

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 24 avril 2023 16:01

Laboratory Information

Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Anthrax
Address of laboratory:	CFIA Lethbridge Lab, Township Road 9-1, Lethbridge Alberta, T1J3Z4
Tel.:	14033825505
E-mail address:	kingsley.amoako@inspection.gc.ca
Website:	
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Kingsley Amoako, Laboratory Director
Name (including Title and Position) of WOA Reference Expert:	Dr. Kingsley Amoako, Lab Director
Which of the following defines your laboratory? Check all that apply:	Governmental

TOR1: DIAGNOSTIC METHODS

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)

No

TOR2: REFERENCE MATERIAL

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

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOA Members?

No

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOAHA Members?

Not applicable

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

No

7. Did your laboratory validate diagnostic methods according to WOAHA Standards for the designated pathogen or disease?

No

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

No

9. Did your laboratory validate vaccines according to WOAHA Standards for the designated pathogen or disease?

No

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAHA Members?

No

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAHA Member?

Yes

NAME OF THE WOAHA MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
FINLAND	Dr. Kirsti Pelkola Senior Researcher DVM, Specialist in Veterinary Medicine, Infectious Animal Diseases Finnish Food Authority Laboratory and Research Division Animal Health Diagnostics Unit Bacteriology Section Helsinki Finland wanted some advice on the staining identification of B. anthracis	The advice was provided via email messages.
GRENADA	Dr. Adrián González Alonso Departamento de Microbiología Laboratorio Central de Sanidad Animal Ministerio de Agricultura, Pesca y Alimentación wanted advice on the detection of B. anthracis from leather hides and soil samples.	The advice was provided via email messages
	Dr. Jacqueline Kasiiti Lichoti, PhD, the ECTAD Laboratory Expert Emergency Center for	We were unable to arrange to receive the specimen but requested that they send us the

SIERRA LEONE	Transboundary Animal Diseases in Sierra Leon wanted to send some samples to the OIE Reference lab here for testing and confirmation. The lab had done some detection and sequencing and wanted a confirmation from the OIE reference lab.	sequence information. They sent us the sequence information via email and we analyzed it using our bioinformatics tools here at the Lethbridge Lab and confirmed that it matched the sequence information of anthrax in the GenBank database. All the advice was provided via email.
GEORGIA	Dr. Tengiz Chaligava, deputy head of EDP Division of National Food Agency of Ministry of Environmental Protection and Agriculture of Georgia contacted the OIE Reference lab to find out if we produce and market anthrax vaccines. We responded that we do not.	The advice was provided via email messages.
AZERBAIJAN	Dr. Elmira Hasanova Azerbaijan Food Safety Institute contacted the OIE Reference lab to request for Certified Reference Material for the validation and verification of anthrax. We responded that we currently do not have any CRM as we have not done any validation recently.	The advice was provided via email messages.
CANADA	Dr Geneviève Toupin, DVM, National Manager - Acting Ruminant and Swine Programs Animal Health Directorate of the Canadian Food Inspection Agency contacted the OIE Reference lab regarding how long anthrax spores can potentially survive in the ground following the burial of animal infected carcasses.	The advice was provided via both email and phone calls.

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOA Members other than the own?

No

TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

No

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

No

16. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category and list the details in the box)

a) Articles published in peer-reviewed journals:

0

b) International conferences:

1

"10th International Conference on *Bacillus anthracis*, *B. cereus* and *B. thuringiensis*". April 24-28, 2022. Paris, France (virtual).

c) National conferences:

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

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAHA Members?

Yes

a) Technical visit : Nil

b) Seminars : The WOAHA reference Lab for Anthrax in Lethbridge provided virtual training and advice on the use of reagents and supplies shipped to the Ghana Veterinary Services Directorate labs in Ghana. This followed a large shipment of reagents and supplies to the team in Ghana.

c) Hands-on training courses: Nil

d) Internships (>1 month) Nil

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) Provided virtual training on the use of reagents and supplies that were shipped out to the Ghana veterinary services labs in Ghana	Ghana	2

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
		ASB_CTF_15366-CFIA-Certificate_v2_2020-

ISO/IEC17025

08-07.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Laboratory Procedures for the isolation and identification of <i>Bacillus anthracis</i>	Standards Council of Canada

20. 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)

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOA?

No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOA?

No

TOR10: NETWORK WITH WOA REFERENCE LABORATORIES

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

Yes

24. Are you a member of a network of WOA Reference Laboratories designated for the same pathogen?

Not applicable (Only WOA Reference Laboratory designated for the disease)

25. Did you organise or participate in inter-laboratory proficiency tests with WOA Reference Laboratories designated for the same pathogen?

No

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

No

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA Reference Laboratories for the same pathogen?

No

TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOA?

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Dr. Amoako was contacted by WOAHA and requested to advise the BSC as to whether the proposed revisions to the Terrestrial Manual chapter (update on diagnostic test method for anthrax) could have an impact on relevant chapters of the Terrestrial Code (notably the anthrax disease-specific chapter). The BSC could then make high-level recommendations to the Code Commission.	Request came from the WOAHA Bureaus of the Code Commission and the Biological Standards Commission (BSC).	Responded to specific technical question from WOAHA.

29. Additional comments regarding your report:

Yes

Below is information as to why there was little international activity from the WOAHA Reference Lab for anthrax here in Canada.

Coming out of the COVID pandemic, the year 2022 posed some challenges for the WOAHA Reference Lab for anthrax in Canada. It imposed some restrictions on some of the activities of the Anthrax Reference Lab in Canada. Similarly, the COVID situation may also have slowed down anthrax work in other WOAHA laboratories and this may have contributed to the overall reduction in international activities related to anthrax. In 2022, the WOAHA Reference lab for Anthrax in Lethbridge continued to provide technical advice for WOAHA member labs remotely as indicated in this Annual Report. The Reference lab continues to support the Veterinary Services Lab in Pong Tamale in Ghana in building capacity for diagnostic work with anthrax. The WOAHA Reference lab team was due to travel to Ghana to provide hands-on training on anthrax in 2022 but this was not possible and has been scheduled for this calendar year. However, the Pong Tamale Lab is currently continuing the testing for Human COVID-19 and it is good to see that the training, equipment, PPEs and supplies provided to the team in Ghana in 2019 for anthrax detection has enabled the team to continue to test for Human COVID-19. It is anticipated that the training of the veterinary lab staff in Ghana for anthrax detection will be completed this year.

The Lethbridge WOAHA Reference laboratory for Anthrax remains active in providing scientific support to other labs around the world. The high level of scrutiny on issues related to anthrax as a bioterrorism agent makes moving samples from one lab to the Reference lab or vice versa a huge challenge and this imposes a significant limitation on international diagnostic activity. The CFIA is committed to maintaining and enhancing the WOAHA Reference Laboratory for Anthrax. Currently there is no diagnostic testing at the Reference lab as all anthrax testing is now done by the Provincial labs. There is ongoing discussion on diagnostic testing activities that would enhance the WOAHA Reference Laboratory status, and further ensure preparedness in the event of intentional contamination of the food supply. The lab continues to maintain close contact with the WOAHA Reference Lab in the USA in the review and response to international requests. Furthermore, consultations are now ongoing with other Canadian Federal government stakeholders including the Public Health Agency Canada and Department of Defence to determine areas of potential collaboration to enhance the activities of the Reference lab.

The Lethbridge WOAHA Reference Lab for Anthrax is currently involved in two major initiatives:

Anthrax biological threat reduction in Ghana: The Lethbridge WOAHA Reference Lab for Anthrax was approached by Global Affairs Canada to share its expertise and to effectively enhance the scientific capacity at the Pong-Tamale Veterinary Lab in Ghana. The Lab is currently working with the Ghana Veterinary services to help build capacity for anthrax testing and diagnostics. Partnership between CFIA, Global Affairs Canada and the Pong-Tamale Lab would significantly increase biosafety and biosecurity in this region as well as help in building the needed lab capacity in the diagnostic testing of anthrax. This funding is enabling the training of technical staff at the Pong Tamale lab and also equipping the lab for anthrax diagnostic testing and readiness to respond to any potential biothreat event related to the use of anthrax. As part of this, the Lethbridge WOAHA Reference lab for Anthrax has provided expert technical training on biosafety/biosecurity, SOP development, QA and state of the art anthrax detection methods to technical staff from the Ghana veterinary Services both here in Canada and in Ghana (How Canada paved the road for COVID-19 testing in Ghana).

*High-consequence pathogens detection: The Canadian Safety and Security Program (CSSP) at Defence Research and Development Canada has recently committed to funding a collaborative project under the leadership of Dr. Chad Laing on metagenomics at the Lethbridge WOAHA Reference lab for Anthrax with one of the pathogens of interest in the project being *Bacillus anthracis*. This project will explore the use of Artificial Intelligence for front-line laboratories in preparing for high-consequence pathogens to reduce their risk. This collaboration between national federal agencies will build upon previously funded CSSP projects at the Reference lab related to anthrax biological threats.*

The Lethbridge WOAHA Reference lab for Anthrax will in future benefit from twinning with other labs in Africa to share expertise, provide

technical support and help build capacity for anthrax testing and diagnostics based on the experience gained in working with the Ghana Veterinary Services. This will also raise the level of support for international diagnostic testing activities. We look forward to your continued support and cooperation.