World Organisation for Animal Health

Chiara Chiapponi - - ITALY

# WOAH Reference Laboratory Reports Activities 2024

**This report has been submitted: 22 janvier 2025 14:55**

## LABORATORY INFORMATION

| | |
|---|---|
| ***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:** | Swine influenza |
| ***Address of laboratory:** | Via Bianchi 9 25124 Brescia |
| ***Tel:** | +39 (0)52129.37.33 |
| ***E-mail address:** | chiara.chiapponi@izsler.it |
| **Website:** | www.izsler.it |
| ***Name (including Title) of Head of Laboratory (Responsible Official):** | Dr. Giorgio Varisco, General Director |
| ***Name (including Title and Position) of WOAH Reference Expert:** | Dr. Chiara Chiapponi, senior scientist |
| ***Which of the following defines your laboratory? Check all that apply:** | Governmental |

## TOR1: DIAGNOSTIC METHODS

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

| Diagnostic Test | Indicated in WOAH Manual (Yes/No) | Total number of test performed last year | |
|---|---|---|---|
| Indirect diagnostic tests | | Nationally | Internationally |
| HI | Yes | 5075 | 2621 |
| ELISA anti-NP | Yes | 541 | 887 |
| Direct diagnostic tests | | Nationally | Internationally |
| Real-time RT-PCR | Yes | 2339 | 73 |
| | | | |

| | | | |
|---|---|---|---|
| Multiplex RT-PCR for subtyping | Yes | 150 | 46 |
| Cell culture isolation | Yes | 197 | 31 |
| Embryonated chicken eggs inoculation | Yes | 118 | 11 |
| NGS full genome sequencing | No | 144 | 10 |

# TOR2: REFERENCE MATERIAL

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by WOAH?

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOAH Members?

Yes

| Type of reagent available | Related diagnostic test | Produced/ provide | Amount supplied nationally (ml, mg) | Amount supplied internationally (ml, mg) | No. of recipient WOAH Member Countries | Country of recipients |
|---|---|---|---|---|---|---|
| Swine influenza virus (multiple subtypes) | HI characterization against the relevant ferret antisera (CVV evaluation) | provided | 0 | 5 ML | 1 | UNITED KINGDOM, |
| Swine influenza virus (multiple subtypes) | HI test | provided | 0 | 180 ML | 1 | UKRAINE, |
| Swine influenza virus (multiple subtypes) | HI test | provided | 0 | 10 ML | 1 | POLAND, |
| RNA from H1N2 IAV-S | RT-PCR | produced and provided | 0,2 ML | 0 | 1 | ITALY, |

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

No

# TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

No

7. Did your laboratory validate diagnostic methods according to WOAH Standards for the designated pathogen or disease?

Yes

| Name of the new test or diagnostic method developed | Description and References (Publication, website, etc.) |
|---|---|
| Multiplex RT-PCR for subtyping | The validation is available upon request from the IZSLER website. Ref of the method. doi: 10.3390/v14010047 |
| ELISA anti-NP. (ID Screen® Influenza A Nucleoprotein Swine | |

| | |
|---|---|
| Indirect) | The validation is available upon request from the IZSLER website. |

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

No

9. Did your laboratory validate vaccines according to WOAH Standards for the designated pathogen or disease?

No

# TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAH Members?

Yes

| Name of WOAH Member Country seeking assistance | Date | Which diagnostic test used | No. samples received for provision of diagnostic support | No. samples received for provision of confirmatory diagnoses |
|---|---|---|---|---|
| CYPRUS | 2024-01-01 | ELISA anti-NP | 90 | 0 |
| CYPRUS | 2024-05-31 | ELISA anti-NP | 10 | 0 |
| CYPRUS | 2024-06-30 | ELISA anti-NP | 50 | 0 |
| CYPRUS | 2024-09-30 | ELISA anti-NP | 40 | 0 |
| CYPRUS | 2024-10-31 | ELISA anti-NP | 19 | 0 |
| CYPRUS | 2024-05-31 | HI test | 40 | 0 |
| CYPRUS | 2024-06-30 | HI test | 172 | 0 |
| CYPRUS | 2024-09-30 | HI test | 116 | 0 |
| CYPRUS | 2024-10-31 | HI test | 40 | 0 |
| CYPRUS | 2024-01-01 | real-time PCR | 1 | 0 |
| CYPRUS | 2024-01-31 | real-time PCR | 6 | 0 |
| CYPRUS | 2024-06-30 | real-time PCR | 3 | 0 |
| CYPRUS | 2024-09-30 | real-time PCR | 1 | 0 |
| CYPRUS | 2024-01-01 | Multiplex RT-PCR Subtyping | 1 | 0 |
| CYPRUS | 2024-01-31 | Multiplex RT-PCR Subtyping | 2 | 0 |
| SPAIN | 2024-01-01 | HI test | 8 | 0 |
| GREECE | 2024-01-31 | ELISA anti-NP | 127 | 0 |
| GREECE | 2024-02-29 | ELISA anti-NP | 83 | 0 |
| GREECE | 2024-03-31 | ELISA anti-NP | 69 | 0 |
| GREECE | 2024-04-30 | ELISA anti-NP | 32 | 0 |
| GREECE | 2024-05-31 | ELISA anti-NP | 50 | 0 |
| GREECE | 2024-06-30 | ELISA anti-NP | 29 | 0 |
| GREECE | 2024-07-31 | ELISA anti-NP | 7 | 0 |
| GREECE | 2024-08-31 | ELISA anti-NP | 96 | 0 |
| GREECE | 2024-09-30 | ELISA anti-NP | 25 | 0 |
| GREECE | 2024-10-31 | ELISA anti-NP | 97 | 0 |

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| | | | | |
|---|---|---|---|---|
| GREECE | 2024-11-30 | ELISA anti-NP | 62 | 0 |
| GREECE | 2024-01-31 | HI test | 332 | 0 |
| GREECE | 2024-02-29 | HI test | 104 | 0 |
| GREECE | 2024-03-31 | HI test | 276 | 0 |
| GREECE | 2024-04-30 | HI test | 128 | 0 |
| GREECE | 2024-05-31 | HI test | 148 | 0 |
| GREECE | 2024-06-30 | HI test | 20 | 0 |
| GREECE | 2024-07-31 | HI test | 20 | 0 |
| GREECE | 2024-08-31 | HI test | 224 | 0 |
| GREECE | 2024-09-30 | HI test | 68 | 0 |
| GREECE | 2024-10-31 | HI test | 184 | 0 |
| GREECE | 2024-11-30 | HI test | 224 | 0 |
| GREECE | 2024-06-30 | real-time PCR | 12 | 0 |
| GREECE | 2024-08-31 | real-time PCR | 4 | 0 |
| GREECE | 2024-09-30 | real-time PCR | 3 | 0 |
| GREECE | 2024-10-31 | real-time PCR | 2 | 0 |
| GREECE | 2024-06-30 | Multiplex RT-PCR Subtyping | 2 | 0 |
| GREECE | 2024-08-31 | Multiplex RT-PCR Subtyping | 1 | 0 |
| GREECE | 2024-09-30 | Multiplex RT-PCR Subtyping | 1 | 0 |
| PORTUGAL | 2024-06-30 | HI test | 0 | 12 |
| PORTUGAL | 2024-08-31 | HI test | 0 | 9 |
| PORTUGAL | 2024-09-30 | HI test | 0 | 42 |
| PORTUGAL | 2024-10-31 | HI test | 0 | 234 |
| PORTUGAL | 2024-11-30 | HI test | 0 | 220 |
| PORTUGAL | 2024-06-30 | real-time PCR | 0 | 2 |
| PORTUGAL | 2024-07-31 | real-time PCR | 0 | 7 |
| PORTUGAL | 2024-08-31 | real-time PCR | 0 | 8 |
| PORTUGAL | 2024-10-31 | real-time PCR | 0 | 14 |
| PORTUGAL | 2024-11-30 | real-time PCR | 0 | 10 |
| PORTUGAL | 2024-06-30 | Multiplex RT-PCR Subtyping | 0 | 2 |
| PORTUGAL | 2024-07-31 | Multiplex RT-PCR Subtyping | 0 | 5 |
| PORTUGAL | 2024-08-31 | Multiplex RT-PCR Subtyping | 0 | 7 |
| PORTUGAL | 2024-09-30 | Multiplex RT-PCR Subtyping | 0 | 5 |
| PORTUGAL | 2024-10-31 | Multiplex RT-PCR Subtyping | 0 | 14 |
| PORTUGAL | 2024-11-30 | Multiplex RT-PCR Subtyping | 0 | 6 |

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAH Member?

Yes

| Name of the WOAH Member Country receiving a technical consultancy | Purpose | How the advice was provided |
|---|---|---|
| DENMARK | training | lab hosting |
| POLAND | HI test antigen selection | by mail and viral strains providing |
| BELGIUM | molecular protocols exchange | by mail |

# TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH Members other than the own?

Yes

| Title of the study | Duration | Purpose of the study | Partners (Institutions) | WOAH Member Countries involved other than your country |
|---|---|---|---|---|
| Understanding the dynamics and evolution of swine influenza viruses in Europe: relevance for improved intervention and sustainable pig production (PIGIE) | 2021-2024 | ICRAD Co-Funded Project: Research Area 1: Improved understanding of epidemic and emerging infectious animal diseases | French Agency for Food, Environmental and Occupational Health & Safety (ANSES), Animal and Plant Health Agency (APHA),Friedrich-Loeffler-Institut (FLI), University of Copenhagen (UCPH),Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna (IZSLER), Universitat Autònoma de Barcelona (UAB) | DENMARK FRANCE GERMANY SPAIN UNITED KINGDOM |
| Swine influenza data for OFFLU contribution to WHO vaccine composition meeting | annual | To share animal influenza data with WHO in order to assist with selection of the most appropriate viruses for human vaccines, which can include animal viruses that present a potential to emerge into pandemic threats. | OFFLU partners | |
| | | | Medicine, AUT; Faculty of Veterinary Medicine;ANSES Ploufragan-Plouzané- Niort Laboratory;Finnish Food Authority Ruokavirasto;University of Helsinki;Animal and Plant Health Agency;Aristotle | |

| | | | | |
|---|---|---|---|---|
| COST Action CA21132, European Swine Influenza Network (ESFLU) | 2022-2026 | 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. | University of Thessaloniki; Croatian veterinary Institute;Istituto zooprofilattico sperimentale delle venezie; Istituto Zooprofilattico Sperimentale della Lombardia ed Emilia Romagna;Teagasc; Norwegian Veterinary Institute;The Norwegian Veterinary Institute;Utrecht University;Royal GD Animal Health; FCIENCIAS.ID - ASSOCIACAO PARA A INVESTIGACAO E DESENVOLVIMENTO DE CIENCIAS; Faculty of Veterinary Medicine of the University of Lisbon; Institute for Research and development in Montanology;University Of Agricultural Sciences and Veterinary Medicine;Department of Animal Health and Antimicrobial Strategies; University of Ljubljana, Veterinary faculty; University of Sarajevo - Veterinary Faculty; Veterinary faculty, Veterinary institute; Diagnostic Veterinary Laboratory; Institute of Veterinary Medicine of Serbia; Scientific Veterinary Institute "Novi Sad"; University of Ghent | ALBANIA AUSTRIA BELGIUM BOSNIA AND HERZEGOVINA BULGARIA CROATIA CZECH REPUBLIC DENMARK FINLAND FRANCE GERMANY GREECE IRELAND LUXEMBOURG MONTENEGRO NORWAY POLAND PORTUGAL ROMANIA SERBIA SLOVAKIA SLOVENIA SWEDEN SWITZERLAND THE NETHERLANDS UNITED KINGDOM |

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

No

# TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:

Viral strains are isolated for genetic and antigenic characterization. Origin and date of sampling are collected

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

Yes

| If the answer is yes, please provide details of the data collected: |
| --- |
| Sequencing data, origin and date of sampling (OFFLU-VCM) |

16. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category and list the details in the box)

a) Articles published in peer-reviewed journals:

*0*

b) International conferences:

*8*

*-AGERLIN MV, SIMON G, MATEU_DE_ANTONIO EM, EVERETT HE, CHIAPPONI C, HARDER T, DAUPHIN G, FABLET C, RYT-HANSEN P, MARTIN VALLS GE, MOLLET B, SOLIANI L, GRAAF-RAU A, HERVÉ S, CORONADO L, LEETHAM S, LUPPI A, LILLIE-JASCHNISKI K, THIROUX S, GORIN S, RICHARD G, DEBLANC C, ANDRAUD M, PROSPERI A , ROSE N, WEBER NR, GOECKE NB, LARSEN LE. Swine influenza A virus and its co-infections: a perspective from six European countries. International Pig Veterinary Society Congress (IPVS) : 27th European Symposium on Porcine Health Management (ESPHM) : 15th: Leipzig, Germany: June 4-7, 2024*

*-Ana Moreno; Anna Castelli; Laura Soliani; Tiziana Trogu; Enrica Sozzi; Davide Lelli; Chiara Chiapponi; Alice Prosperi; Silvia Faccini; Carlo Rosignoli; Cristian Salogni; Giovanni Loris Alborali. Antigenic characterization of Swine influenza H1N2 viruses in Italy. 16th EPIZONE Annual Meeting Viruses, vectors and wildlife. 25-27 September 2024. Uppsala, Sweden*

*-Laura Soliani, Ada Mescoli, Laura Baioni, Irene Calanchi, Camilla Torreggiani, Giovanni Alborali, Ana Moreno, Silvia Faccini, Carlo Rosignoli, Giovanni Pupillo, Laura Fiorentini, Alice Prosperi, Andrea Luppi, Chiara Chiapponi. Novel human derived swine influenza A virus H3N2 genotype circulating in pigs in Northern Italy. 16th EPIZONE Annual Meeting Viruses, vectors and wildlife. 25-27 September 2024. Uppsala, Sweden*

*-Mescoli A., Prosperi A., Soliani L., Baioni L., Zanni I., Calanchi I., Torreggiani C., Moreno A., Alborali L., Faccini S., Rosignoli C., Bonilauri P., Pupillo G., Fiorentini L., Tosi G., Luppi A., Chiapponi C. Surveillance and Impact of Influenza A and D Viruses in Swine and Cattle. InFACT Meeting, Pavia,2024, Italy*

*-Christelle Fablet, Timm Harder, Lars E. Larsen, Chiara Chiapponi, Enric Mateu, Helen E. Everett, Séverine Hervé, Alice Prosperi, Shannon Leetham, Andrea Luppi, Gaëlle Simon, Nicolas Rose. Biosecurity: A Room for Improvement in Pig Herds Persistently Infected by Swine Influenza Virus International Society for Animal Hygiene-September 2024, Chiang Mai, Thailand.*

*-MESCOLI A, PROSPERI A, SOLIANI L, BAIONI L, ZANNI I, CALANCHI I, TORREGGIANI C, MORENO MARTIN AM, ALBORALI LG, FACCINI S, ROSIGNOLI C, BONILAURI P, PUPILLO G, FIORENTINI L, TOSI G, LUPPI A, CHIAPPONI C. Genetic variability of influenza a viruses in swine in Northern Italy. Congress of the European Association of Veterinary Laboratory Diagnosticians (EAVLD).Padua, Italy : 21st-23rd October 2024*

*-SOLIANI L, MESCOLI A, BAIONI L, ZANNI I, DE MATTIA A, PROSPERI A, TORREGGIANI C, PILERI E, GUADAGNINI G, PONZONI D, LUPPI A, CHIAPPONI C. Longitudinal study monitoring swine influenza circulation in two swine farms in Northern Italy and post-vaccination follow-up Congress of the European Association of Veterinary Laboratory Diagnosticians (EAVLD) 7th : Padua, Italy : 21st-23rd October*

*2024*
*-Helen Everett and Chiara Chiapponi. KEYNOTE: UPDATE ON SWINE INFLUENZA DIAGNOSTICS CHALLENGES. ESFLU scientific meeting, 21-23 May 2024, Thessaloniky-Greece*

c) National conferences:

*1*
*- Chiapponi C., Prosperi A., Soliani L., Baioni L., Zanni I., Calanchi I., Torreggiani C., Moreno A., Alborali L., Faccini S., Rosignoli C., Bonilauri P., Pupillo G., Fiorentini L., Tosi G., Luppi A.VIRUS INFLUENZALI SUINI NEL NORD ITALIA. STUDIO DELLE FORME EPIZOOTICHE ED ENZOOTICHE NEGLI ALLEVAMENTI ATTI DELLA SOCIETÀ ITALIANA DI PATOLOGIA ED ALLEVAMENTO DEI SUINI-2024, BRESCIA, ITALY.*

d) Other (Provide website address or link to appropriate information):

# TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH Members?

Yes

a) Technical visit : 1

b) Seminars : 1

c) Hands-on training courses: 0

d) Internships (>1 month) 0

| Type of technical training provided (a, b, c or d) | Country of origin of the expert(s) provided with training | No. participants from the corresponding country |
|---|---|---|
| A | DENMARK | 1 |
| B | DENMARK | 2 |
| B | UNITED KINGDOM | 1 |
| B | ITALY | 4 |
| B | NORTH MACEDONIA (REP. OF) | 1 |
| B | SPAIN | 1 |
| B | FRANCE | 1 |
| B | PORTUGAL | 1 |
| B | BELGIUM | 1 |
| B | SWITZERLAND | 1 |
| B | THE NETHERLANDS | 1 |

| | | |
|---|---|---|
| B | SERBIA | 1 |
| B | GREECE | 1 |
| B | AUSTRIA | 1 |

# TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

| Quality management system adopted | Certificate scan (PDF, JPG, PNG format) | |
|---|---|---|
| UNI CEI EN ISO/IEC 17025:2018 | Certificate PDF | Accreditation-cert.pdf |

19. Is your quality management system accredited?

Yes

| Test for which your laboratory is accredited | Accreditation body |
|---|---|
| Matrix (M) gene PCR | ILAC-MRA_Accredia |

20. Does your laboratory maintain a "biorisk management system" for the pathogen and the disease concerned?

Yes

The laboratory works according to tha Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4 and WHO Laboratory biosafety manual

# TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAH?

No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAH?

No

# TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

23. Did your laboratory exchange information with other WOAH Reference Laboratories designated for the same pathogen or disease?

Yes

24. Do you network (collaborate or share information) with other WOAH Reference Laboratories designated for the same pathogen?

Yes

| NETWORK/DISEASE | ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC) | NO. PARTICIPANTS | PARTICIPATING WOAH REF. LABS |
|---|---|---|---|
| ESFLU COST Action | Participant | 36 | WOAH reference Laboratory for swine influenza (APHA, UK) |
| ICRAD PIGIE | Participant | 6 | WOAH reference Laboratory for swine influenza (APHA, UK) |
| | | | WOAH reference Laboratory for |

| | | | |
|---|---|---|---|
| OFFLU Swine Influenza virus | Participant | 20 | swine influenza (APHA, UK) WOAH reference Laboratory for swine influenza (Viral Disease and Epidemiology Research Division, National Institute of Animal Health, National Agriculture and Food Research Organizationi-Japan) WOAH reference Laboratory for swine influenza ( USDA, APHIS, USA) |

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen during the past 2 years?

No

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26. Did your laboratory collaborate with other WOAH Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

Yes

| Title of the project or contract | Scope | Name(s) of relevant WOAH Reference Laboratories |
|---|---|---|
| Understanding the dynamics and evolution of swine influenza viruses in Europe: relevance for improved intervention and sustainable pig production-PIGIE (ICRAD) | ICRAD Research Area 1: Improved understanding of epidemic and emerging infectious animal diseases | WOAH reference Laboratory for swine influenza (APHA, UK) |
| COST Action CA21132, European Swine Influenza Network (ESFLU) | 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. | WOAH reference Laboratory for swine influenza (APHA, UK) |

# TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOAH Reference Laboratories for the same pathogen during the past 2 years?

Yes

| Purpose for inter-laboratory test comparisons1 | Role of your reference laboratory (organizer/participant) | No. participating laboratories | Name of the test | WOAH Member Countries |
|---|---|---|---|---|
| Detection of influenza A virus by molecular test | participant | 18 | Influenza A detection by PCR | ITALY, |

# TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOAH?

Yes

| Kind of consultancy | Location | Subject (facultative) |
|---|---|---|
| OFFLU Swine Influenza virus expert technical meeting | April 2024, WOAH Headquarters, Paris, France | . |
| OFFLU Global Technical Meeting | July 2024, FAO Headquarters, Rome, Italy | . |

29. Additional comments regarding your report:

No