

WOAH Collaborative Centre Reports Activities 2022

Activities in 2022

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Centre Information

Title of WOA Collaborating Centre	Epidemiology, Training and Control of Emerging Avian Diseases
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Name Director of Institute (Responsible Official):	Dr. Antonia Ricci (General Director)
Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):	Dr Paolo Mulatti, DVM, MSc, PhD - Veterinarian officer
Name of the writer:	Paolo Mulatti

TOR1 AND 2: SERVICES PROVIDED

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by WOA

DISEASE CONTROL	
Title of activity	Scope
	Support to the Italian MoH for the drafting of Provisions to

Control measures for HPAI introduction and spread in the poultry production sector	prevent the introduction and spread of AI into, and within, the poultry sector, following the implementation of the new European Animal Health Law (Regulation 429/2016/EC)
DISEASE CONTROL	
Title of activity	Scope
Control measures for LPAI in domestic birds	Support to the Italian MoH and local veterinary authorities in defining the prevention measures for the uncontrolled spread of LPAI within the national poultry sector, following the implementation of the new European Animal Health Law (Regulation 429/2016/EC)
DISEASE CONTROL	
Title of activity	Scope
GIS and spatial analysis services	Support the management of 2021 H5N1 Highly Pathogenic Avian Influenza (HPAI) emergency by means of GIS applications, technical support services, desktop GIS and web-based GIS services
DISEASE CONTROL	
Title of activity	Scope
West Nile Disease (WND) control activities in Northeast Italy	Coordination of 2022 WND surveillance and control activities in Northeast Italy. The main aim is to obtain information on the circulation of WND virus in the area through i) entomological surveillance, ii) clinical surveillance of WND virus in equine farms, iii) passive and active surveillance of WND virus in wild birds
EPIDEMIOLOGY, SURVEILLANCE, RISK ASSESSMENT, MODELLING	
Title of activity	Scope
National surveillance plan for avian influenza (AI)	Support the planning of 2020 AI surveillance activities in Italy by using a risk-based approach to define the risk level of different regions and poultry categories and the sample size for both domestic poultry and wild birds; Support to the Italian Ministry of Health, to assess changes of AI surveillance measures following the implementation of the new European Animal Health Law (Regulation 429/2016/EC)
EPIDEMIOLOGY, SURVEILLANCE, RISK ASSESSMENT, MODELLING	
Title of activity	Scope
Epidemiological support for HPAI in domestic poultry	Support for the collection and processing of epidemiological information and risk contacts during outbreaks of HPAI in poultry farms during the H5N1 HPAI epidemic in northern Italy; Application of statistical and mathematical models to assess the potential spread of HPAI, to further inform the implementation of disease control measures
ZOOZOSES	

Title of activity	Scope
Collaboration with the Regional Public Health Service for the prevention of WND transmission to humans	Based on information of WNV circulation in 2021 in Veneto and Friuli Venezia Giulia regions, definition of the best time interval to implement WNV controls on human blood donors maximizing the benefit-cost ratio.
ZOOZOSES	
Title of activity	Scope
National surveillance plan for Aborvirus infections	Early warning for WNV circulation in vectors, equine and wild birds acting as trigger factor for organs transplantation and/or blood transfusion in human.
WILDLIFE	
Title of activity	Scope
Active surveillance for avian influenza (AI) in wild birds	Implementation of an active surveillance plan in wild birds in the geographical areas classified at high-risk of AI exposure, by means of tracheal, cloacal and feather swab collection from trapped wild waterfowl.
WILDLIFE	
Title of activity	Scope
Active surveillance for AI in hunted wild birds	Implementation of a plan to monitor the AI presence in asymptomatic hunted birds, in geographical areas considered exposed to a higher risk of AI introduction
WILDLIFE	
Title of activity	Scope
Study of ornithocoenosis in proximity to poultry farms	Application of Species Distribution Models to assess the geographical distribution of wild bird species most commonly detected in proximity to poultry farms and the potential role in the spread of Avian Influenza Viruses
WILDLIFE	
Title of activity	Scope
Implementation of network for collaborating with Wild life Rescue Centres located in geographical areas classified at high-risk of AI exposure	Scientific support for implementation of diagnostic protocols and biosecurity activities in Wild life Rescue Centres targeting to avoid introduction and spread of HPAI infection among animal patients (avian and mammal species) and pathogen dissemination into the environment. Specific protocol for the workers of the Wild life Rescue Centers targeting to avoid

	human infection of potential zoonotic HPAI strains and pathogen dissemination into the environment/domestic birds
AVIAN DISEASES	
Title of activity	Scope
Study of Minimum inhibitory concentration in avian bacterial pathogens	Monitoring the minimum inhibitory concentration in avian bacterial pathogens isolates in our competence area
AVIAN DISEASES	
Title of activity	Scope
Pathogens detection in biological matrices sampled from wild birds (active-passive surveillance) through collaboration with others National Research Institutions	Detection of relevant pathogens in wild birds harbouring the local wildlife, transboundary production (interface wild-domestic) and zoonotic potential
ANIMAL WELFARE	
Title of activity	Scope
Risk factors associated with keel bone and foot pad disorders in laying hens	Evaluation of the prevalence of keel bone disorders (severity of deviation and/or deformation and/or protrusion) and foot pad lesions in laying hens (white feathered breed vs brown feathered breed) reared in different housing systems (aviary system vs cage system vs free range), by visual scoring at the abattoir. Analysis of significant risk factors in at least 10 batches of 100 animals each.
DIAGNOSIS, BIOTECHNOLOGY AND LABORATORY	
Title of activity	Scope
Development of new diagnostic methods to implementing the survey on avian mycoplasmosis	Development of a new diagnostic method for the diagnosis of Mycoplasma spp. including avian mycoplasmosis. Application and standardization of minimum inhibitory concentration in avian mycoplasma species.

TOR3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main focus area for which you were designated

Proposal title	Scope/Content	Applicable area
Implementation of a standard for the collection and sharing of zone	The aim of the project is to develop a data model to spatially represent a zone, to explore both its applicability and validity, and to evaluate the resources needed for its full-scale implementation.	Training and education health management

geographic component (GeoZone)	GeoZone project – second year of activity: Development of the GeoZone data product specification document
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4. Did your Collaborating Centre maintain a network with other WOAHA Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
WOAH-FAO Reference Laboratory for Avian Influenza and Newcastle Disease	Italy	Europe	Training activities and collaboration in epidemiological analyses on Avian Influenza and Newcastle Disease
WOAH Collaborating Centre for Epidemiology, modelling and surveillance	Italy	Europe	Partnership in the GeoZone OIE Project
WOAH Collaborating Centre for Diagnosis, Epidemiology and Control of Animal Diseases in Tropical Regions	France	Europe	Partnership in the GeoZone OIE Project
WOAH Collaborating Centre for Veterinary Epidemiology and Public Health	New Zealand	Asia and Pacific	Partnership in the GeoZone OIE Project
WOAH Collaborating Centre for Animal Disease Surveillance Systems, Risk Analysis and Epidemiological Modelling	United States of America	Americas	Partnership in the GeoZone OIE Project

TOR4 AND 5: NETWORKING AND COLLABORATION

5. Did your Collaborating Centre maintain a network with other WOAHA Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking	Purpose

		Centre	
WOAH Collaborating Centre for Diseases at the Animal/Human Interface	Italy	Europe	Studies and training activities on West Nile Virus
WOAH Collaborating Centre for Diagnosis and Control of Animal Diseases and Related Veterinary product assessment in Asia	Japan	Asia and Pasific	Partnership in the GeoZone OIE Project
WOAH Reference Laboratory for Avian Mycoplasmosis	Italy	Europe	Collaboration in defining diagnostic procedures and studying epidemiology of Mycoplasmosis

TOR6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOA?H?

Yes

NAME OF EXPERT	KIND OF CONSULTANCY	SUBJECT
Matteo Mazzucato	WOAH-WHAIS administrative boundaries geospatial data update	To support WOA?H GIS technician in updating the WOA?H-WHAIS administrative boundaries geospatial data
Claudia Casarotto	WOAH-WHAIS administrative boundaries geospatial data update	To support WOA?H GIS technician in updating the WOA?H-WHAIS administrative boundaries geospatial data
Nicola Ferrè	WOAH-WHAIS administrative boundaries geospatial data update	To support WOA?H GIS technician in updating the WOA?H-WHAIS administrative boundaries geospatial data

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

No

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOA?H, to personnel from WOA?H Members?

Yes

- a) Technical visit :
- b) Seminars :
- c) Hands-on training courses: 1
- d) Internships (>1 month) :

TYPE OF TECHNICAL TRAINING PROVIDED (A, B, C OR D)	CONTENT	COUNTRY OF ORIGIN OF THE EXPERT(S) PROVIDED WITH TRAINING	NO. PARTICIPANTS FROM THE CORRESPONDING COUNTRY
C	GIS course: The use of GIS in animal disease response - https://www.izsvenezie.com/online-training-course-gis-oie/	Italy	Webinar - no limits to the number of participants

TOR8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOA?H?

No

TOR9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOA?H that may be useful to Members of WOA?H

a) Articles published in peer-reviewed journals:

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1. *Rapid spread of a new West Nile virus lineage 1 associated with increased risk of neuroinvasive disease during a large outbreak in northern Italy, 2022: One Health analysis. Journal of Travel Medicine, 2022, 1-11. doi: 10.1093/jtm/taac125.*
2. *Early start of seasonal transmission and co-circulation of West Nile virus lineage 2 and a newly introduced lineage 1 strain, northern Italy, June 2022. Eurosurveillance, 2022. 27(29). doi: 10.2807/1560-7917.ES.2022.27.29.2200548*
3. *Silent Infection of Highly Pathogenic Avian Influenza Virus (H5N1) Clade 2.3.4.4b in a Commercial Chicken Broiler Flock in Italy. Viruses 2022, 14(8), 1600. doi: 10.3390/v14081600*
4. *Molecular Survey on A, B, C and New Avian Metapneumovirus (aMPV) Subtypes in Wild Birds of Northern-Central Italy. Veterinary Sciences 2022, 9(7), 373. doi: 10.3390/vetsci9070373*
5. *Redesign and Validation of a Real-Time RT-PCR to Improve Surveillance for Avian Influenza Viruses of the H9 Subtype. Viruses 2022, 14(6), 1263. DOI: 10.3390/v14061263*
6. *Occurrence of Chlamydiae in Corvids in Northeast Italy. Animals 2022, 12(10), 1226 DOI: 10.3390/ani12101226*
7. *First detection of avian metapneumovirus subtype C Eurasian lineage in a Eurasian wigeon "Mareca penelope" wintering in Northeastern Italy: an additional hint on the role of migrating birds in the viral epidemiology. Avian Pathology 51:3, 283-290 DOI: 10.1080/03079457.2022.2051429*
8. *Intercontinental Spread of Eurasian Highly Pathogenic Avian Influenza A(H5N1) to Senegal. Emerging Infectious Diseases 2022, 28(1) doi:10.3201/eid2801.211401*
9. *Herpetic Pneumonia in Indian Ringneck Parrots (Psittacula krameri): First Report of Novel Psittacid Alpha herpesvirus-5 Infection in Europe. Animals 2022, 12(2), 188. DOI: 10.3390/ani12020188*
10. *Spatiotemporal dynamics, evolutionary history and zoonotic potential of Moroccan H9N2 avian influenza viruses from 2016 to 2021. Viruses 2022, 14(3), 509. 1410.3390/v14030509*
11. *Herpetic Pneumonia in Indian Ringneck Parrots (Psittacula krameri): First Report of Novel Psittacid Alpha herpesvirus-5 Infection in Europe. Animals. 2022 Jan 13; 12(2):188. Doi:10.3390/ani12020188.*
12. *Silent Infection of Highly Pathogenic Avian Influenza Virus (H5N1) Clade 2.3. 4.4 b in a Commercial Chicken Broiler Flock in Italy. Viruses. 2022 Jul 22; 14(8):1600. Doi:10.3390/v14081600.*

13. *The Monitoring of Mycoplasma gallisepticum Minimum Inhibitory Concentrations during the Last Decade (2010–2020) Seems to Reveal a Comeback of Susceptibility to Macrolides, Tiamulin, and Lincomycin.* *Antibiotics.* 2022 Jul 29; 11(8):1021. Doi: 10.3390/antibiotics11081021.
14. *Antimicrobial susceptibility profiles of Mycoplasma hyorhinis strains isolated from five European countries between 2019 and 2021.* *PLoS One.* 2022 Aug 11; 17(8):e0272903. Doi: 10.1371/journal.pone.0272903.
15. *In vitro susceptibility of Mycoplasma iowae isolates to antimicrobial agents.* *Avian Pathol.* 2022 Aug; 51(4):374-380. Doi: 10.1080/03079457.2022.2072271.
16. *Detection of Mycoplasma columbinasale in Cases of Respiratory Disease in Domestic Pigeons (Columba livia var. domestica).* *Case Reports in Veterinary Medicine.* 2022 Nov 19; 2022:3950684. doi: 10.1155/2022/3950684.
17. *Genomic Diversity of a Globally Used, Live Attenuated Mycoplasma Vaccine.* *Microbiol Spectr.* 2022 Dec 21; 10(6):e0284522. doi: 10.1128/spectrum.02845-22.

b) International conferences:

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1. Scolamacchia F, Mulatti P, Fornasiero D., Dorotea T, Manca G, Mannelli A. (2022) *Using scenario tree modelling for targeted flock sampling to substantiate freedom from disease after the 2021-22 HPAI epidemic in Italy.* ECVPH AGM & Annual Scientific Conference 2022 - Food Safety and Animal Health in times of crises: a syndemic perspective - Athens, Greece – September 28-30, 2022
2. Zecchin B, Fusaro A, Barbierato G, Giussani E, Fornasiero D, Scolamacchia F, Mulatti P, Salviato A, Schivo A, Palumbo E, Varotto M, Gobbo F, Monne I, Terregino C (2022). *Genetic investigation of the HPAI H5N1 viruses responsible of HPAI epidemic in Italy in 2021-2022.* ESVV 2022 – 12th International Congress For Veterinary Virology, 20-23 September 2022, Ghent, Belgium.
3. Fornasiero D, Dorotea T, Zecchin B, Fusaro A, Matteo M, Mulatti P (2022). *Epidemiological investigations and analyses of H5N1 HPAI outbreaks in north Italy in 2021-2022.* IZVEE 16, August 7-12, 2022 – Halifax, Canada
4. Cunial G, Gagliazzo L, Pasqualin D, Callegaro A, Di Martino G, Mazzucato M, Mulatti P, Favero L, Manca G (2022). *Business Intelligence as a Support for Epidemiological Surveillance in Veneto (North-Eastern Italy): The Case of West Nile Disease.* In N. Callaos, S. Hashimoto, N. Lace, B. Sánchez, M. Savoie (Eds.), *Proceedings of the 13th International Multi-Conference on Complexity, Informatics and Cybernetics: IMCIC 2022, Vol. II, pp. 127-129.* International Institute of Informatics and Cybernetics. <https://doi.org/10.54808/IMCIC2022.02.127>
5. *28th Annual Meeting of the National Reference Laboratories for Avian Influenza and Newcastle Disease of European Union Member States (20-21 September 2022 – Verona, Italy)* <https://www.izsvenezie.com/reference-laboratories/avian-influenza-newcastle-disease/workshops/>
6. *Determination of macrolide and lincomycin susceptibility of Mycoplasma hyorhinis isolates by a molecular biological assay.* Dorottya Földi, Ulrich Klein, Salvatore Catania, Arkadiusz Dors, Ute Siesenop, Philip Vyt, Zsuzsa Kreizinger, Miklós Gyuranecz. 13th European Symposium of Porcine Health Management, 11-13 May 2022.
7. *Antimicrobial susceptibility profiles of Mycoplasma hyorhinis strains isolated from diseased swine across Europe between 2019 and 2021.* Ulrich Klein, Dorottya Földi, Salvatore Catania, Arkadiusz Dors, Ute Siesenop, Philip Vyt, Zsuzsa Kreizinger, Miklós Gyuranecz. 13th European Symposium of Porcine Health Management, 11-13 May 2022.
8. *Pk/Pd And Clinical Relationships Of Vetmulin (Tiamulin Base) Administered To Pigs For The Treatment Of Mycoplasmal Arthritis.* Ulrich Klein, Miklos Gyuranecz, Salvatore Catania, L. Claerhout, Wouter Depondt. 13th European Symposium of Porcine Health Management, 11-13 May 2022.

c) National conferences:

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1. *Valutazione di ceppi di Mycoplasma synoviae di campo e vaccinali tramite metodica multi locus variable number of tandem repeats analysis (MLVA): risultati preliminari.* Elisabetta Stefani, Andrea Matucci, Michele Gastaldelli, Lorena Cristovao Borges, Verdiana Righetti, Silvia Vianello, Annalucia Tondo, Salvatore Catania. VII Simposio Scientifico SIPA. 28th October 2022.

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

1 - website

www.izsvenezie.it

11. What have you done in the past year to advance your area of focus, e.g. updated technology?

12. Additional comments regarding your report: