WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted: 2 mai 2023 11:31

Laboratory Information

| Name of disease (or topic) for which you are a designated WOAH Reference Laboratory: | brucellosis |
|---|
| Address of laboratory: | Kimron Veterinary Institute |
| Tel.: | 972-3-9681682 |
| E-mail address: | menachemba48@gmail.com |
| Website: | |
| Name (including Title) of Head of Laboratory (Responsible Official): | Dr. Boris Yakobson |
| Name (including Title and Position) of WOAH Reference Expert: | Dr. Menachem Banai |
| 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)

Yes

<table>
<thead>
<tr>
<th>Diagnostic Test</th>
<th>Indicated in WOAH Manual (Yes/No)</th>
<th>Total number of test performed last year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect diagnostic tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFT</td>
<td>yes</td>
<td>Surveillance: Small ruminants - 756/11368; Cattle - 528/27394; Camels - 22/433, Goats - 284/2885, humans - 45/425</td>
</tr>
</tbody>
</table>
FPA | yes | Surveillance: Small ruminants - 2110/11368; Goats - 584/2885; Camels - 32/433; Goats - 584/2885
---|---|---
Direct diagnostic tests | | Nationally | Internationally
Bacteriological isolation and biotyping | yes | Isolate typing: B. abortus (cattle) - 1 case; B. melitensis bv. 1 sheep - 113 cases; B. melitensis bv. 2 - 61 cases; B. melitensis Rev. 1 vaccine - 1 case; Human isolates 175 cases

**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 (nonWOAH-approved) and/or other diagnostic reagents to WOAH Members?
   No

4. Did your laboratory produce vaccines?
   No

5. Did your laboratory supply vaccines to WOAH Members?
   No

**TOR3: NEW PROCEDURES**

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

   **NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED** | **DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)**
   ---|---
   Serum PCR | This method provides a molecular DIVA solution to distinguish between Rev. 1 vaccine induced and field case induced antibodies. Serum PCR Diagnosis of Brucella melitensis Infection in Rev. 1 Vaccinated Sheep Shubham Mathur; Svetlana Bardenstein; Daniel Cohen; Menachem Banai Microbiol. Res. 2023, Volume 14, Issue 1, 21-33

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

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

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

   **NAME OF THE NEW VACCINE DEVELOPED** | **DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)**
   ---|---
   Brucella OPS | A research on developing a novel vaccine based upon B. melitensis OPS. Shubham Mathur Ph.D. Dissertation, Tel Aviv University, Israel

**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 COUNTRY RECEIVING A TECHNICAL CONSULTANCY</th>
<th>PURPOSE</th>
<th>HOW THE ADVICE WAS PROVIDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>KYRGYZSTAN</td>
<td>Training on Brucella serology</td>
<td>Five days Personal visit of Dr. Svetlana Bardenstein: Regional Training on Laboratory Diagnosis of brucellosis for Central Asia January 2022</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?
Yes

<table>
<thead>
<tr>
<th>Title of the study</th>
<th>Duration</th>
<th>PURPOSE OF THE STUDY</th>
<th>PARTNERS (INSTITUTIONS)</th>
<th>WOAH MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirming B. abortus cases</td>
<td>June 2022</td>
<td>Confirming B. abortus cases in dairy cattle in Israel</td>
<td>Dr. Falk Melzer, Friedrich Loeffler Institute</td>
<td>GERMANY</td>
</tr>
</tbody>
</table>

TOR6: EPIZOOLOGICAL DATA

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

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:


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

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:

Confirming B. canis positive serological case with Cornell University Health Diagnostic Center
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:

peer review

Natural Brucella melitensis infection and Rev.1 vaccination induce specific antiBrucella O-polysaccharide antibodies involved in the complement mediated Brucella cell killing.


5. Long-Read Sequencing and Hybrid Assembly for Genomic Analysis of Clinical Brucella melitensis Isolates.


6. The association between natural drinking water sources and the emergence of zoonotic leptospirosis among grazing beef cattle herds during a human outbreak.


b) International conferences:

Dr. Svetlana Bardenstein participated in the conference Brucellosis International Research Conference (including the 74st Brucellosis Research Conference) in Italy.

c) National conferences:

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

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

Yes

a) Technical visit: Regional Training on Laboratory Diagnosis of Brucellosis for Central Asia, Kyrgyzstan, Bishkek, January 2022

b) Seminars: Dr. Bardenstein attended Brucellosis International Research Conference (including the 74st Brucellosis Research Conference) in Italy.

c) Hands-on training courses:

d) Internships (>1 month)

<table>
<thead>
<tr>
<th>Type of technical training</th>
<th>Country of origin of the expert(s)</th>
<th>No. participants from the</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOAH Reference Laboratory Reports Activities 2022</td>
<td></td>
<td></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>
<th>Accreditation body</th>
</tr>
</thead>
</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>CFT, FPA</td>
<td>Israel Laboratory Accreditation Authority</td>
</tr>
<tr>
<td>Brucella typing</td>
<td>Israel Laboratory Accreditation Authority</td>
</tr>
</tbody>
</table>

20. Does your laboratory maintain a "biorisk management system" for the pathogen and the disease concerned?
Yes
Bisafety Level 3

**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?
Yes

<table>
<thead>
<tr>
<th>Title of event</th>
<th>Date (mm/yy)</th>
<th>Location</th>
<th>Role (speaker, presenting poster, short communications)</th>
<th>Title of the work presented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brucellosis International Research Conference (Including the 74st Brucellosis Research Conference)</td>
<td>2022-09-16</td>
<td>Italy</td>
<td>Participant</td>
<td></td>
</tr>
</tbody>
</table>

**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?
No

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?

Yes

<table>
<thead>
<tr>
<th>Purpose for inter-laboratory test comparisons</th>
<th>Role of your reference laboratory (organizer/participant)</th>
<th>No. participating laboratories</th>
<th>Region(s) of participating WOAH Member Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFT, MAT</td>
<td>Participating</td>
<td>22</td>
<td>Africa, Asia and Pacific, Europe, Middle East</td>
</tr>
<tr>
<td>Typing Brucella strains by PCR</td>
<td>Participating</td>
<td>14</td>
<td>Africa, America, Asia and Pacific, Middle East</td>
</tr>
</tbody>
</table>

**TOR12: EXPERT CONSULTANTS**

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

Yes

<table>
<thead>
<tr>
<th>KIND OF CONSULTANCY</th>
<th>Location</th>
<th>SUBJECT (FACULTATIVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution to the last edition of the WOAH manual for terrestrial animals</td>
<td>e-mails</td>
<td>Revising WOAH manual for terrestrial animals</td>
</tr>
</tbody>
</table>

29. Additional comments regarding your report:

Yes

*Our national activity involved serological testing of thousands of animals, small ruminants and cattle, as well as camels. B. canis emerged as a new pathogen in the country. B. abortus was first isolated in a dairy farm after a long period of being free. This farm has been destructed, and no further events have been notified since. Source of infection was not revealed.*