WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted: 10 février 2023 16:14

**Laboratory Information**

| Name of disease (or topic) for which you are a designated WOAH Reference Laboratory: | Theileriosis |
| Address of laboratory: | Istituto Zooprofilattico Sperimentale della Sicilia (IZSSi), via Gino Marinuzzi 3, 90129, Palermo ITALY |
| Tel.: | +39-091 656.5230 |
| E-mail address: | alessandra.torina@izssicilia.it |
| Website: | www.izssicilia.it |
| Name (including Title) of Head of Laboratory (Responsible Official): | Dr. Salvatore Seminara, General manager Istituto Zooprofilattico Sperimentale della Sicilia |
| Name (including Title and Position) of WOAH Reference Expert: | Alessandra Torina, PhD, Director of Serological Diagnostic Area |
| 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>Theileria annulata IFI</td>
<td>yes</td>
<td>44</td>
</tr>
</tbody>
</table>

WOAH Reference Laboratory Reports Activities 2022
### Theileria equi IFI
- Yes
- Nationally: 28
- Internationally: 32

### Theileria equi ELISA
- Yes
- Nationally: 28
- Internationally: 32

#### Direct diagnostic tests

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Available</th>
<th>Nationally</th>
<th>Internationally</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCR Theileria annulata (50kDa surface antigen gene)</td>
<td>Yes</td>
<td>78</td>
<td>0</td>
</tr>
<tr>
<td>PCR real time Theileria annulata (gene 18S rRNA)</td>
<td>Yes</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PCR Theileria ovis (SSU rRNA gene)</td>
<td>Yes</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>PCR Theileria equi (merozoite antigen 1)</td>
<td>Yes</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>Theileria spp. blood smears</td>
<td>Yes</td>
<td>188</td>
<td>0</td>
</tr>
<tr>
<td>PCR Theileria spp (gene 18S rRNA)</td>
<td>Yes</td>
<td>188</td>
<td>77</td>
</tr>
<tr>
<td>Babesia/Theileria Reverse Line Blot</td>
<td>Yes</td>
<td>12</td>
<td>77</td>
</tr>
</tbody>
</table>

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**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?

Yes

<table>
<thead>
<tr>
<th>Type of Reagent Available</th>
<th>Related Diagnostic Test</th>
<th>Produced/Provide</th>
<th>Amount Supplied Nationally (ML, MG)</th>
<th>Amount Supplied Internationally (ML, MG)</th>
<th>No. of Recipient WOAH Member Countries</th>
<th>Country of Recipients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theileria annulata Positive Serum</td>
<td>IFI</td>
<td>Produced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theileria equi positive serum</td>
<td>IFI ELISA</td>
<td>Provide</td>
<td></td>
<td>4 ML</td>
<td>1</td>
<td>MiddleEast</td>
</tr>
<tr>
<td>Theileria ovis positive control</td>
<td>PCR</td>
<td>Produced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theileria equi positive control</td>
<td>PCR</td>
<td>Provide</td>
<td></td>
<td>8 ML</td>
<td>1</td>
<td>Europe</td>
</tr>
<tr>
<td>Theileria annulata positive control</td>
<td>PCR</td>
<td>Produced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theileria annulata negative serum</td>
<td>IFI</td>
<td>Produced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theileria annulata negative control</td>
<td>PCR</td>
<td>Produced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theileria equi negative control</td>
<td>PCR</td>
<td>Provide</td>
<td></td>
<td>28 ML</td>
<td>1</td>
<td>Europe</td>
</tr>
<tr>
<td>Theileria spp positive control</td>
<td>PCR</td>
<td>Produced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theileria spp negative control</td>
<td>PCR</td>
<td>Produced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED</th>
<th>DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLB Equine Theileriosis</td>
<td>Report Italian Ministry of Health RC IZSSI 07/18</td>
</tr>
</tbody>
</table>

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?
Yes

<table>
<thead>
<tr>
<th>NAME OF WOAH MEMBER COUNTRY SEEKING ASSISTANCE</th>
<th>DATE</th>
<th>WHICH DIAGNOSTIC TEST USED</th>
<th>NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT</th>
<th>NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALAWI</td>
<td>2022-02-25</td>
<td>RLB</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>MALAWI</td>
<td>2022-02-25</td>
<td>PCR</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>THE NETHERLANDS</td>
<td>2022-11-29</td>
<td>IFI</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>THE NETHERLANDS</td>
<td>2022-11-29</td>
<td>ELISA</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>THE NETHERLANDS</td>
<td>2022-11-29</td>
<td>PCR</td>
<td>32</td>
<td>32</td>
</tr>
</tbody>
</table>

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>SOUTH AFRICA</td>
<td>Sharing diagnostic tools and proficiency test</td>
<td>e-mail and in presence</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>Validation rapid test for Theileria equi</td>
<td>24</td>
<td>Validation</td>
<td>TBD International BV</td>
<td>THE NETHERLANDS</td>
</tr>
<tr>
<td>Monitoring TBD</td>
<td>12</td>
<td>Epidemiological investigation</td>
<td>African Union Centre for Tick and Tick borne disease</td>
<td>MALAWI</td>
</tr>
<tr>
<td>TBP in Hyalomma Ticks</td>
<td>12</td>
<td>Tick ecology</td>
<td>Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA- CSIC)</td>
<td>SPAIN</td>
</tr>
<tr>
<td>Immune response TBP</td>
<td>12</td>
<td>Study of immune response</td>
<td>SaBio. Instituto de Investigación en Recursos Cinegéticos, IREC (CSIC, UCLM, JCCM)</td>
<td>SPAIN</td>
</tr>
<tr>
<td>Immune response TBP</td>
<td>12</td>
<td>Study of immune response</td>
<td>Department of Veterinary Pathobiology, Center for Veterinary Health Sciences Oklahoma State University,</td>
<td>UNITED STATES OF AMERICA</td>
</tr>
<tr>
<td>Immune response TBP</td>
<td>12</td>
<td>Study of immune response</td>
<td>Biochemistry Section, Regional Centre for Biomedical Research (CRIB), Faculty of Science and Chemical Technologies, University of Castilla-La Mancha, Toledo</td>
<td>SPAIN</td>
</tr>
</tbody>
</table>

### TOR6: EPIZOOLOGICAL DATA

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

Yes

<table>
<thead>
<tr>
<th>IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease hazards in cattle in South of Italy (Sicily)</td>
</tr>
<tr>
<td>Malawi prevalence of TBP in animals and animais</td>
</tr>
<tr>
<td>TBP in Parma province</td>
</tr>
</tbody>
</table>
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:

Disease hazards in cattle in South of Italy (Sicily)
Malawi prevalence of TBP in ticks and animals

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:

b) International conferences:

2
Investigation of disease hazards in cattle in South of Italy (Sicily) 31st World Buiatrics Congress
Piroplasmosis in Cattle 31st World Buiatrics Congress

c) National conferences:

1
National Buiatric Congress ANAPLASMA MARGINALE: STUDIO DI UN FOCOLAIO IN PROVINCIA DI PARMA Theileria was also investigated

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 : 2

b) Seminars :

c) Hands-on training courses: 5

d) Internships (>1 month) 2

| 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 |
**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>ISO 17025</td>
<td>Certificato di Accreditamento n. 0246.pdf</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>PCR Theileria annulata</td>
<td>ACCREDIA</td>
</tr>
<tr>
<td>IFI Theileria equi</td>
<td>ACCREDIA</td>
</tr>
<tr>
<td>PCR Theileria equi</td>
<td>ACCREDIA</td>
</tr>
<tr>
<td>Theileria spp smears</td>
<td>ACCREDIA</td>
</tr>
<tr>
<td>ELISA Theileria equi</td>
<td>ACCREDIA</td>
</tr>
</tbody>
</table>

20. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?

Yes

D.lgs 81/2008 “Testo unico in materia di salute e sicurezza nei luoghi di lavoro”.

**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>30th Regional Conference for Europe WOAH</td>
<td>2022-10-04</td>
<td>Catania</td>
<td>Presenting poster</td>
<td>Investigation of zoonotic hazards in Sicilian cattle farms (South of Italy)</td>
</tr>
<tr>
<td>31st World Buiatrics Congress</td>
<td>2022-09-08</td>
<td>Madrid</td>
<td>Speaker</td>
<td>Piroplasmosis of cattle</td>
</tr>
<tr>
<td>Webinar European College</td>
<td></td>
<td></td>
<td></td>
<td>THEILERIOSIS IN SHEEP</td>
</tr>
<tr>
<td>Event Details</td>
<td>Date</td>
<td>Type</td>
<td>Role</td>
<td>Location/Details</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>------------</td>
<td>-------------------</td>
<td>---------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Did your laboratory exchange information with other WOAH Reference Laboratories designated for the same pathogen or disease?</td>
<td>2022-12-07</td>
<td>Webinar</td>
<td>Speaker</td>
<td>Yes</td>
</tr>
<tr>
<td>24. Are you a member of a network of WOAH Reference Laboratories designated for the same pathogen?</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen?</td>
<td>2022-05-28</td>
<td>LIVE WEBINAR ECM</td>
<td>Speaker</td>
<td>No</td>
</tr>
<tr>
<td>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?</td>
<td>2022-05-28</td>
<td>Live webcast</td>
<td>attendance</td>
<td>No</td>
</tr>
<tr>
<td><strong>TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOAH Reference Laboratories for the same pathogen?</td>
<td>2022-05-23</td>
<td></td>
<td>attendance</td>
<td>No</td>
</tr>
<tr>
<td><strong>TOR12: EXPERT CONSULTANTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Did your laboratory place expert consultants at the disposal of WOAH?</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>KIND OF CONSULTANCY</strong></td>
<td><strong>Location</strong></td>
<td><strong>SUBJECT (FACULTATIVE)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WOAH Terrestrial Manual: new chapter</td>
<td>Palermo</td>
<td>Theileriosis in sheep and goats (infection with <em>Theileria lestoquardi</em>, <em>T. luwenshuni</em> and <em>T. uilenbergi</em>)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WOAH Biological Standards Commission</td>
<td>Palermo</td>
<td>Code point 4 of Article 14.X.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Additional comments regarding your report:</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td><em>Due to the COVID19 pandemic, some activities have been reduced.</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WOAH Reference Laboratory Reports Activities 2022</td>
<td></td>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>