Programme for:

EURL-Fish training course:

Methods for implementation of surveillance procedures for listed fish diseases,

7th to 11th October 2019

European Union Reference Laboratory for Fish and Crustacean Diseases
National Institute of Aquatic Resources, Technical University of Denmark

Draft programme, subject to changes

Day 1	Day 2	Day 3	Day 4	Day 5
Section 1 **Visit to fish farm and DVFA in Jutland**	**Section 2** **Laboratory introduction and sample preparation**	**Section 3** **PCR analysis and Cell culture methods**	**Section 4** **PCR, blast and phylogeny**	**Section 5** **Cell culture /bacteriology and evaluation**
8:00 – 11:00 Transport by car to Danish Veterinary and Food Administration, DFVF Vejen in Jutland. Start in front of Cabinn Hotel 11:00 – 12:15 Aquaculture surveillance and sampling procedures in Denmark, By DVM Morten Fruergaard, DFVF. Control of VHS in DK by NJ Olesen	9:00 - 10:30 Introduction and practicalities. Participants experience and expectations *Coffee break 10:30 - 10:50* 10:50 - 12:15 Theoretical introduction to sample preparation, cell cultivation, virus ID and qPCR for surveillance programs for the non-exotic listed fish disease in Europe	9:00 – 10:30 : PCR and real time PCR theory. *Coffee break 10:30 - 10:50* 10:50 - 12:15 Result analysis Practical exercises.	9:00 - 10:30 PCR and Real Time PCR Troubleshooting. The diagnostic laboratory – PCR flow. *Coffee break 10:30 - 10:50* Sequencing theory and practical exercises	9:00 - 12:10 Team 1,2 and 3 - Cell observation Team 4, 5 and 6 - Fish bacteriology demonstration *Coffee break 10:30 - 10:50* Team 4, 5 and 6 - Cell observation Team 1,2 and 3 - Fish bacteriology demonstration
Lunch: 12:15 - 13:00	**Lunch: 12:15 - 13:00**	**Lunch: 12:15 - 13:00**	**Lunch: 12:15 - 13:00**	**Lunch: 12:15 - 13:00**
13:00 – 13.30 Transport to Hesselho Fish Farm 13:30 – 15:30 Inspection and sampling 15:30 – 19:00 Transport by car to Hotel Cabinn, Frederiksberg	13:00 - 14:30 Team 1,2 and 3: Sample preparation for cell culture, PCR and bacteriology on samples collected Monday Team 4, 5 and 6: Practical cell culture passaging and production of 24 well plates *Coffee break 14:30 - 14:45* 14:45- 16.45 Change 19:00 -Social dinner	13:00- 16:30 13:00-13:45 Reading cells and inoculation of samples 13:45-14:30 Use of cell culture in fish virology *Coffee break 14:30 - 15:00* *15:00-16:00* Titration procedure, viral titre calculation. Barcoding cell lines	13:00 – 17:00 Blast analysis and practical exercise *Coffee break 14:30 - 15:00* Introduction to phylogenetic analysis	13:00 – 14:45 Assignment + presentation and assessment of data obtained by each group Discussion and recommendations Conclusion 14:45-15:00 Course evaluation, coffee and goodbyes




Programme for:

EURL-Fish training course:

Histopathology in fish and crustacean diseases

14th - 18th October 2019

Draft programme (subject to changes

Day 1	Day 2	Day 3	Day 4	Day 5
Monday	Tuesday	Wednesday	Thursday	Friday
8:00-9:45 Course introduction Participants will present themselves Place: Auditorium Coffee Break 9:45-10:15 10:30-12:00 Sampling for histopathological examination. Theory and Practice Place: Necropsy room KU	8:00-9:30 Lecture on pathology and histopathology Place: Auditorium Coffee Break 9:30-10:00 10:00-11:30 Microscopy room I Practical exercise	8:00-8:30 Introduction to DTU e-forms reimbursement 8:30-9:30 Lecture on IHC I Place: Auditorium Coffee Break 9:30-10:00 10:00-11:30 Lecture on IHC II Place: Auditorium	8:00 - 9:30 Microscopy Room Show and tell of cases by Ole Bendik Dale with discussion and participation of course participants Coffee Break 9:30-10:00 10:00- 11:30 Microscopy room More show and tell	8:00 – 15:30 Overview of Crustacean Tissues - Structure and Function Overview of WSSV & Overview of TSV and YHV Coffee Break 9:30-10:00 OIE listed diseases and Emerging Pathogens Microscopy Practical
Lunch 12.15 -13:00	Lunch 11.30-12:15	Lunch 11.30 -12:15	Lunch 11:30 -12:15	Lunch 11:30-12:15
13:00 – 15:30 Lecture on pathology and histopathology Place: Auditorium	12:15 – 13:30 Lecture on pathology and histopathology Place: Auditorium Coffee Break 13:30-14:00 14:00-16:00 Microscopy room II Practical exercise	12:15-13:15 Theoretical exercise on IHC 1 Place: Auditorium Coffee Break 13:15 – 13.45 13:45-15:45 Microscopy room III Practical exercise 15:45 – 16:30 Theoretical exercise on IHC 2 Place: Auditorium	12:15-14:45 Introduction to crustacean anatomy 14:45-15:15 Sampling for histopathological examination of crustacean. Theory and Practice Place: Necropsy room KU	12:15-15:15 Microscopy Practical and Demonstration of Slide Scanner Show and tell of cases by Kelly Bateman with discussion and participation of course participants 15.15 - Coffee, cakes and evaluation of the crustacean day Place: auditorium

Timeline – procedure

1) First announcement send by email Friday 24th of May – **PLEASE DISTRIBUTE FURTHER**

2) Send application form AND cover letter to Linda and Lis until **16th of August**

3) All application compiled and scrutinized

4) A feedback to each **applicant on 30th of August**

Planning and Conducting experimental infection trials.

Date: 11-15 November

Day 1	Day 2	Day 3	Day 4
INTRODUCTION	**THE TRIAL**	**SPECIAL SESSION: Salmonid and Cyprinids**	**SPECIAL SESSION: Sea bass / Sea Bream and Immunology/Vaccinology**
9:00-10:00 Course introduction Practical information Participants will present themselves Coffee Break 10:00-10:30 10:30-12:00 Use of animal for research Use of fish for fish disease research	9:00-10:00 Trial design: Which question to answer Preparation work Standardizing environmental conditions. Coffee Break 10:00-10:30 10:30-12:00 Visit to DTU VET experimental facility Conducting a trial - Monitoring - Sampling	8:30-10:00 Salmonid physiology: Coffee Break10:00-10:30 10:30-12:00 Trial design for bacteria and virus in Rainbow trout /salmon DTU	8:30-10:00 Bass and bream physiology: Coffee Break10:00-10:30 10:30-12:00 Trial design Parasite in Bass and bream CSIC
Lunch 12 -12:30	**Lunch 12 -12:30**	**Lunch12 -12:30**	**Lunch12 -12:30**
12:30 – 14:30 Fish diseases experiments: - Pathogenicity trial - Pathogenesis study Visit to DTU tank facilities Coffee Break 14:30-15:00 15:00-16:30 Practical exercise. Designing trial for pathogenicity and pathogenesis	12:30 – 14:00 Analysis of samples collected Coffee Break 14:00-14:30 15:00-16:30 Compiling and understanding data Practical exercise. Raw data given and discussion on output of the trial	12:30- 14:00 Carp physiology : special requirements for trial design NAIK Coffee Break 14:00-14:30 14:30-16:30 Use of carp isogenic for fish model NAIK	12:30-14:00 infection models in vaccinology and immunology.UOS Coffee Break 14:00-14:30 14:30-16:00 infection models in vaccinology and immunology. UOS 16:00-17:00 Course evaluation, conclusions cakes