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 WOAH 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 WOAH 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 WOAH?
   No

3. Did your laboratory supply standard reference reagents (non-WOAH-approved) and/or other diagnostic reagents to WOAH Members?
   No
4. Did your laboratory produce vaccines?  
Not applicable
5. Did your laboratory supply vaccines to WOAH 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 WOAH 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 WOAH Standards for the designated pathogen or disease?  
No

**TOR4: DIAGNOSTIC TESTING FACILITIES**

10. Did your laboratory carry out diagnostic testing for other WOAH Members?  
No
11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAH Member?  
Yes

<table>
<thead>
<tr>
<th>NAME OF THE WOAH MEMBER</th>
<th>PURPOSE</th>
<th>HOW THE ADVICE WAS PROVIDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINLAND</td>
<td>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</td>
<td>The advice was provided via email messages.</td>
</tr>
<tr>
<td>GRENADA</td>
<td>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.</td>
<td>The advice was provided via email messages</td>
</tr>
</tbody>
</table>

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
<table>
<thead>
<tr>
<th>Country</th>
<th>Description</th>
<th>Advice Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sierra Leone</td>
<td>Transboundary Animal Diseases in Sierra Leone 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. 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.</td>
<td>The advice was provided via email messages.</td>
</tr>
<tr>
<td>Georgia</td>
<td>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.</td>
<td>The advice was provided via email messages.</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>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.</td>
<td>The advice was provided via email messages.</td>
</tr>
<tr>
<td>Canada</td>
<td>Dr. Geneviève Toupin, DVM, National Manager - Acting Ruminant and Swine Programs</td>
<td>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.</td>
</tr>
</tbody>
</table>

**TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES**

12. Did your laboratory participate in international scientific studies in collaboration with WOAH 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


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 WOAH Members?

Yes

a) Technical visit : Nil

b) Seminars : The WOAH 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

<table>
<thead>
<tr>
<th>Type of technical training provided (a, b, c or d)</th>
<th>Country of origin of the expert(s) provided with training</th>
<th>No. participants from the corresponding country</th>
</tr>
</thead>
<tbody>
<tr>
<td>B) Provided virtual training on the use of reagents and supplies that were shipped out to the Ghana veterinary services labs in Ghana</td>
<td>Ghana</td>
<td>2</td>
</tr>
</tbody>
</table>

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

<table>
<thead>
<tr>
<th>Quality management system adopted</th>
<th>Certificate scan (PDF, JPG, PNG format)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ASB_CTF_15366-CFIA-Certificate_v2_2020-</td>
</tr>
</tbody>
</table>
19. Is your quality management system accredited?
Yes

<table>
<thead>
<tr>
<th>Test for which your laboratory is accredited</th>
<th>Accreditation body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Procedures for the isolation and identification of Bacillus anthracis</td>
<td>Standards Council of Canada</td>
</tr>
</tbody>
</table>

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 WOAH?
No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAH?
No

**TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES**

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

24. Are you a member of a network of WOAH Reference Laboratories designated for the same pathogen?
Not applicable (Only WOAH Reference Laboratory designated for the disease)

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen?
No

26. Did your laboratory collaborate with other WOAH 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 WOAH Reference Laboratories for the same pathogen?
No

**TOR12: EXPERT CONSULTANTS**

28. Did your laboratory place expert consultants at the disposal of WOAH?
Yes
Dr. Amoako was contacted by WOAH 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 WOAH Bureaus of the Code Commission and the Biological Standards Commission (BSC).

Responded to specific technical question from WOAH.

29. Additional comments regarding your report:
Yes

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

Coming out of the COVID pandemic, the year 2022 posed some challenges for the WOAH 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 WOAH laboratories and this may have contributed to the overall reduction in international activities related to anthrax. In 2022, the WOAH Reference lab for Anthrax in Lethbridge continued to provide technical advice for WOAH 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 WOAH 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 WOAH 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 WOAH 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 WOAH 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 WOAH 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 WOAH Reference Lab for Anthrax is currently involved in two major initiatives:

- Anthrax biological threat reduction in Ghana: The Lethbridge WOAH 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 WOAH 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 WOAH 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 WOAH Reference lab for Anthrax will in future benefit from twinning with other labs in Africa to share expertise, provide

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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.