



**ESFLU**  
European Swine  
Influenza Network

# ESFLU Scientific Meeting

21-23<sup>th</sup> May 2024  
the Aristotle University Research Dissemination  
Center  
Thessaloniki

## Abstract Book

**Organising committee:**

Katarzyna Podgórska, Gwenaëlle Dauphin, Lucia Dieste Pérez, Dinko Novosel,  
Dimitrios Papadopoulos; Konstantinos Papageorgiou  
Contact: [esflu@swineflu.eu](mailto:esflu@swineflu.eu)



Funded by  
the European Union



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## SEROLOGICAL EVIDENCE OF EXPOSURE TO INFLUENZA A IN DIFFERENT AGE CATEGORIES IN PIG FARMS IN SERBIA

Maksimović Zorić, Jelena, Veljović, Ljubiša, Glišić, Dimitrije, Radosavljević, Vladimir, Jezdimirović, Nemanja, Maletić, Jelena, Kureljušić, Branislav

*Scientific Institute of Veterinary Medicine of Serbia*

### ABSTRACT:

Swine influenza is a respiratory disease of pigs caused by different strains of the H1N1, H3N2, and H1N2 subtypes of influenza A virus. In commercial pig farming, this infection causes significant direct and indirect losses, mainly when co-infections with other viral and bacterial pathogens occur. Because of the occasional introductions and spread of porcine influenza viruses in the human population, this is also a disease of public importance. Therefore, monitoring of this infection on commercial pig farms is extremely important. Typically, detecting specific antibodies against the influenza virus is the first choice method for this purpose. In laboratory conditions, the immune response is already detectable on the third day after the infection, with the peak antibody level between the 14th and 21st. The immunity is long-lasting and protects against infection with the homologous or antigenically similar strain. To determine the rate of seropositivity and serotypes of circulating influenza A virus, we examined sera from different age categories of pigs raised on commercial farms.

The investigation included 625 sera from pigs reared on six commercial farms that do not apply vaccination as a disease control measure and partially implement internal and external biosecurity measures. Sera originated from suckling piglets, nursing pigs, sows, and boars. All samples were tested using a commercial ELISA (Influenza A Ingezim kit, Ingenasa, Spain) according to the manufacturer's instructions. Based on the results obtained from the ELISA test, 64 sera were selected for serotyping. The inhibition of hemagglutination (IHA) was conducted in accordance with the protocol in WHO guidelines for the diagnosis and surveillance of influenza in animals. The reference viruses used in this study were obtained from the WOAHA Reference Laboratory for Swine Influenza (IZSLER) and included two strains of the H1N1 subtype and one of each strain of the H3N2 and H1N2 subtypes.

By examining 625 pig sera by ELISA, an overall seropositivity rate of 72.8% was established. The highest rate was established among tested sows (95.3%), while in a group of suckling piglets and nursing pigs, 70% were positive. In comparison to the results of ELISA, IHA revealed lower sensitivity for 64 selected sera (81.25%), which can be related to the antigenic divergence of circulating and laboratory strains. Using the IHA, 52 pig sera from 4 farms were successfully typed. Specific antibodies against the H1N2 subtype were not detected in any of the tested sera, while H1N1 and H3N2 antibodies were detected in pigs on all tested farms. Antibodies against two or three strains were established in 65.4% of the analyzed sera. This research indicates the widespread presence of influenza on commercial pig farms and the circulation of H1N1 and H3N2 subtypes of influenza A virus.