

OIE Reference Laboratory Reports Activities

Activities in 2020

This report has been submitted : 2021-01-19 12:33:11

| | |
|--|--|
| Name of disease (or topic) for which you are a designated OIE Reference Laboratory: | Brucellosis (Brucella abortus, B. melitensis, B. suis) |
| Address of laboratory: | Naumburger Str. 96a 07743 Jena GERMANY |
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| Name (including Title) of Head of Laboratory (Responsible Official): | Dr. Falk Melzer |
| Name (including Title and Position) of OIE Reference Expert: | Prof. Heinrich Neubauer |
| 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 | | Nationally | Internationally |
| iELISA | Yes | 43 | - |
| CFT | Yes | 184 | 23 |
| SAT | Yes | 147 | 23 |
| RBT | Yes | 184 | 23 |
| Direct diagnostic tests | | Nationally | Internationally |
| PCR | Yes | 48 | 44 |
| MALDI | No | 24 | 44 |
| Isolation | Yes | 4 | - |

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 |
|---------------------------|---|-----------------------|-------------------------------------|--|---------------------------------------|--|
| pos/neg serum | CFT, SAT, RBT, ELISA | Produced and provided | 19 ml | 14 ml | 3 | <input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East |
| unknown milk samples | milk ELISA brucellosis interlaboratory test | Produced and provided | 21 samples | | | <input 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?

Yes

| Name of OIE Member Country seeking assistance | Date (month) | No. samples received for provision of diagnostic support | No. samples received for provision of confirmatory diagnoses |
|---|--------------|--|--|
| BANGLADESH | January | 0 | 23 |
| EGYPT | February | 0 | 23 |

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

No

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 |
|--|-----------|---|--|---|
| Diagnosis of brucellosis | 2019-2021 | Improvement of biosafety and diagnosis of brucellosis | State Scientific Control Institute of Biotechnology and Strains of Microorganisms State Scientific and Research Institute of Laboratory Diagnostics and Veterinary and Sanitary Expertise | UKRAINE |
| Identification, geographic distribution and risk factors of Brucella abortus and Brucella melitensis infection in cattle in Algeria | 2019-2020 | Epidemiology of brucellosis in Algeria | Ecole Nationale Supérieure Vétérinaire d'Alger | ALGERIA |
| Phenotyping and WGS-based analysis of antimicrobial resistance and virulence-associated determinants of clinical and non-clinical Brucella melitensis and Brucella abortus from Egypt. | 2020 | information on the genotype of Brucella Isolates from Egypt | Animal Health Research Institute, Agricultural Research Center, Cairo 4Department of Livestock Infectiology and Environmental Hygiene, Institute of Animal Science, University of Hohenheim, Stuttgart, Germany Faculty of Veterinary Medicine, Benha University, Moshtohor, Toukh, Egypt, 2Institute for Infectious Diseases and Infection Control, Jena University Hospital, Jena, Germany. | EGYPT |

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:

Seroepidemiology and the Molecular Detection of Animal Brucellosis in Algeria

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

Yes

| |
|---|
| If the answer is yes, please provide details of the data collected: |
| Seroepidemiology and the Molecular Detection of Animal Brucellosis in Algeria |

**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: 10

Hussain A, Jamil T, Tareen AM, Melzer F, Hussain MH, Khan I, Saqib M, Zohaib A, Hussain R, Ahmad W, Iqbal M, Neubauer H (2020) Serological and molecular investigation of brucellosis in breeding equids in Pakistani Punjab. *Pathogens* 9(9), 673. doi: 10.3390/pathogens9090673

Jamil T, Kasi KK, Melzer F, Saqib M, Ullah Q, Khan MR, Dadar M, Tayyab MH, Schwarz S, Neubauer H (2020) Revisiting Brucellosis in small ruminants of western border areas in Pakistan. *Pathog* 9(11), 929. doi: 10.3390/pathogens9110929

Jamil T, Melzer F, Saqib M, Shahzad A, Khan Kasi K, Hussain MH, Rashid I, Tahir U, Khan I, Haleem Tayyab MH, Ullah S, Mohsin M, Mansoor MK, Schwarz S, Neubauer H (2020) Serological and molecular detection of bovine brucellosis at institutional livestock farms in Punjab, Pakistan. *Int J Environment Res Public Health*, 17, 1412; doi:10.3390/ijerph17041412

Khan AU, Melzer F, Hendam AM, Sayour AE, Khan I, Elschner MC, Younus M, Ehtisham-ul-Haque S, Waheed U, Farooq M, Ali S, Neubauer H, El-Adawy H (2020) Seroprevalence and molecular identification of *Brucella* spp. in bovines in Pakistan - investigating association with risk factors using machine learning. *Front Vet Sci* 7, 594498. doi: 10.3389/fvets.2020.594498

Khan AU, Sayour AE, Melzer F, El-Sally SAE, Elschner MC, Shell WS, Moawad AA, Mohamed SA, Hendam A, Roesler U, Neubauer H, El-Adawy H (2020) Seroprevalence and molecular identification of *Brucella* spp. in camels in Egypt. *Microorganisms* 8, 1035. doi:10.3390/microorganisms8071035 (part of the Special Issue Updates on Brucellosis)

Saeed U, Ali S, Latif T, Rizwan M, Saif A, Iftikhar A, Mohayud Din Hashmi SG, Khan AU, Khan I, Melzer F, El-Adawy H, Neubauer H (2020) Seroprevalence and spatial distribution of animal Brucellosis in Central Punjab, Pakistan. *Int J Environment Res Public Health* 17, 9603. doi: 10.3390/ijerph17186903

Ullah Q, Jamil T, Melzer F, Saqib M, Hussain MH, Aslam MA, Jamil H, Iqbal MA, Tahir U, Ullah S, Qureshi ZI, Schwarz S, Neubauer H (2020) Epidemiology and associated risk factors for brucellosis in small ruminants kept at institutional livestock farms in Punjab, Pakistan. *Front Vet Sci* 7, 526. doi: 10.3389/fvets.2020.00526

Wareth G, El-Diasty M, Melzer F, Schmoock G, Moustafa S, Elbeskawy M, Khater D, Hamdy M, Zaki H, Ferreira AC, Ekateriniadou LV, Boukouvala E, Abdel-Gilil M, Menshawy A, Pérez Sancho M, Sonia S, Pletz MW, Neubauer H (2020) MLVA-16 Genotyping of *Brucella abortus* and *Brucella melitensis* isolates from different animal species in Egypt: Geographical relatedness and the mediterranean lineage. *Pathog* 9(6), 498. doi: 10.3390/pathogens9060498.

Wareth G, Kheimar A, Neubauer H, Melzer F (2020) Susceptibility of avian species to *Brucella* infection: A hypothesis-driven study. *Pathogens* 9(2), pii: E77. doi: 10.3390/pathogens9020077

Al-Sherida Y, El-Gohary AH, Mohamed A, El-Diasty M, Wareth G, Neubauer H, Abdelkhalek A (2020) Sheep brucellosis in Kuwait: A large-scale serosurvey, identification of *Brucella* species and zoonotic significance. *Vet Sci* 7, 132. doi:10.3390/vetsci7030132

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?

No

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) |
|-----------------------------------|--|
| DIN EN ISO/IEC 17025:2005 | Akkreditierungsurkunde_FLI-Riems-Jena_2019.pdf |

16. Is your quality management system accredited?

Yes

| Test for which your laboratory is accredited | Accreditation body |
|--|--------------------|
| microbiology; serology; molecular diagnosis | DAkKS |

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?

No

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 |
|--|--------------------------------|---|
| EU Bovine Brucellosis Serum Proficiency test 2020 | 28 | <input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East |
| Isolation | 20 | <input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East |
| PCR | 20 | <input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" 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:

The worldwide covid pandemia hindered the activities of the laboratory.