

# OIE Reference Laboratory Reports Activities

## *Activities in 2019*

**This report has been submitted : 2020-01-15 12:51:54**

<b>Name of disease (or topic) for which you are a designated OIE Reference Laboratory:</b>	Newcastle disease
<b>Address of laboratory:</b>	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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<b>Website:</b>	www.izsvenezie.it
<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	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)
<b>Name (including Title and Position) of OIE Reference Expert:</b>	Isabella Monne, DVM PhD, Head of the Innovative diagnostic laboratory, Division of Research and Innovation (IZSve) (on maternity leave)
<b>Which of the following defines your laboratory? Check all that apply:</b>	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	2273	1
Direct diagnostic tests			
PCR	Yes	1251	38
Sequencing of ND gene	Yes	75	6
Virus isolation	Yes	62	4
ICPI - Intracerebral Pathogenicity Index	Yes	10	3
WGS of NDV	Yes	0	3

**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	1.295/68 ml	18 ml	51 ml	10	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Control positive sera	HI/AGID serological test	387/91 ml	12 ml	91 ml	10	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
Control negative serum	HI serological test	2.495/1.220 ml	1.125 ml	95 ml	8	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" 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
LUXEMBOURG	January	0	1
BULGARIA	April	0	2
GUINEA	September	20	0
BELGIUM	November	0	1
ROMANIA	December	0	3
BELGIUM	November	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
RUSSIA	To provide information on: Avian Influenza e Newcastle disease; prevention and control of AI and ND at national and regional level	Meeting at IZSVe

**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
ARIMNET2-AVIAMED	3 years	AVIAn viral disease prevention and control with plant vaccines for the MEDiterranean area	IZSVE (Italy), Agricultural Genetic Engineering Research Institute, Agricultural Research Center (Egypt), Institut Agronomique et Vétérinaire Hassan II (Morocco), Institut National de la Recherche Agronomique (Morocco), Italian National Agency for New Technologies, Energy and Sustainable Economic Development (Italy)	EGYPT ITALY MOROCCO
Research paper: Updated unified phylogenetic classification system and revised nomenclature for Newcastle disease virus	for the time needed	To undertake in-depth analyses of NDV genetic diversity with the purpose to generate an updated NDV classification and nomenclature system	see authors' affiliation at: <a href="https://www.sciencedirect.com/science/article/pii/S1567134819301388?via%3Dihub">https://www.sciencedirect.com/science/article/pii/S1567134819301388?via%3Dihub</a>	AUSTRALIA BRAZIL BULGARIA CHINA (PEOPLE'S REP. OF) EGYPT FRANCE GERMANY ITALY KOREA (REP. OF) LUXEMBOURG RUSSIA SOUTH AFRICA SWEDEN UNITED KINGDOM UNITED STATES OF AMERICA
ParNewVac "Development of improved vaccines with DIVA and therapeutic properties against two animal paramyxoviruses: the peste de petits ruminantes and Newcastle Disease"	for the time needed	Improving vaccine properties against animal paramyxoviruses	IZSVE (Italy)	

**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 surveillance: ° National/regional surveillance programmes in poultry with reference to Newcastle disease viruses in domestic reservoir.

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; ° Remote assistance 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 Avian Influenza and Newcastle disease updates.

**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: 2

Dimitrov, K.M., Abolnik, C., Afonso, C.L., Albina, E., Bahl, J., Berg, M., Briand, F.X., Brown, I.H., Choi, K.S., Chvala, I., Diel, D.G., Durr, P.A., Ferreira, H.L., Fusaro, A., Gil, P., Goujgoulova, G.V., Grund, C., Hicks, J.T., Joannis, T.M., Torchetti, M.K., Kolosov, S., Lambrecht, B., Lewis, N.S., Liu, H., Liu, H., McCullough, S., Miller, P.J., Monne, I., Muller, C.P., Munir, M., Reischak, D., Sabra, M., Samal, S.K., Servan de Almeida, R., Shittu, I., Snoeck, C.J., Suarez, D.L., Van Borm, S., Wang, Z., & Wong, F.Y.K. (2019). Updated unified phylogenetic classification system and revised nomenclature for Newcastle disease virus. *Infection, genetics and evolution : journal of molecular epidemiology and evolutionary genetics in infectious diseases*, 74, 103917.

Liu, Y., Kuo, S., Chiou, C., Terregino, C., & Tsai, H. (2019). Novel avian metaavulavirus isolated from birds of the family columbidae in taiwan, September 2019. <https://doi.org/10.1016/j.vetmic.2019.07.029>

b) International conferences: 0

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c) National conferences: 1

Rota, P., La Rocca, P., Bonfante, F., Montefiori, M., Pagliari, M., Allevi, P. & Anastasia, L. (2019). The war against paramyxoviruses: new and potent hemagglutinin- neuraminidase inhibitors of Newcastle Disease Virus. 3rd National Congress of the Italian Society Virology "One Virology One Health" (SIV-ISV Società Italiana di Virologia, Italian Society for Virology), Abstract book, (p. 29 (OC 29)). September 10-12, 2019, Padova, Italy

d) Other:

(Provide website address or link to appropriate information) 2

IZSVE website, National Reference Centre:

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

AVIAMED-ARIMNET2 - AVian viral disease prevention and control with plant vaccines for the MEDiterranean area  
<http://arimnet2.net/index.php/researchprojects/projects-2nd-call/aviamed>

**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: 0

c) Hands-on training courses: 3

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
c	Nigeria	3

**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_certificato accreditamento 2017.pdf
ISO 17043	B_Accreditamento 0004 rev 3 Proficiency Testing Provider.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Newcastle Disease Virus isolation and differential diagnosis	ACCREDIA - Italian Accreditation System
Newcastle Disease Virus Antibodies emagglutination assay	ACCREDIA - Italian Accreditation System
Newcastle Disease Virus RT-PCR	ACCREDIA - Italian Accreditation System
Detection of antibodies to Newcastle disease virus (NDV) based on haemagglutination inhibition (HI) assay	ACCREDIA - Italian Accreditation System
Isolation and differential diagnosis of Newcastle disease virus	ACCREDIA - Italian Accreditation System
Detection of APMV-1 virus (Avian Paramyxovirus Type 1) by reverse transcriptase PCR and Sanger sequencing	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: <sup>1</sup>	Role of your Reference Laboratory (organiser/participant)	No. participants	Participating OIE Ref. Labs/organising OIE Ref. Lab.
European Proficiency Test on AI and ND	Organiser	36	Information available at IZSve

<sup>1</sup> 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?

Yes



Title of the project or contract	Scope	Name(s) of relevant OIE Reference Laboratories
Research paper Updated unified phylogenetic classification system and revised nomenclature for Newcastle disease virus	To generate an updated NDV classification and nomenclature system	<p>Australian Animal Health Laboratory CSIRO Livestock Industries 5 Portarlington Road Private Bag 24 (Ryrie Street) Geelong 3220, Victoria AUSTRALIA Laboratório Nacional Agropecuário em Campinas - Lanagro- SP Unidade de Sanidade Aviária Rua Raul Ferrari, s/n° Jardim Santa Marcelina CEP 13100-105 Campinas SP BRASIL National Diagnostic Center for Exotic Animal Diseases China Animal Health and Epidemiology Center Ministry of Agriculture 369 Nanjing Road Qingdao 266032 CHINA (PEOPLE'S REP. OF) Institute of Diagnostic Virology Friedrich-Loeffler-Institute Federal Research Institute for Animal Health Südufer 10 D-17493 Greifswald Insel Riems GERMANY Newcastle disease Laboratory, Avian Disease division Animal and Plant Quarantine Agency (QIA) Ministry of Agriculture, Food and Rural Affairs (MAFRA) 177, Hyeoksin 8-ro Gimcheon-si, Gyeongsangbuk-do, 39660 KOREA (REP. OF) Head, National Reference Laboratory for Avian Influenza and Newcastle Disease Federal State-Financed Institution "Federal Centre for Animal Health" (FGBI "ARRIAH") Yur'evets Vladimir 60090 RUSSIA Animal and Plant Health Agency New Haw, Addlestone Surrey KT15 3NB Weybridge UNITED KINGDOM National Veterinary Services Laboratories USDA, APHIS, Veterinary Services P.O. Box 844 Ames, Iowa 50010 UNITED STATES OF AMERICA</p>

**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 <sup>1</sup>	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
Proficiency Test for Avian Influenza and Newcastle disease (organiser)	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input checked="" 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?

No

25. Additional comments regarding your report: