



EAVLD Newsletter

Foreword

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Dear colleague,

In this 11th issue of the EAVLD Newsletter we are pleased to present that the EAVLD now offers grants to members needy for financial help to registration and/or travel costs for conferences. The Newsletter also includes a short report of the 1st Nordic Veterinary Serology Meeting, Oslo, Norway, and we continue the series of presentations of EU reference laboratories with a contribution from the EURL for Classical Swine Fever.

EAVLD travel grants

EAVLD can help members to attend conferences that fit within the remit of the association by providing a financial contribution to registration and/or travel costs. The travel grants are available to all members. To be eligible all applicants must have been a member of EAVLD for at least 6 months, and will need to provide an abstract that has been submitted to the conference to demonstrate active participation. Successful applicants must provide an article for the EAVLD newsletter, preferably with a photograph. The article should detail the scientific highlights of the conference, and how the knowledge will be applied by the delegate.

EAVLD will have an annual budget of €1200. Grants provided will be between €200 and €400 and will be paid after attendance of the conference, and receipt of the article for the newsletter. The annual budget will be allocated as submissions are received and approved until it is spent.

How to apply: – Applications can be made at any time to the EAVLD Secretary by email: secretary@eavld.org. The application will be assessed by the board and a response will be made within 30 days. Applications must include:

1. Full name and place of work contact details
2. Career history / CV
3. Conference details, including fit with EAVLD
4. Abstract and acceptance letter (where received)
5. 1 page case for travel grant – this should detail why a travel grant is needed, what the benefit to the applicant will be, and how they will contribute to the conference.
6. Statement that funding has not been obtained from elsewhere (or what funding has been obtained from other sources)

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Application process – Applications can be made at any time to the EAVLD Secretary by email. The application process is illustrated below.

EAVLD Member

Emails application to Secretary:

1. Full name and place of work contact details
2. Career history / CV
3. Conference details, including fit with EAVLD
4. Abstract and acceptance letter (where received)
5. 1 page case for travel grant – should detail why travel grant is needed, what the benefit to them will be, and how they will contribute to the conference.
6. Statement that funding has not been obtained from elsewhere (or what funding has been obtained from other sources)

If successful:

1. Member attends conference
2. Member submits a report for the newsletter
3. Member provides evidence of payment (travel or registration)

EAVLD Board

Secretary:

1. Contact board to find 2 other members to evaluate application
2. Board evaluate application and respond in 30 days
3. Record of bursary applications and decisions maintained

Secretary - Upon receipt:

1. Checks information submitted and pass to treasurer for payment
2. Treasurer arranges bursary payment to member
3. Record of bursary applications and decisions maintained

1st Nordic Veterinary Serology Meeting

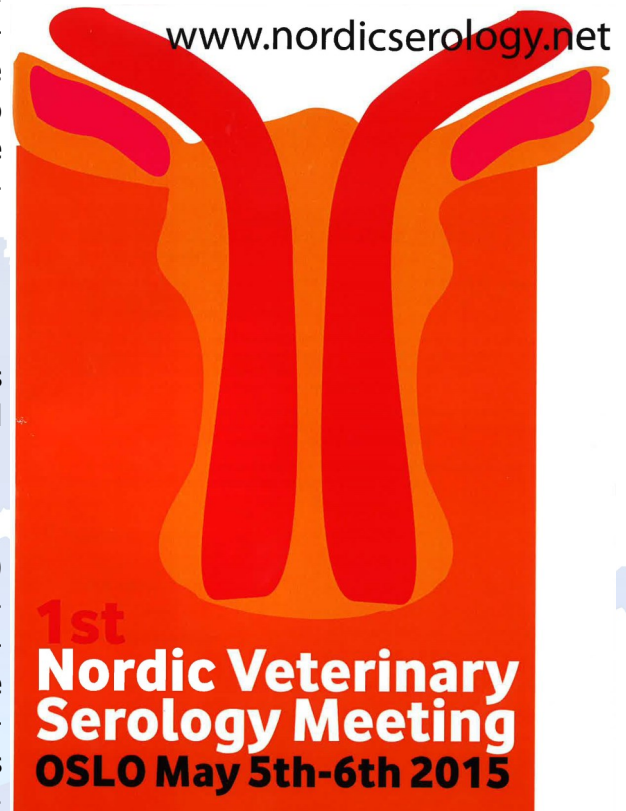
By initiative of the Norwegian Veterinary Institute a meeting was organized 5th and 6th May 2015 in Oslo, Norway with the aim of bringing together people working with serology in the Nordic countries to discuss scientific and practical issues and exchange knowledge, experiences and ideas. The main sponsors of the meeting was IDVet and the Norwegian Veterinary Institute.

The meeting was attended by about 30 scientists from Nordic veterinary diagnostic laboratories and invited speakers from the UK and France.

The 1st Nordic Veterinary Serology Meeting (NVSM) had presentations from the National Veterinary Institutes from Sweden, Denmark, Finland and Norway, and the private Danish Laboratory for Swine Diseases. Focus in the presentations was on disease surveillance programs and diagnostic activities in serology. The meeting also offered talks by invited speakers on specific diseases and disease complexes.

On the second day of the meeting a round table discussion was held debating issues that identified common interest and possible collaborative points with regard to sero-diagnostic activities between the National Veterinary Institutes of the Nordic countries.

At the end of the 1st NVSM, the general impression was that this type of meeting was very useful for the participants as they got to know each other better and now have a more precise picture of the activities and interests of their 'sister institutes' in some of the neighboring countries. It was the intention that there most likely will be a 2nd NVSM.





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	<h2>European Union Reference Laboratory for Classical Swine Fever</h2>	
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University of Veterinary Medicine, Department of Infectious Diseases, Institute of Virology, Hannover, Germany

The coordinator and supervisor of the European Classical Swine Fever Laboratories

In 1980 the Institute of Virology, Veterinary School Hannover, Foundation was nominated for the first time as European Union Reference Laboratory (EURL) for Classical Swine Fever, hence this year it is celebrating its 35th anniversary.

The EURL for Classical Swine Fever (CSF) ensures the quality of CSF diagnosis and control of the disease by counselling and supervision of the National Reference Laboratories (NRLs) of the European Union Member States, associated and candidate countries; a work that is crucial for free trade with regard to pigs and pig products.

Five scientists and four technicians, specialized in classical virology, serology and molecular biology techniques comprise the EURL for CSF team. In addition, two secretaries and personnel responsible for technical services, animal keeping, and maintenance as well as media preparation support the team (Figure 1).

Classical Swine Fever (synonymously called Hog cholera), results from infection by classical swine fever virus and is a highly contagious disease, listed by the World Organisation for Animal Health (OIE). Only swine are susceptible to the disease (domestic and feral pigs), humans are not affected.

Pigs generally acquire the disease by direct contact with other infected pigs and by oral uptake of contaminated feed or liquid. The infection may cause abortions, mummification, stillbirth, fever, haemorrhages and wasting and is often accompanied by secondary infections due to immunosuppression. Some animals develop a long-term chronic course of the disease, leaving the respective pigs as constant virus shedders. These individuals are of particular importance for the epidemiology of the disease. Clinical signs and necropsy findings of CSF are varying and can be mistaken for other febrile illnesses, thus final confirmation can only be made by laboratory diagnosis.

An outbreak of CSF has significant consequences for the affected country. The disease causes great economic losses for the pig industry, which can be partly attributed to direct (e.g. abortion, death toll, decreased growth rate) and indirect effects of the disease (e.g. culling of infected herds, pre-emptive culling, slaughtering due to animal welfare considerations in a standstill scenario). However, the major share of losses is due to strict international trade regulations, stating that pigs or pig products have to be officially free from CSF.

Eradication plans encompassing strict control measures, preventive culling and emergency vaccination strategies are applied. However, the aim to eradicate CSF is severely aggravated by the fact that it is very difficult to control and eliminate the disease in feral pigs and wild boar, which can function as a reservoir for the pathogen. CSF is still endemic in the wild boar population in some parts of the European continent, posing a constant threat to domestic pigs in the affected regions. In particular holdings with low biosecurity levels are at risk. Accordingly, reintroduction of CSF virus into the domestic pig population and rapid

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spread due to high frequency of animal movements and intensive trade within Europe is not an unlikely scenario. Devastating effects would be the consequence, in particular in regions with high pig density.

"By harmonizing the strategies for CSF diagnosis and control among the member states, great strides have been made towards the eradication of CSF within the EU. Nevertheless, it is important to remain vigilant, as despite this progress CSF still constitutes a considerable threat to the European pig and wild boar population," says Paul Becher, the director of the EURL for CSF.



Figure 1: Organizational chart of the EURL for CSF; including current responsible staff at the Institute of Virology, University of Veterinary Medicine.

Within the EU there have been several major outbreaks of classical swine fever in the past, but during the last decade the total number of outbreaks has decreased substantially and at the moment the situation in most member states is stable. In the last few years outbreaks have been limited to the Baltic region at the north eastern border of the EU.

Core tasks of the EURL for CSF

The major task of the EURL is to harmonize the diagnostic work which is carried out by the competent national reference laboratories in each member state. This encompasses

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regular quality control of diagnosis as well as remote and on-site assistance with regard to procedures and methods for monitoring and diagnosis of CSF.

The EURL focusses on improving the standardization of diagnostic testing in the EU by conducting a comprehensive inter-laboratory comparison test (ILCT) on an annual basis. About 40 to 60 national reference laboratories are participating each year; not only the EU member states can take part in this proficiency testing, but also laboratories from associated, candidate and third countries are invited.

"Our test comprises roughly about twenty blinded samples. The laboratories have to analyse them for the presence of infectious virus, genome and antigen of CSFV. In addition, we are asking for results in serology testing; antibody ELISA but also confirmation by virus neutralization assay with CSFV and differentiation of antibody response derived from infection with other pestiviruses. The test is quite complex, but the good performance underlines the high level of CSF diagnosis carried out in the NRLs" says Sophia Austermann-Busch, coordinator of the EURL for CSF and head of the classical virology and serology unit.

The EURL is also responsible for confirming test results in case of a suspected outbreak of the disease within an EU member state, and provides advanced analysis with regard to epidemiological investigations upon request.

The activities of the reference laboratory are not merely limited to check of diagnostic performance. Organization of training courses in different diagnostic techniques and workshops focusing on practical approaches with reference to epidemiology and control of CSF are also



Figure 2: The 2012 Workshop on laboratory diagnosis of CSF and ASF NRLs was held at the University of Veterinary Medicine, Hannover, Germany in June 2012

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part of the agenda. When visiting the partner laboratories, the EURL personnel also provide consulting and assistance on-site.

Besides technical assistance for the partner laboratories, expert advice is also provided to the Commission by active participation of the EURL's technical director, Paul Becher, in the CSF sup-group of the EU Task Force on eradication of animal diseases.

Continuous improvement of diagnostic techniques and state-of-the-art approaches with reference to the control of CSF are essential for being one step ahead of the disease.



Figure 3:
Individual training sessions on CSF



Figure 4:
Workshop on CSF: Clinical signs, epidemiology and control

"The EURL and the national reference laboratories constitute a well-functioning network, this is actually the backbone of prompt information exchange in terms of all relevant news regarding CSF," says Sophia Austermann-Busch.

For maintaining this vital network, the reference laboratory organizes a meeting every year, together with the colleagues from the EU reference laboratory for African swine fever, in which the ILCT results are discussed and representatives from the national reference laboratories present latest research findings and data about the disease status in their country.

The EURL holds a huge collection of CSFV strains and isolates, both field and reference strains. The institute started collecting CSFV isolates in 1964 and the virus bank now comprises more than 1000 virus isolates from all over the world. The collection is well characterized, and can be applied for epidemiological and pathogenic studies. In addition, sequence and background information of the CSFV collection and of additional isolates is accessible to the public on the institute's homepage via the "Classical Swine Fever Database", established by the EURL.

"The CSF database includes an easy-to-use tool for automated genetic typing, so the laboratories can apply a standardized procedure for gaining epidemiological information, facilitating profound investigations with regard to possible sources of an outbreak," says Alexander Postel, head of the molecular biology department at the EURL.



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For continuous performance control of applied diagnostic assays, validation of new techniques and control of diagnostic reagents, the use of reference material is indispensable to a laboratory. Besides CSFV strains from the virus collection, the EURL also provides well-characterized sera (including an official serum panel for CSF antibody ELISA quality control), and CSFV-positive organ samples to the NRLs; these samples derived from infection studies carried out at the institute. Information about the material in stock can be obtained from the "Classical Swine Fever - Serum and Tissue Database" on the institute's homepage.

Once a year, the EURL collects and reviews data from the national laboratories related to monitoring of CSF in domestic pigs and wild boar within the countries and a compilation of these data is made available to the representatives of the community of national reference laboratories on the homepage.

A transparent insight into the epidemiological situation regarding CSF in wild boar, in particular in cross-border areas, is essential for establishing adequate control measures at short notice and before the disease enters a country, as well as for monitoring the existing control measures. Therefore the "CSF in wild boar surveillance database" on the epidemiology of classical swine fever in wild boar was established in collaboration with Friedrich-Loeffler-Institute, Germany. It functions as an early warning system and a decision support tool for local and regional veterinary authorities of participating member states in order to detect trans-boundary disease threats and to prevent incursion of CSF virus by establishing appropriate measures.

At the Institute of Virology in Hannover, there is a long tradition of pestivirus research including work on CSFV. Research activities comprise basic research, applied research and last but not least optimization of methods performed at the EURL. One example for applied research activities is the recent participation in an EU financed research group working on development of new recombinant live attenuated marker vaccines and corresponding serological assays. Background is the change of paradigm in the EU from a strict stamping-out policy to the possibility of emergency vaccination. Within the EU, prophylactic vaccination against CSF is prohibited, but emergency vaccination may supplement control measures in the event of an outbreak. Live, attenuated CSF vaccines provide strong protection, but until now vaccinated pigs cannot safely be distinguished from animals that have recovered from a field infection. Therefore culling of vaccinated pigs and prolonged trade restrictions are inevitable after application of such a vaccine. A possible solution is the use of marker vaccines based on the concept that antibodies from vaccinated swine can be distinguished from antibodies raised after a field virus infection. Only recently one of the "new generation" marker vaccines developed and tested by the research group has officially been licensed in the EU.

"One has to keep in mind that a marker vaccine is only as good as the accompanying discriminatory diagnostic assay, so a highly sensitive and specific assay could considerably benefit the application of marker vaccines under field conditions," says Denise Meyer, one of the scientists in the EURL team.

For this reason, part of ongoing research activities at the EURL is focused on the development, optimization and evaluation of proper accompanying diagnostic assays, making application of marker vaccines for the control of CSF outbreaks a feasible option.

Visit our website for more information about us:



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<http://www.tiho-hannover.de/kliniken-institute/institute/institut-fuer-virologie-zentrum-fuer-infektionsmedizin/eu-and-oie-reference-laboratory/>

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The EURL is also one of the OIE Reference Laboratories for Classical Swine Fever.

