

# OIE Reference Laboratory Reports Activities

## *Activities in 2020*

**This report has been submitted : 2021-01-20 11:50:45**

<b>Name of disease (or topic) for which you are a designated OIE Reference Laboratory:</b>	Highly and low pathogenic avian influenza
<b>Address of laboratory:</b>	ICAR-National Institute of High Security Animal Diseases Anand Nagar Bhopal □ 462 021 Madhya Pradesh INDIA
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<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	Dr.V.P.Singh, Director
<b>Name (including Title and Position) of OIE Reference Expert:</b>	Chakradhar Tosh
<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			
HI	Yes	812	0
AGID	Yes	1650	0
Direct diagnostic tests			
RT-PCR	Yes	3452	0
Real time RT-PCR	Yes	6218	0
Virus Isolation	Yes	7805	0
Nucleotide Sequencing and Molecular Pathotyping	Yes	18	0

**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?

No

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?

No

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

No

***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?

No

**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:
Collected epizootiological data and Post operative surveillance data

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:
The information was analyzed and the report submitted to Department of Animal Husbandry and Dairying, Government of India

**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: 02

- Kombiah S, Kumar M, Murugkar HV, Nagarajan S, Tosh C, Senthil Kumar D, Rajukumar K, Gautam S, Singh R, Karikalan M, Sharma AK, Singh VP (2020) Experimental pathology of two highly pathogenic H5N1 viruses isolated from crows in BALB/c mice. *Microbial Pathogenesis*. 21; 141: 103984 (doi: 10.1016/j.micpath.2020.103984).
- M. Kumar, H. V. Murugkar, S. Nagarajan, C. Tosh, S. Patil, K. H. Nagaraja, K. Rajukumar, D. Senthilkumar, S. C. Dubey (2020). Experimental infection and pathology of two highly pathogenic avian influenza H5N1 viruses isolated from crow and chicken in house crows (*Corvus splendens*) *Acta virologica* 64: 325 – 330

b) International conferences: 03

- Boopathi, P., Kumar, M., Murugkar, H. V., Nagarajan, S., Tosh, C., Gautam, S., Senthil Kumar, D., Kalaiyarasu, S., Rajukumar, K. and Singh, V. P. (2020) Tissue tropism and pathogenicity of H5N8 avian influenza virus in experimentally infected chicken. Presented at International conference (Virocon-2020) on Evolution of viruses and viral Diseases, held at Indian National Science Academy, New Delhi, India, 18th to 20th February, 2020. pp63
- Nagarajan, S., Kalaiyarasu, S., Manoj Kumar, Venkatesh, G. and Tosh, C. (2020) Molecular Epidemiology in Disease Surveillance, Lead paper presentation in International conference on “Paradigm shift in animal disease diagnostics; Veracious path in disease prevention and control”, VCRI, Tirunelveli, Tamil Nadu, India (through Virtual Mode), 7th to 9th October 2020.
- Nagarajan, S. (2020) Current Understanding of Evolution and Pathogenesis of Avian Influenza Virus. Lead paper presentation in International Webinar on Defending Biotic Stressors to Safeguard Poultry Production, Health and Food Safety, Poultry Research Station, TANUVAS, Chennai, India, 27th to 28th November 2020

c) National conferences: 01

Tosh, C. (2020) avian influenza - epidemiology, diagnosis and control. Expert speaker in veterinary webinar series under Continuing Professional Development (CPD) programme for veterinarians of Indian Veterinary Association in collaboration with World Veterinary Association, 24th May 2020.

d) Other:

(Provide website address or link to appropriate information) 0

**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?

No

**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/IEC 17025:2017 "General Requirements for the Competence of Testing & Calibration Laboratories"	Certificate TC-8541.pdf.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Real time RT-PCR	National Accreditation Board for Testing and Calibration Laboratories

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?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
GFTADs Regional Expert Group Meeting for the Diseases of poultry in Asia and the Pacific	1-2 December, 2020	Virtual Meeting, Coordinated by OIE Regional Representative for Asia and the Pacific	Participation	Participation

***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?

No

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?

No

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?

No

***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
FAO's Regional Proficiency Testing for Avian Diseases PCR Panel (Influenza A (IA) Type A, H-type, N-type and NDV)	20	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input 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?

No

25. Additional comments regarding your report:

- Review of OIE Chapter - Infection with High Pathogenicity Avian Influenza Viruses
- Nucleotide sequences and associated data of avian influenza virus (H5N1 and H9N2 subtypes) isolated from poultry in Indian during 2020 were shared with WHO vaccine composition meeting coordinated by OFFLU Network.

Regarding diagnostic testing for other OIE member countries, during the year 2020, ICAR-NIHSAD, Bhopal, India did not receive samples from any OIE member countries. However in future, we will be happy to provide the diagnostic testing facility on samples referred from OIE member countries.