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Happy First Birthday To ESFLU!

So far it has been a very enriching journey, full of interactions, plans and developments. We started our network with 76 members from 25 countries and completed our first year with 151 members from 30 countries.

This first year was highly dedicated to structuring the network and gathering experts virtually and physically, with the launch meeting in Brussels on the 7th November, our first annual meeting in Barcelona in April 2023 and a laboratory training in Deventer in September 2023. Numerous virtual meetings have been held on diverse topics in which ESFLU has committed to work. Five scientists visited laboratories to learn about techniques. ESFLU also ran a survey on swine flu surveillance across Europe and a literature review on swine vaccine efficacy. We had our first collection of swine flu virus sequences and the harvest was excellent, with about 1750 sequences from 250 strains shared by 16 countries. A selection of these sequences is to be shared with the global animal flu network, OFFLU this year.

In this second year of the network, we expect more results, more people trained in laboratory methods and phylogenetics and to deliver scientific communications and a first version of guidelines on how to better prevent and control swine flu on farms. We will hold our annual meeting as well as smaller meetings on laboratory procedures, socio-anthropology needs for swine flu, and the zoonotic impact of swine flu.

Gwen Dauphin, ESFLU chair

ESFLU gathers 76 experts in an interdisciplinary One Health approach. The Action will advance scientific knowledge concerning swIAV, improve disease surveillance and management capabilities, benefit pork production and reduce risks to both animal and human health.

Great success in the 1st ESFLU – COST Action Training School on Swine Influenza A Diagnostics, hosted by Royal GD

From 5th to 8th of September, Royal GD, Deventer, hosted the first training school on “Monitoring, identification and characterisation of swine influenza A virus” within the WG 1 of the ESFLU- Cost action (“Strengthening the capability in Europe for the identification and characterisation of swine influenza A virus -swIAV-”). The training school was aimed primarily at young scientists who work in veterinary research and are either directly involved in swine influenza surveillance, detection, prevention and control, or have research interest focused on swIAV. The overall aim of the course was to strengthen laboratories’ capacities in these areas. The course attracted great interest, with a total of fourteen participants from different European countries. Invited speakers from Royal GD (Manon Houben and Lucía Dieste Pérez) showed the diagnostics facility of Royal GD to the participants and explained about the role of Royal GD in the monitoring of animal health in the Netherlands, including their experience in the national monitoring program of swine Influenza.

Katrin Lillie-Jaschniski (CEVA Animal Health) shared her extended experience in the diagnostic and



control of swine influenza at farm level.

Sasan Fereidouni (University of Vienna) gave some guidelines regarding the sample handling, storage, and transport to national and international laboratories, the role of wildlife in the epidemiology of swine influenza, and also practical session on using LAMP kits in routine diagnostic.

Keiko Watanabe, Tsuyoshi Shindome, Shota Koyano, Kiyokazu Kanemoto, and Yoshitake Minemura from EIKEN (Japan), conducted an online lecture and demonstration on principle and practical steps of LAMP assays.

Annika Graaf-Rau (FLI) presented the different steps and techniques regarding the molecular diagnosis of swine Influenza, including a practical 3rd generation sequencing session with nanopores.

Erhard van de Vries (Royal GD) shared his knowledge on the most advanced techniques for the characterisation of swine influenza strains.



Evelin Germeraad (WBVR) and **Mathilde Richard (EMC)** gave insights into the serological diagnostics for swine influenza, the principles of antigenic cartography and its role in the monitoring of swine influenza.

Following the theory sessions, practical sessions allowed the participants to follow the different steps of the molecular diagnosis of swine Influenza, a LAMP test themselves and have hands-on training with nanopore sequencing. During these practical sessions there was time for discussions and exchange of experiences.

Successful completion of all sessions was documented with a certificate. This training school was initially a pilot event, where participants had the opportunity to comment on their feedback to improve the course. Participants highlighted the possibilities of networking and discussions during the training, they really enjoyed the practical sessions, and they appreciated the diverse profile of the speakers.

After revision, the course could be repeated for training a broad dispersed professional audience. We would like to express our sincere thanks for the excellent cooperation with the colleagues from various institutes that contributed either as trainers or trainees, as well as the lively and interactive exchange of knowledge with the course participants. We are glad to be involved in such an important initiative – it was a great success!

Organising Committee: Lucía Dieste Pérez, Annika Graaf-Rau, Sasan Fereidouni, Ronald Dijkman.

ESFLU Working Groups

WG 1: Strengthen the capability in Europe for the identification and characterisation of swine influenza virus

Leader: Sasan Fereidouni

Co-leader: Annika Graaf

- To share and exchange protocols and SOPs in order to strengthen capability for the detection and characterisation of swine influenza A virus circulating in Europe
- To share information on ferret/swine reference antisera panels

WG 2: Increase sharing and analyses of surveillance and virology data

Leader: Gautier Richard

Co-leader: Alexander Byrne

- To share and analyse contemporary data obtained using the SOPs exchanged in WG1
- To provide pan-European analysis of viral sequence data
- To share and compile surveillance modalities and results
- To share and compile HI data for antigenic cartography

WG 3: Foster knowledge exchange on surveillance and management measures to improve control of swIAV in pig herds

Leader: Lars Larsen

Co-leader: Marie Sjolund

- To review and discuss current surveillance schemes and diagnostic sampling frames.
- To conduct a cost benefit analysis of improved surveillance and a risk assessment of emerging influenza variants
- To suggest optimized sampling frames for surveillance and exchange tools for analysis of data from field trials
- To establish a platform for sharing of evidence-based data on swIAV with policy-makers, public institutions and authorities

WG 4: Dissemination, communication and awareness

Leader: Dinko Novosel

Co-leader: Tijds Tobias

- To communicate information to stakeholders, policymakers and the general public
- To raise awareness on swine influenza and its risk for public health
- To contribute to a One Health approach to swine flu

STSM Report – Gavril A. Puspitarani and Kasper Pedersen

In the recent STSM, the team achieved significant contributions to ESFLU's objectives. They cleaned and organized survey data, creating an inventory of surveillance systems across Europe, and actively participated in scientific discussions. Preliminary descriptive analyses were conducted, focusing on the Swine Influenza Surveillance Program. Moreover, the STSM featured field visits, including university facilities and the Royal GD laboratory.

The team also prioritized networking during their STSM, fostering connections within the Farm Animal Health unit at Utrecht University. They collaborated closely with Tijs Tobias as the welcoming host institution and established a productive working relation, including Gavril A. Puspitarani and Kasper Pedersen from The University of Veterinary Medicine, Vienna (Vetmeduni) and University of Copenhagen, respectively. Interactions with other ESFLU STSM participants further enriched their collaborative efforts.

The STSM participants also had the opportunity to experience the Dutch culture during their stay. They explored Utrecht by bicycle, which was made easy by the city's bike-friendly infrastructure.



They also indulged themselves in Dutch cuisine, enjoying local specialties like pancakes and Indonesian dishes, which added a rich cultural dimension to their experience. The STSM wasn't just about research; it was a fun and immersive cultural adventure.

Their future plans are to provide cleaned R scripts for transparency in data processing, hold remote meetings to refine our findings, results dissemination, and prepare a document for conference submission.



Scientific Meeting

Barcelona, 25-27th April 2023

01. Scientific landscape within ESFLU

- Scientific landscape within ESFLU – *L. Dieste Perez*

02. PhD thesis

- Swine influenza A virus dynamics at pig farms – *E. Germeraad*
- Presentation of PhD – *O. Mtaallaha*
- Lack of seroconversion in pigs infected by influenza A at early ages in endemic farms – *I. Carreño*

03. Research projects

- Horizon Europe – FARM2FORK Project
I. Chantziaras
- An integrative One Health network to monitor and characterize influenza A viruses circulating in the human and pig population
R. Dijkman
- Biosecurity Enhanced Through Training Evaluation and Raising Awareness – A new COST Action to improve biosecurity in livestock
A. Allepuz
- Genetic diversity of Swine influenza A viruses and their implication on pig production and public health
A. Dodovski

04. Surveillance programs

- Influenza A virus infection in Norwegian pigs–active serosurveillance
Jwee Chiek Er
- Current situation of swine influenza virus in Poland
K. Urbaniak
- National Swine Flu Surveillance Program
E. van der Vries, PhD
- Serological and molecular investigation of influenza in commercial pig farms in Serbia
J. Maksimovic Zoric
- The monitoring of Swine influenza virus in pig herds in Slovenia
J. Plut

05. General swine flu topics

- Diagnostic of Influenza in pigs
C. Chiapponi
- Epidemiology of influenza in pigs
E. Mateu
- Influenza virus in pigs in Europe
G. Simon
- Inter-species transmission of swine influenza
L. Larsen



06. Scientific results

- Network analysis of animal movement data as an epidemiological tool
G.A. Puspitarani
- Influenza A(H1N1)pdm09 virus infections decrease growth performance of Norwegian finisher pigs
Jwee Chiek Er
- Low susceptibility of pigs in experimental infection with recent HPAIV H5N1
A. Graaf
- Emergence of swine influenza A virus (swIAV), porcine respirovirus1 (PRV1) and swine orthopneumovirus (SOV) in porcine respiratory disease in Germany
A. Graaf
- Low internal biosecurity: factor that favours maintenance of influenza on commercial farrow to wean pig farm in Serbia
B. Kureljuši
- Molecular methods for the surveillance of IAV in the Danish pig population
C.K. Hjulsager
- Viral evolution of swIAV in Denmark
P. Ryt-Hansen
- Cross-sectional study comparing different sampling materials for monitoring or surveillance of swine Influenza A virus in enzootic infected pig herds
J. Stadler
- Within-flock model for avian influenza
C. Kirkeby
- Intra-farm circulation of swine influenza virus in North-east Italy between 2013 and 2020
L. Cavicchio

● Abstract Book now available online [here](#)