

# WOAH Reference Laboratory Reports Activities 2022

## Activities in 2022

### Laboratory Information

<b>Name of disease (or topic) for which you are a designated WOA Reference Laboratory:</b>	Swine influenza
<b>Address of laboratory:</b>	via Bianchi,9 Brescia, Italy
<b>Tel.:</b>	+390521293733
<b>E-mail address:</b>	chiara.chiapponi@izsler.it
<b>Website:</b>	www.izsler.it
<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	Dr. Piero Frazzi, General Director
<b>Name (including Title and Position) of WOA Reference Expert:</b>	Dr. Chiara Chiapponi, senior scientist
<b>Which of the following defines your laboratory? Check all that apply:</b>	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 WOA Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
HI	yes	8933	2633
ELISA	yes	352	0
Direct diagnostic tests			
M gene RT-PCR	yes	2974	5

eggs inoculation	yes	67	0
cell culture inoculation	yes	194	0
multiplex RT-PCR	yes	193	2
NGS sequencing	no	187	7

## TOR2: REFERENCE MATERIAL

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

No

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

Yes

TYPE OF REAGENT AVAILABLE	RELATED DIAGNOSTIC TEST	PRODUCED/ PROVIDE	AMOUNT SUPPLIED NATIONALLY (ML, MG)	AMOUNT SUPPLIED INTERNATIONALLY (ML, MG)	NO. OF RECIPIENT WOA?H MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
11 SWINE INFLUENZA ANTIGENS H1N1	HI test	produced and provided	0	22 ML	3	Europe
13 SWINE INFLUENZA ANTIGENS H1N2	HI test	produced/provided	0	26	1	Europe
5 SWINE INFLUENZA ANTIGENS H1N1pdm	HI TEST	produced and provided	0	10	1	Europe
1 SWINE INFLUENZA ANTIGEN H3N2	HI TEST	produced and provided	0	1	1	Europe

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA?H Members?

No

## TOR3: NEW PROCEDURES

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

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
Nested multiplex PCR for swine influenza A virus subtyping	Chiapponi C, Prosperi A, Moreno A, Baioni L, Faccini S, Manfredi R, Zanni I, Gabbi V, Calanchi I, Fusaro A, Beato MS, Cavicchio L, Torreggiani C, Alborali GL, Luppi A. Genetic Variability among Swine Influenza Viruses in Italy: Data Analysis of the Period 2017-2020. Viruses. 2021 Dec 28;14(1):47. doi: 10.3390/v14010047. PMID: 35062251; PMCID: PMC8781872.

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

No

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

No

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

No

## **TOR4: DIAGNOSTIC TESTING FACILITIES**

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

Yes

NAME OF WOAHS 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	2022-12-13	RT-PCR	10	0
CYPRUS	2022-05-26	HI	35	0
CYPRUS	2022-05-30	HI	35	0
CYPRUS	2022-07-11	HI	35	0
CYPRUS	2022-08-01	HI	34	0
CYPRUS	2022-10-17	HI	55	0
CYPRUS	2022-12-07	HI	20	0
CYPRUS	2022-12-07	HI	20	0
GREECE	2022-01-19	HI	20	0
GREECE	2022-02-22	HI	7	0
GREECE	2022-02-24	HI	36	0
GREECE	2022-02-25	HI	9	0
GREECE	2022-04-15	HI	50	0
GREECE	2022-04-19	HI	14	0
GREECE	2022-05-13	HI	55	0
GREECE	2022-05-30	HI	14	0
GREECE	2022-07-07	HI	20	0
GREECE	2022-07-22	HI	33	0
GREECE	2022-09-15	HI	30	0
GREECE	2022-10-17	HI	86	0
GREECE	2022-10-28	HI	6	0
GREECE	2022-11-24	HI	30	0
GREECE	2022-11-28	HI	26	0
PORTUGAL	2022-11-14	HI	10	0

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

Yes

NAME OF THE WOAHS MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
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SERBIA	Consulting data interpretation	REMOTE, BY EMAIL
SWEDEN	Expert opinion on using the HI-test for serological subtyping of swine influenza.	REMOTE, BY EMAIL
AUSTRIA	Sampling methods suggestion for molecular screening of swine influenza	REMOTE, BY EMAIL
FRANCE	Request of information on risk assessments on swine influenza in pig farms	Answer through the EFSA Italian Focal point

## 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	
			CEVA SANTE ANIMALE SA; Institute of Veterinary Medicine; AGES; University of Veterinary Medicine, Vienna; Ceva Tiergesundheit; Clinic for Swine, Ludwig Maximilians University Munich; University of Copenhagen; Universidad de Murcia; Universitat Autònoma de Barcelona; Faculty of Veterinary	

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.	Medicine, AUT;Faculty of Veterinary Medicine;ANSES Ploufragan-Plouzané-Niort Laboratory;Finnish Food Authority Ruokavirasto;University of Helsinki;Animal and Plant Health Agency;Aristotle 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 DENMARK FINLAND FRANCE GERMANY GREECE IRELAND MONTENEGRO NORWAY POLAND PORTUGAL ROMANIA SERBIA SLOVENIA SPAIN THE NETHERLANDS UNITED KINGDOM
European Joint programme: Televir	2018-2022	Promoting One Health in Europe through joint actions on foodborne zoonoses, antimicrobial resistance and emerging microbiological hazards.	ANSES, PIWET, INIA, IZSAM, IZSLER, UOS, SSI, SVA, NVI, INSA, VRI, Sciensano	CZECH REPUBLIC DENMARK FRANCE NORWAY POLAND PORTUGAL SPAIN SWEDEN UNITED KINGDOM

## 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:

3  
1: López-Valiñas Á, Baioni L, Córdoba L, Darji A, Chiapponi C, Segalés J, Ganges L, Núñez JI. Evolution of Swine Influenza Virus H3N2 in Vaccinated and Nonvaccinated Pigs after Previous Natural H1N1 Infection. *Viruses*. 2022 Sep 10;14(9):2008. doi: 10.3390/v14092008. PMID: 36146814; PMCID: PMC9505157.

2: De Marco MA, Cotti C, Raffini E, Frasnelli M, Prospero A, Zanni I, Romanini C, Castrucci MR, Chiapponi C, Delogu M. Long-Term Serological Investigations of Influenza A Virus in Free-Living Wild Boars (*Sus scrofa*) from Northern Italy (2007-2014). *Microorganisms*. 2022 Sep 1;10(9):1768. doi: 10.3390/microorganisms10091768. PMID: 36144370; PMCID: PMC9506564.

3: Prospero A, Soliani L, Canelli E, Baioni L, Gabbi V, Torreggiani C, Manfredi R, Calanchi I, Pupillo G, Barsi F, Bassi P, Fiorentini L, Frasnelli M, Fontana MC, Luppi A, Chiapponi C. Influenza A in Wild Boars: Viral Circulation in the Emilia-Romagna Region (Northern Italy) between 2017 and 2022. *Animals (Basel)*. 2022 Jun 20;12(12):1593. doi: 10.3390/ani12121593. PMID: 35739929; PMCID: PMC9220169.

b) International conferences:

1  
*Circulation of Influenza A Virus in Wild Boars in the Emilia-Romagna Region (Northern Italy), between 2017-2022* Laura Soliani, Alice Prospero, Elena Canelli, Laura Baioni, Valentina Gabbi, Camilla Torreggiani, Roberta Manfredi, Irene Calanchi, Giovanni Pupillo, Filippo Barsi, Patrizia Bassi, Laura Fiorentini, Matteo Frasnelli, Maria Cristina Fontana, Andrea Luppi, Chiara Chiapponi. *ESVV 2022*

c) National conferences:

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 WOA H Members?

Yes

a) Technical visit : 6

b) Seminars :

c) Hands-on training courses:

d) Internships (>1 month)

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	Sweden	2
A	Norway	2
A	The Netherlands	1
A	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	

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 the 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 WOA H?

No

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

No

**TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES**

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

Yes

24. Are you a member of a network of WOAHP Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAHP REF. LABS/ ORGANISING WOAHP REF. LAB.
ESFLU COST Action	Participant	36	WOAHP reference Laboratory for swine influenza (APHA, UK)
ICRAD PIGIE	Participant	6	APHA reference Laboratory for swine influenza (APHA,UK)

25. Did you organise or participate in inter-laboratory proficiency tests with WOAHP Reference Laboratories designated for the same pathogen?

No

26. Did your laboratory collaborate with other WOAHP 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 WOAHP 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	WOAHP 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.	WOAHP 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 WOAHP Reference Laboratories for the same pathogen?

Yes

Purpose for inter-laboratory test comparisons <sup>1</sup>	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOAHP Member Countries
Detection of influenza A virus	participant	17	Europe



by molecular test

## TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Review of the Chapter 3.9.7. of the Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2022		Influenza A virus of swine

29. Additional comments regarding your report:

No