

OIE Reference Laboratory Reports Activities

Activities in 2020

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Highly and low pathogenic avian influenza
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Website:	https://merlin.cfia-acia.inspection.gc.ca/eng/1461783104818/1461783214246
Name (including Title) of Head of Laboratory (Responsible Official):	John Copps, Acting Executive Director, National Centers for Animal Disease (NCAD)
Name (including Title and Position) of OIE Reference Expert:	Yohannes Berhane
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			
cELISA	Yes	8763	0
AGID	Yes	78	0
Hemagglutination-Inhibition (H3, H5, H7)	Yes	0	0
Direct diagnostic tests			
Virus Isolation	Yes	839	10
InfA Matrix real-time RT-PCR	Yes	4550	10
H5 & H7 real-time RT-PCR	Yes	2887	10
HA subtyping (HI: 1-16)	Yes	3810	6
NA subtyping	Yes	103	5
Molecular pathotyping and whole genome sequencing	Yes	371	5
IVPI	Yes	0	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?

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
Inactivated avian influenza reference viruses	Hemagglutination inhibition assay, AGID	provided	ml	xxx	1	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Inactivated virus panel	hemagglutination assay, hemagglutination inhibition assay	provided	ml	10 vials, 1ml each	1	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Inactivated virus panel	AGID	provided	ml	10 vials, ml each	1	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
in vitro transcribed RNA panel	real-time RT-PCR assays (InfA matrix, H5, H7 & H9 assays)	provided	ml	Xxx panels composed of 20 tubes of 0.5ml of RNA	1	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input 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?

No

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
GHANA	Collaboration to enhance the diagnostic capacity in Ghana for avian influenza	OIE Twinning project - on site visitation, electronic correspondence, telecommunication
MEXICO	Bioinformatical analysis of NAI influenza viruses isolated in Mexico (2018-2019)	email and teleconference

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
Bioinformatical analysis of NAI Influenza viruses isolated in Mexico 2018-19	ongoing	analysis of NAI outbreak strains	CENASA	MEXICO
Delta flu Project - Dynamics of Avian Influenza in a changing world	ongoing	identify key viral host related and environmental factors that determine the dynamics AI in poultry and other host species with the goal of improving prevention and control strategies	FLI, Germany; Animal and Health Agency, DEFRA, UK; IZSve, Italy	THE NETHERLANDS

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:
surveillance of domestic poultry and wild bird populations for influenza virus

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

No

If the answer is no, please provide a brief explanation of the situation:
we did not experience any NAI outbreaks for the current reporting year

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

Xu W, Weese JS, Ojkic D, Lung O, Handel K, Berhane Y. Phylogenetic inference of H3N2 canine influenza A outbreak in Ontario, Canada in 2018. Sci Rep. 2020 Apr 14;10(1):6309. doi: 10.1038/s41598-020-63278-z.

H7N9 influenza virus containing a polybasic HA cleavage site requires minimal host adaptation to obtain a highly pathogenic disease phenotype in mice. Viruses 2020 Jan 5; 12(1):65 doi: 103390/v12010065

b) International conferences: 0

c) National conferences: 0

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?

Yes

a) Technical visits: 1

b) Seminars: 1

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
a	Ghana	8
b	Ghana	2
c	Ghana	5

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 17025:2005	ASB_CTF_15579-CFIA-Certificate_v1_2017-07-24 (1).pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ELISA	Standard Council of Canada
AGID	Standard Council of Canada
IVPI	Standard Council of Canada
Virus Isolation	Standard Council of Canada
real-time RT-PCR and PCR	Standard Council of Canada
Hemagglutination Assay	Standard Council of Canada
Hemagglutination Inhibition Assay	Standard Council of Canada
Molecular pathotyping (sequencing)	Standard Council of Canada

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?

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?

Yes

Title of the project or contract	Scope	Name(s) of relevant OIE Reference Laboratories
DELTA-FLU Project - Dynamics of avian influenza in a changing world	identification of key viral, host-related and environmental factors that determine the dynamics of avian influenza in poultry and other host species with the goal of improving prevention and control strategies	FLI (Germany), Animal and Plant Health Agency - DEFRA (UK), IZSve (Italy)

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
OIE Twinning Project	1	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input 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:

Due to COVID-19, no request came from OIE