

OIE Reference Laboratory Reports Activities

Activities in 2021

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Newcastle disease
Address of laboratory:	OIE Reference Laboratory for Avian Influenza disease Istituto Zooprofilattico Sperimentale delle Venezie (IZSve) Viale dell'Università 10 - 35020 Legnaro (PD) - Italy
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Name (including Title) of Head of Laboratory (Responsible Official):	Calogero Terregino, Head of the EU/National Reference Laboratory for AI/NDV. Director of the Research and Development Department/acting Director of the Specialized Virology and Experimental Research Unit (IZSve)
Name (including Title and Position) of OIE Reference Expert:	Isabella Monne, DVM PhD, Head of the Viral genomics and transcriptomics Laboratory, Division of Research and Innovation
Which of the following defines your laboratory? Check all that apply:	Governmental

ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards

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 OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
Haemoagglutination inhibition (HI)	Yes	740	16
ELISA	Yes	145	0
Direct diagnostic tests			
Virus Isolation	Yes	41	3
RRT/RT-PCR	Yes	575	992
Sequencing of F gene	Yes	63	21
ICPI - Intracerebral Pathogenicity Index	Yes	9	1
WGS - Whole Genome Sequencing	Yes	0	67

ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards. To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.

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

No

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
Control positive antigens	HI serological test	4431/329 ml	94 ml	235 ml	19	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
Control positive sera	HI/AGID serological test	927/399 ml	201 ml	198 ml	17	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
Control negative serum	HI serological test	1280/428 ml	91 ml	337 ml	15	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
ALBANIA	June	0	1
AUSTRIA	December	0	13
BELGIUM	May	0	4
IRELAND	February, April, August	0	5
LITHUANIA	May	0	3
NIGERIA	March, September	719	64
NIGER	March	0	5
NORWAY	February	0	14
ROMANIA	March, May	0	3
SLOVENIA	February	0	3
SLOVAKIA	February	0	2
SWITZERLAND	June	0	1
UNITED KINGDOM	January	0	1

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
IRELAND	Clarifications on the requirements for testing NDV under the new AHL: laboratory methods; vaccination on poultry and possible interference with the serological testing for AI surveillance	Remote assistance (email)

ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
LIDISKI Project: Improving the livelihoods of smallholder livestock farmers in Nigeria	4 years	Improving surveillance and control of Peste des petits ruminants (PPR) and Newcastle Disease (ND), the two main diseases affecting the livestock of smallholder farmers in North of Nigeria.	Centre de coopération Internationale en Recherche Agronomique pour le Développement - CIRAD (France), IZSVE (Italy), Ikore (Nigeria), National Veterinary Institute (Nigeria), National Agricultural Extension and Research Liaison Services -NAERLS (Nigeria), The Federal Ministry of Agriculture and Rural Development - FMARD (Nigeria), International Livestock Research Institute - ILRI (Kenya), OIE-World Organisation for Animal Health	FRANCE ITALY KENYA NIGERIA

ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:
°Collection and analysis of the information generated by epidemiological and genetic surveillance in domestic and wild birds in Italy. ° Collection and analysis of the information generated by epidemiological and genetic surveillance in rural poultry in Nigeria.

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

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

National Information Systems: regular reporting of epidemiological data to the Ministry of Health and the European Commission. Reporting results of molecular, epidemiological and diagnostic analyses to EU NRLs by email and through Mattermost, a flexible, open source messaging platform that enables secure team collaboration and enhances an active collaboration between veterinary/public health laboratories and scientists from the European Union (EU). This allows rapid dissemination of Newcastle disease updates when needed.

**13. What method of dissemination of information is most often used by your laboratory?
(Indicate in the appropriate box the number by category)**

a) Articles published in peer-reviewed journals: 1

1. Twabela, A.T., Nguyen, L.T., Masumu, J., Mpoyo, P., Mpiana, S., Sumbu, J., Okamatsu, M., Matsuno, K., Isoda, N., Zecchin, B., Monne, I., & Sakoda, Y. (2021). A New Variant Among Newcastle Disease Viruses Isolated in the Democratic Republic of the Congo in 2018 and 2019. *Viruses*, 13, 10.3390/v13020151.

b) International conferences: 1

EURL team at IZSVE

Presentations from the 27th Annual Meeting of the National Reference Laboratories for Avian Influenza and Newcastle Disease of European Union Member States

<https://www.izsvenezie.com/reference-laboratories/avian-influenza-newcastle-disease/workshops/>

c) National conferences: 1

Updates on avian Influenza and Newcastle Disease from the National Reference Centre (October 2021)

<https://www.izsvenezie.it/documenti/formazione/corsi-convegni/2021/2021-10-26-aggiornamenti-influenza-aviaria/programma.pdf>

<https://www.izsvenezie.it/formazione/corsi-e-convegni/archivio-corsi-e-convegni/>

d) Other:

(Provide website address or link to appropriate information) 3

IZSVE website, OIE & FAO activities:

<https://www.izsvenezie.com/reference-laboratories/avian-influenza-newcastle-disease/oie-fao-activities/>

IZSVE website, European Union Reference Laboratory (EURL) for Avian Influenza and Newcastle Disease:

<http://www.izsvenezie.com/reference-laboratories/avian-influenza-and-newcastle-disease/>

Lidiski project - Improving the livelihoods of smallholder livestock farmers in Nigeria

<http://www.lidiski.org/>

https://www.youtube.com/watch?v=Gp1aa03u4nY&feature=emb_logo

<https://www.lidiski.org/distinctive-symptoms-of-newcastle-disease/>

<https://www.lidiski.org/newcastle-disease-control-and-the-effectiveness-of-biosecurity/>

ToR 7: To provide scientific and technical training for personnel from OIE Member Countries

To recommend the prescribed and alternative tests or vaccines as OIE Standards

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

Yes

a) Technical visits: 0

- b) Seminars: 100
 c) Hands-on training courses: 1
 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
b	28 EU countries and 8 non EU countries (detailed information available at IZSVe)	100
c	Nigeria	1

ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

15. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO 17025	A_20_certificato ISO 17025.pdf
ISO 17043	B_certificato-ISO-17043-aqua.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Detection of antibodies to Newcastle disease virus (NDV) by haemagglutination inhibition test	ACCREDIA - Italian Accreditation System
Isolation and characterization of Newcastle disease viruses using SPF embryonated chicken eggs and haemagglutination inhibition test	ACCREDIA - Italian Accreditation System
Detection of APMV-1 virus (Avian Paramyxovirus Type 1) by RT-PCR	ACCREDIA - Italian Accreditation System
APMV-1 virus (Avian Paramyxovirus Type 1) sequence analysis	ACCREDIA - Italian Accreditation System
Detection of APMV-1 virus (Avian Paramyxovirus Type 1) by real time RT-PCR	ACCREDIA - Italian Accreditation System
Proficiency testing provider	ACCREDIA - Italian Accreditation System

17. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?

Yes

(See *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*, Chapter 1.1.4)

ToR 9: To organise and participate in scientific meetings on behalf of the OIE

18. Did your laboratory organise scientific meetings on behalf of the OIE?

No

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

No

ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

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

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

Yes

Purpose of the proficiency tests: ¹	Role of your Reference Laboratory (organiser/participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
European Proficiency Test on Avian Influenza and Newcastle Disease	Organiser	40 (26 from EU and 14 from non EU countries)	<ul style="list-style-type: none"> • Friedrich Loeffler Institute Federal Research Institute for Animal Health Institute of Diagnostic Virology (Germany); • NRL for Avian Influenza and Newcastle Disease Federal State-Financed Institution “Federal Centre for Animal Health” (FGBI “ARRIAH”) (Russia) • Animal and Plant Health Agency Weybridge (UK) (detailed Information available at IZSve)

¹ validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.

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

Not applicable (Only OIE Reference Lab. designated for disease)

ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at: <http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing> see point 1.3

Purpose for inter-laboratory test comparisons ¹	No. participating laboratories	Region(s) of participating OIE Member Countries
National Proficiency Test for Avian Influenza and Newcastle Disease (organiser)	20	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

ToR 12: To place expert consultants at the disposal of the OIE

24. Did your laboratory place expert consultants at the disposal of the OIE?

Yes

Kind of consultancy	Location	Subject (facultative)
Webinar: One expert participated as invited speaker with the contribution titled "Organisation of activities of Reference Laboratories in EU countries".	Legnaro, Padova (Italy)	Webinar "The Role of Veterinary Reference Laboratories, and Guidelines in Veterinary Education" held on 13th May 2021, organised by OIE - EEC Eurasian Economic Commission.

25. Additional comments regarding your report:

