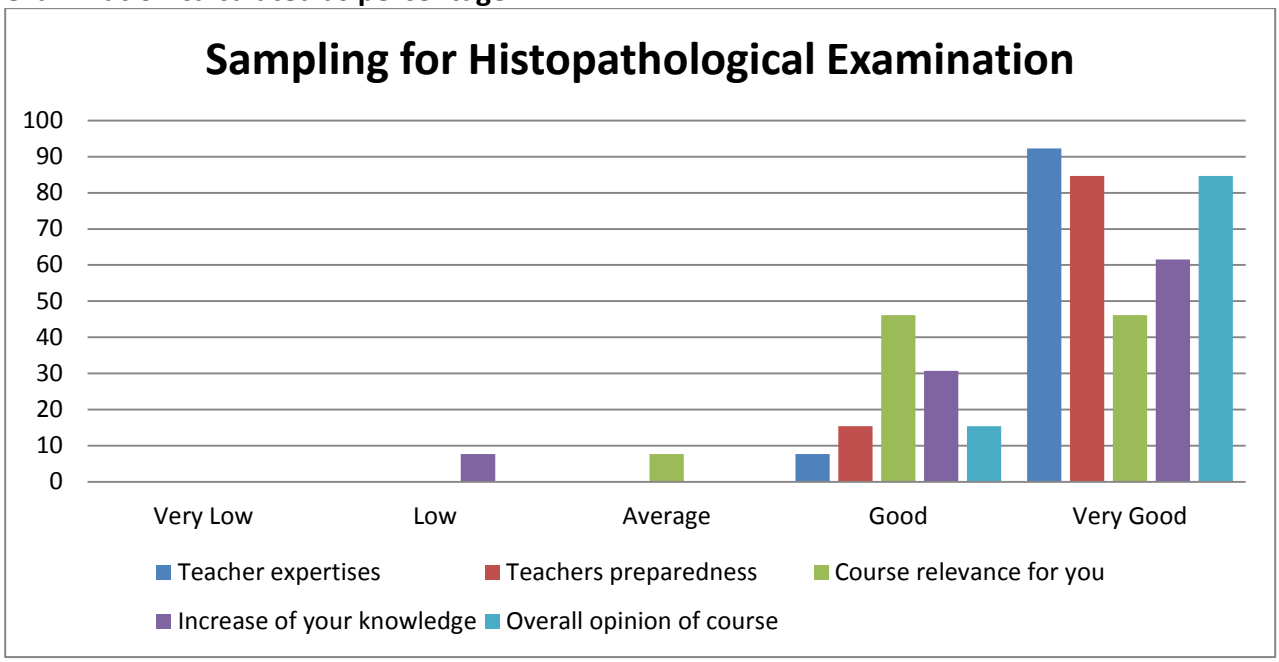
Table 9 evaluation of the training course activities during theoretical exercise IHC session calculated as percentage

Theoretical exercise IHC	Very Low	Low	Average	Good	Very Good
Teacher expertises	0	0	0	21	71
Teachers preparedness	0	0	0	21	71
Course relevance for you	0	0	29	14	50
Increase of your knowledge	0	7	7	36	43
Overall opinion of course	0	0	7	21	64

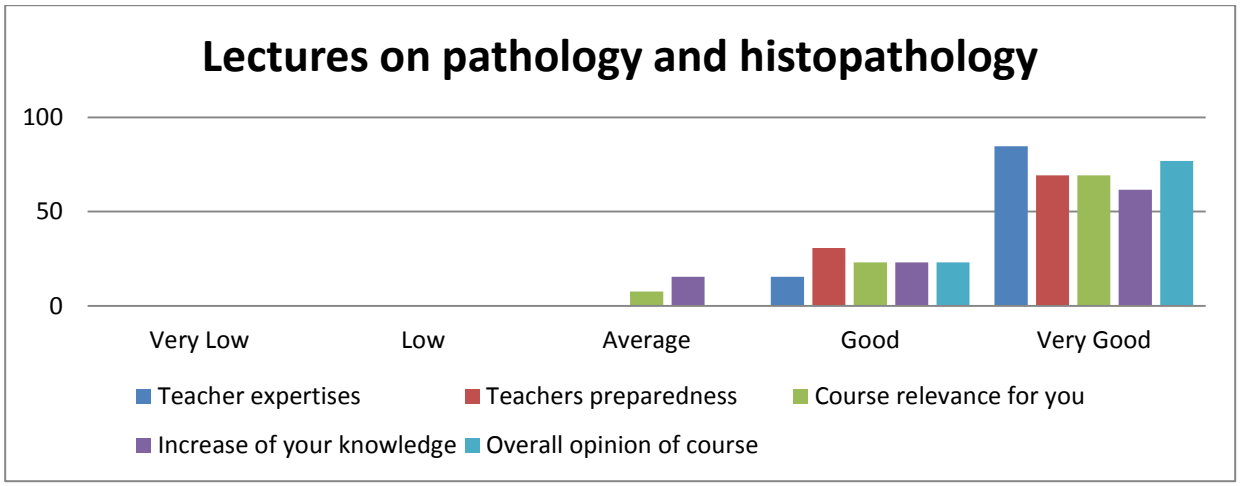
Table 10 evaluation of the training course Cases brought by participants session calculated as percentage

Cases brought by participants	Very Low	Low	Average	Good	Very Good
Course relevance for you:	0	0	8	8	77
Increase of your knowledge	0	0	8	38	46
Overall opinion of course	0	0	0	31	62

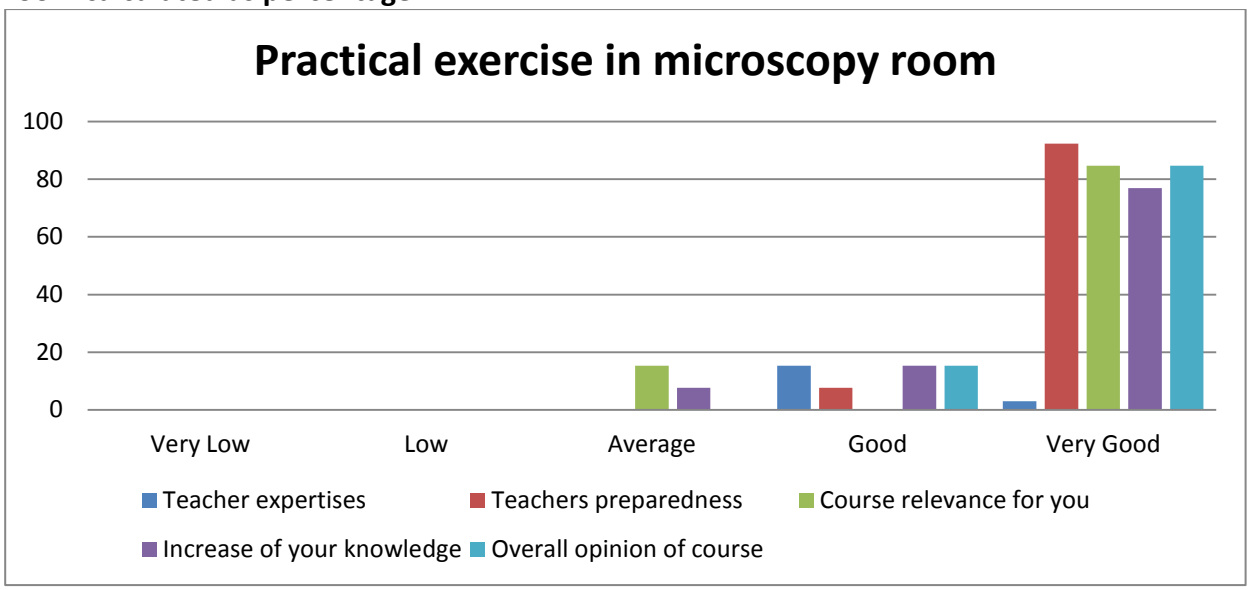
Graph 4 evaluation of the training course activities during Sampling for histopathological examination calculated as percentage



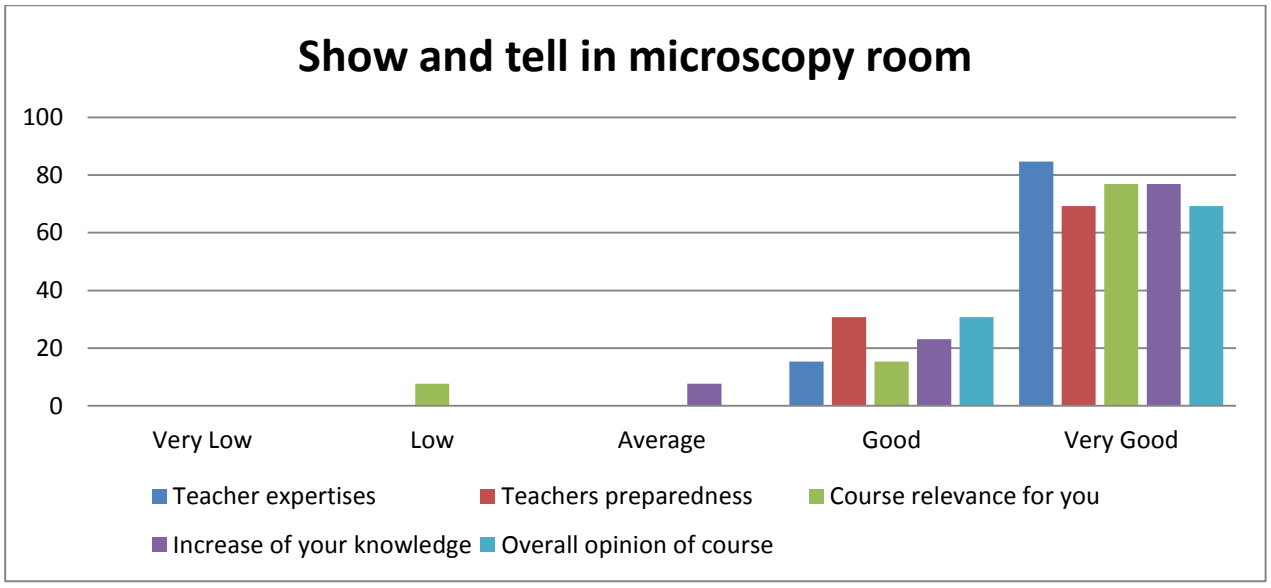
Graph 5 evaluation of the training course activities during Pathology and histopathology session calculated as percentage



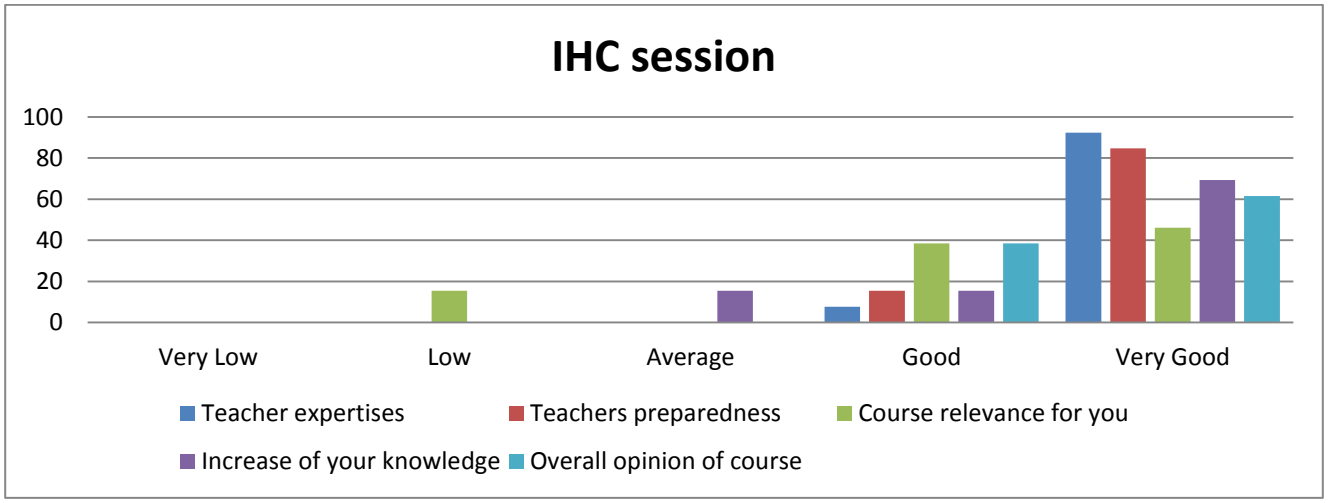
Graph 6 evaluation of the training course activities during practical exercise in microscopy room calculated as percentage



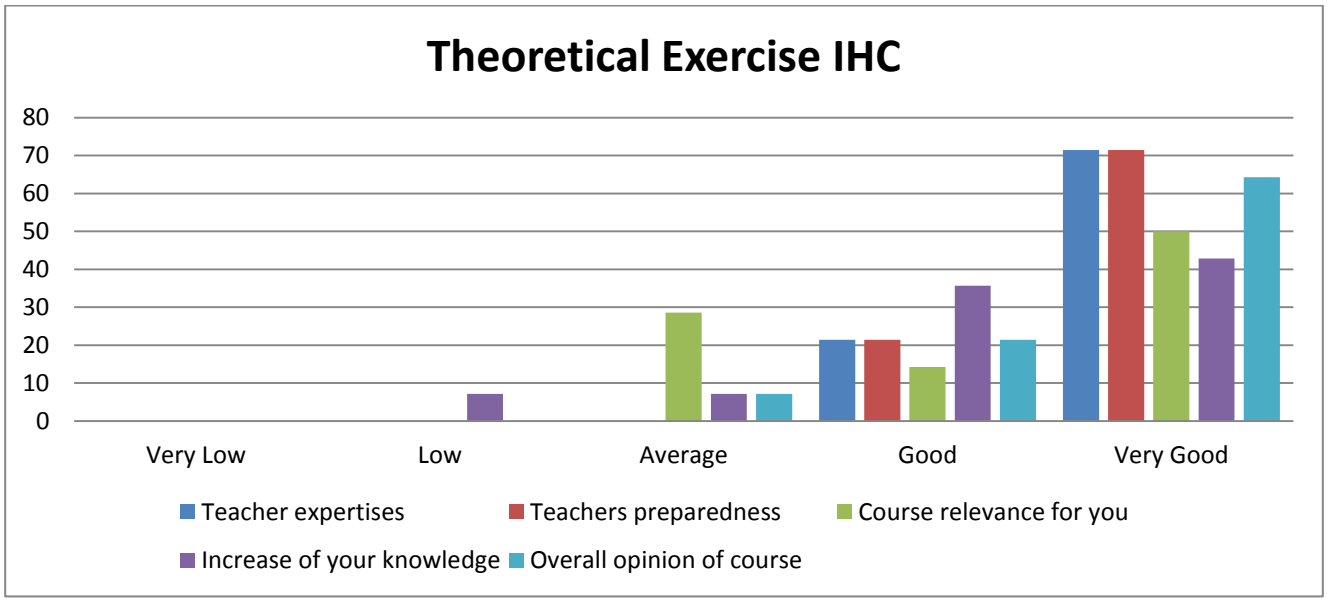
Graph 7evaluation of the training course activities during practical exercise in Show and tell in microscopy room calculated as percentage



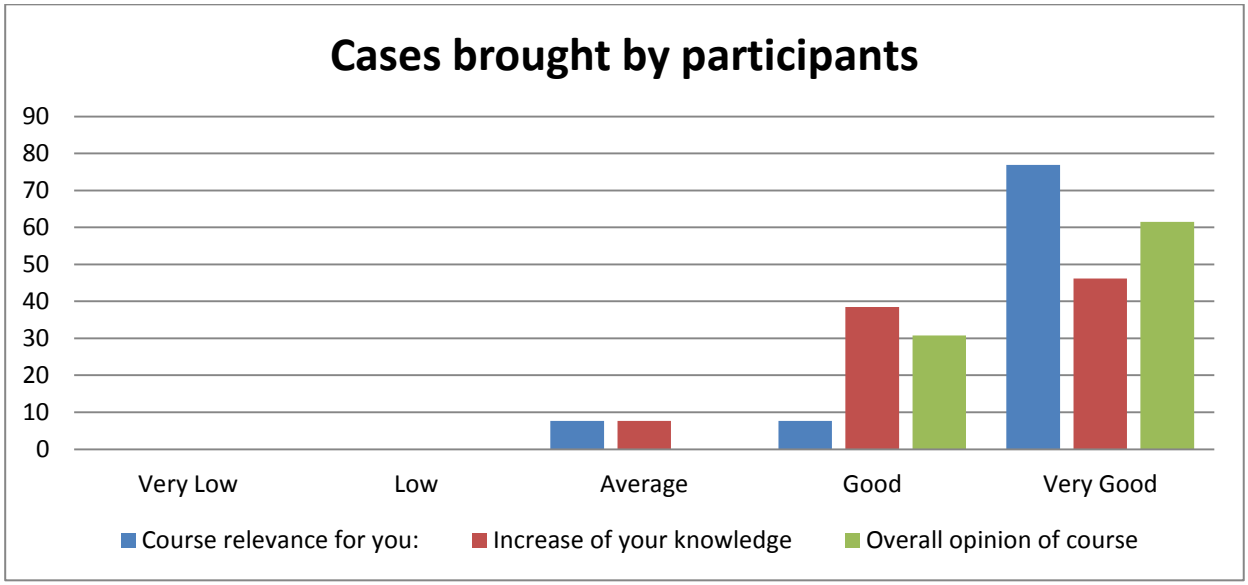
Graph 8 evaluation of the training course activities during IHC session calculated as percentage



Graph 9 evaluation of the training course activities during theoretical exercise IHC session calculated as percentage



Graph 10 evaluation of the training course Cases brought by participants session calculated as percentage



Closing remarks

The EURL training course 2016 was, based on the feedback from the participants, regarded as a success. The possibility to give financial support to participants made it possible to provide training to laboratories where the lack of funding usually makes it hard to find the resources to participate in such training courses. This way of funding the training courses therefore holds the possibility to increase the expertise in all laboratories within the EU.
Based on the experience of 2013, Training courses were provided in autumn in order to be able to clearly state which was the financial support for this activity and which applicant were entitled to obtain refunding.
Also for this year's course on Methods for implementation of surveillance procedures for listed fish diseases, it was decided to include an inspection to a fish farm, to demonstrate the whole process from sampling fish at a fish farm to final reading and interpretation of results, giving a holistic view and large span of topics that according to the evaluation schemes were well received.

DTU-Vet is acknowledged for offering training course facilities for free.
Dr. Henrik Korsholm, Veterinary and Food Administration, is deeply acknowledged for organizing the office and field visit and for teaching how to organize and implement surveillance and eradication programs and how to inspect and sample on fish farms.
Vejen store vandmølle dambrug is acknowledged for his hospitality and for providing all information and facilities needed during the farm visit.
External tutors Dr. Ole Bendik Dahle, Norwegian Veterinary Institute – Oslo, Norway, is deeply acknowledged for their very enthusiastic and excellent lectures, which demanded a lot of preparation and work.
Finally all laboratory technicians and scientists in the fish diseases unit of DTU-VET are deeply acknowledged for delivering excellent teaching and training and help with practical issues.

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EURL Fish Diseases