# OIE Reference Laboratory Reports Activities

## *Activities in 2017*

### This report has been submitted : 2018-01-17 11:35:03

| | |
|---|---|
| **Name of disease (or topic) for which you are a designated OIE Reference Laboratory:** | Brucellosis (Brucella abortus, B. melitensis, B. suis) |
| **Address of laboratory:** | New Haw, Addlestone Surrey KT15 3NB Weybridge UNITED KINGDOM |
| **Tel.:** | +44 1932 357610 |
| **Fax:** | +44-1932 357216 |
| **E-mail address:** | Adrian.Whatmore@apha.gsi.gov.uk |
| **Website:** | |
| **Name (including Title) of Head of Laboratory (Responsible Official):** | Mr Chris Hadkiss |
| **Name (including Title and Position) of OIE Reference Expert:** | Dr Adrian Whatmore Head, Bacterial Characterisation |
| **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 | |
|---|---|---|---|
| Indirect diagnostic tests | | Nationally | Internationally |
| cELISA / iELISA | Yes | 17510 | 549 |
| Milk iELISA | Yes | 35447 | 0 |
| RBT | Yes | 5289 | 317 |
| CFT | Yes | 588 | 580 |
| Direct diagnostic tests | | Nationally | Internationally |
| Phenotypic Characterisation | Yes | 24 | 1 |
| RT PCR | No | <20 | <1000 |
| Bruceladder | No | <20 | <50 |
| SNP typing | No | <20 | <50 |
| MLST | No | <20 | <50 |
| MLVA | No | 0 | 0 |

## *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?

Yes

*NOTE: Currently, there are 22 laboratories that produce Standard Reference Reagents officially recognised by the OIE for 19*

*diseases/pathogens. Please click the following link to the list of OIE-approved International Standard Sera: http://www.oie.int/en/our-scientific-expertise/veterinary-products/reference-reagents/. If the reagent is not listed on this page, it is NOT considered OIE-approved. The next two questions allow you to indicate non-OIE-approved diagnostic reagents.*

OIE-approved SRR producing laboratory – Select your lab from list:

| Disease | Test | Available from |
|---|---|---|
| Bovine brucellosis | Indirect and Competitive enzyme-linked immunosorbent assay; Complement fixation; Agglutination; Buffered Brucella antigen tests; Fluorescence polarisation assay | Dr Adrian Whatmore<br>Animal and Plant Health Agency, Weybridge, New Haw, Addlestone, Surrey KT15 3NB, United Kingdom<br>Tel: (44-1932) 35.76.10<br>Fax: (44-1932) 35.72.16<br>adrian.whatmore@apha.gsi.gov.uk |
| Brucella abortus | Complement fixation; Agglutination; Buffered Brucella antigen tests; Fluorescence polarisation assay; Indirect and Competitive enzyme-linked immunosorbent assay | Dr Adrian Whatmore (as above) |
| Ovine and caprine brucellosis (anti-Brucella melitensis [ISaBmS]) | Indirect and Competitive enzyme-linked immunosorbent assay; Fluorescence polarisation assay; Buffered Brucella antigen tests | Dr Adrian Whatmore (as above) |

| Type of reagent available | Related diagnostic test | Produced/ Supply imported | Amount supplied nationally (ml, mg) | Amount supplied internationally (ml, mg) | Name of recipient OIE Member Countries |
|---|---|---|---|---|---|
| OIEISS | All serodiagnostic tests | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ARGENTINA |
| OIEISS | All serodiagnostic tests | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ○<10mL<br>◉10-100mL<br>○100-500mL<br>○>500mL | FINLAND |
| OIEISS | All serodiagnostic tests | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | POLAND |
| OIEISS | All serodiagnostic tests | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | PORTUGAL |
| OIEISS | All serodiagnostic tests | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | SWITZERLAND |
| OIEISS | All serodiagnostic tests | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | UKRAINE |
| ISaBmS | All serodiagnostic tests | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | POLAND |
| ISaBmS | All serodiagnostic tests | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | UKRAINE |
| ELISA Standards | ELISA | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ARGENTINA |
| ELISA Standards | ELISA | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | AUSTRIA |

| | | | | | |
|---|---|---|---|---|---|
| ELISA Standards | ELISA | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | POLAND |
| ELISA Standards | ELISA | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ROMANIA |
| ELISA Standards | ELISA | Supply | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | ◉<10mL<br>○10-100mL<br>○100-500mL<br>○>500mL | SWEDEN |

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 |
|---|---|---|---|---|---|---|
| RBT Antigen | RBT | Produced/provided | 500ml | 2000ml | 12 | ☒Africa ☒Americas ☒Asia and Pacific ☒Europe ☐Middle East |
| MRT antigen | MRT | Produced/provided | 100ml | 1000ml | 7 | ☒Africa ☐Americas ☒Asia and Pacific ☒Europe ☐Middle East |
| SAT antigen | SAT | Produced/provided | | 1000ml | 7 | ☐Africa ☒Americas ☒Asia and Pacific ☒Europe ☐Middle East |
| CFT antigen | CFT | Produced/provided | | 500ml | 3 | ☐Africa ☒Americas ☐Asia and Pacific ☒Europe ☐Middle East |
| A/M antisera | Biotyping | Produced/provided | | <30ml | 4 | ☒Africa ☐Americas ☐Asia and Pacific ☒Europe ☐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?

No

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

Yes

| Name of the OIE Member Country receiving a technical consultancy | Purpose | How the advice was provided |
|---|---|---|
| SWITZERLAND | Training in warm CFTs | Training provided at APHA (1 week x four scientists) |
| TAJIKISTAN | Training in bacteriology, serology and molecular biology | In country |
| ETHIOPIA | Training in bacteriology and serology | At APHA (4 weeks) |
| TANZANIA | Training in molecular biology | In country |
| ARGENTINA | Advice on molecular testing | Electronic |

## *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 |
|---|---|---|---|---|
| Establishment of a multisectoral strategy for the control of brucellosis in the main periurban dairy production zones of West and Central Africa | 5 years | Capacity building to aid control of brucellosis in the main periurban dairy production zones of West and Central Africa | https://zelsbrucellosis.worldpress.com/ | SENEGAL |
| Molecular epidemiology of brucellosis in northern Tanzania | 3 years | Understanding brucellosis in Tanzania with the aim of providing the evidence base to inform control policy | http://livestocklivelihoodand health.org/about/our-partners/ | TANZANIA |
| Epidemiology of brucellosis in Tajikistan | 3 years | Capacity building to improve brucellosis diagnostic capabilities in human and veterinary sectors | | TAJIKISTAN |
| Epidemiology of brucellosis | 3 years | Understanding brucellosis in Ethiopia | | ETHIOPIA |
| OIE Twinning(extension) | 2 years | Capacity Building | CVDRL | AFGHANISTAN |

## *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

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

Yes

**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

Ayoola MC, Akinseye VO, Cadmus E, Awosanya E, Popoola OA, Akinyemi OO, Perrett L, Taylor A, Stack J, Moriyon I, Cadmus SI. Prevalence of bovine brucellosis in slaughtered cattle and barriers to better protection of abattoir workers in Ibadan, South-Western Nigeria. Pan Afr Med J. 2017 Sep 22;28:68.

Kershaw JL, Stubberfield EJ, Foster G, Brownlow A, Hall AJ, Perrett LL. Exposure of harbour seals Phoca vitulina to Brucella in declining populations across Scotland. Dis Aquat Organ. 2017 Sep 20;126(1):13-23.

Bundle DR, McGiven J. Brucellosis: Improved Diagnostics and Vaccine Insights from Synthetic Glycans. Acc Chem Res. 2017 Dec 19;50(12):2958-2967. doi: 10.1021/acs.accounts.7b00445.

Mandal SS, Duncombe L, Ganesh NV, Sarkar S, Howells L, Hogarth PJ, Bundle DR, McGiven J. Novel Solutions for Vaccines and Diagnostics To Combat Brucellosis. ACS Cent Sci. 2017 Mar 22;3(3):224-231.

Al-Griw HH, Kraim ES, Farhat ME, Perrett LL, Whatmore AM. Evidence of ongoing brucellosis in livestock animals in North West Libya. J Epidemiol Glob Health. 2017 Dec;7(4):285-288.

Whatmore AM, Dawson C, Muchowski J, Perrett LL, Stubberfield E, Koylass M, Foster G, Davison NJ, Quance C, Sidor IF, Field CL, St Leger J. Characterisation of North American Brucella isolates from marine mammals. PLoS One. 2017 Sep 21;12(9):e0184758.

Davison NJ, Perrett LL, Dawson C, Dagleish MP, Haskins G, Muchowski J, Whatmore AM. Brucella ceti Infection in a Common Minke Whale ( Balaenoptera acutorostrata ) with Associated Pathology. J Wildl Dis. 2017 Jul;53(3):572-576.

Al Dahouk S, Köhler S, Occhialini A, Jiménez de Bagüés MP, Hammerl JA, Eisenberg T, Vergnaud G, Cloeckaert A, Zygmunt MS, Whatmore AM, Melzer F, Drees KP, Foster JT, Wattam AR, Scholz HC. Brucella spp. of amphibians comprise genomically diverse motile strains competent for replication in macrophages and survival in mammalian hosts. Sci Rep. 2017 Mar 16;7:44420.

Morgan J, Wake T, Grace K, Perrett L, Whatmore A, Edwards D. Brucella canis in a dog in the UK. Vet Record. 2017. 180(15):384-385.

Whatmore AM, Perrett LL, Friggens M. Second UK isolation of B. canis. Vet Record. 2017. 180(25):617.

b) International conferences: 5

Performance of a synthetic OPS antigen-based DIVA assay for the diagnosis of Brucella abortus in cattle. John McGiven, AAVLD Meeting.

Validation of a commercial rLPS-based antibody ELISA for Brucella ovis and Brucella canis. John McGiven, AAVLD Meeting.

Recent cases of B. canis in the UK. Adrian Whatmore, EURL Meeting, Paris.

Preparation of a new OIE standard. John McGiven, EURL Meeting, Paris.

Brucella among febrile outpatients and their household members in northern Tanzania. Adrian Whatmore, East African Research in Progress Meeting, Moshi, Tanzania.

c) National conferences: 3

History of Brucellosis Eradication in the UK. Adrian Whatmore, APHA100 Conference.

A New Era in Brucellosis Diagnosis and Control. John McGiven, Royal Society Meeting.

Characterisation of suspect Brucella isolates from humans submitted to the UK National Reference Laboratory between 2009 and 2016. Emma Dale. Med-Vet-Net Association 5th International Scientific Conference 27-29 June 2017.

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?

Yes

a) Technical visits: 2
b) Seminars: 0
c) Hands-on training courses: 2
d) Internships (>1 month): 1

| 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 |
|---|---|---|
| a | Tajikistan | 15 |
| c | Switzerland | 4 |
| c | Tanzania | 2 |
| d | Ethiopia | 1 |

## *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 certified according to an International Standard?

Yes

| Quality management system adopted | Certificate scan (PDF, JPG, PNG format) |
|---|---|
| ISO/IEC 17025/2005 | UKAS_certificate.pdf |
| ISO/IEC 90001:2015 | ISO9001-2015_Certificate.pdf |

16. Is your laboratory accredited by an international accreditation body?

Yes

| Test for which your laboratory is accredited | Accreditation body |
|---|---|
| RBT | UKAS |
| CFT | UKAS |
| SAT | UKAS |
| cELISA | UKAS |
| iELISA | UKAS |
| Milk iELISA | UKAS |
| Phenotypic Charactisation | UKAS |
| Evaluation of media | UKAS |

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?

No

*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*

## *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: