

# OIE Reference Laboratory Reports Activities

## *Activities in 2021*

**This report has been submitted : 2022-01-19 18:10:29**

<b>Name of disease (or topic) for which you are a designated OIE Reference Laboratory:</b>	Brucellosis (Brucella abortus, B. melitensis, B. suis)
<b>Address of laboratory:</b>	New Haw, Addlestone Surrey KT15 3NB Weybridge UNITED KINGDOM
<b>Tel.:</b>	+44-1932 35.76.10
<b>Fax:</b>	+44-1932 35.72.16
<b>E-mail address:</b>	Adrian.Whatmore@apha.gov.uk
<b>Website:</b>	
<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	Ian Hewett, Interim Chief Executive, APHA
<b>Name (including Title and Position) of OIE Reference Expert:</b>	Dr Adrian Whatmore Head of Bacteriology
<b>Which of the following defines your laboratory? Check all that apply:</b>	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 (Serum)	Yes	4262	25
cELISA	Yes	13652	907
CFT	Yes	811	299
RBT	Yes	5231	154
SAT	Yes	338	102
iELISA (Milk)	Yes	33222	0
RSA (B. canis)		487	610
SAT (B. canis)		1433	317
ELISA (B. canis)		24	79
Direct diagnostic tests		Nationally	Internationally
Culture	Yes	2015	55
Real Time PCR	Yes	20	221
Brucladder	Yes	<10	31
SNP Typing		<10	25
MLST		<10	10
MLVA		<10	20
WGS		<10	42

**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 Animal and Plant Health Agency, Weybridge, New Haw, Addlestone, Surrey KT15 3NB, United Kingdom Tel: (44-1932) 35.76.10 Fax: (44-1932) 35.72.16 adrian.whatmore@apha.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 serological tests	Supply	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	ARGENTINA BELGIUM CHILE FINLAND ISRAEL MOLDOVA
ISaBmS	All serological tests	Supply	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	ARGENTINA
OIE ELISA Standards	ELISAs	Supply	<input type="radio"/> <10mL <input checked="" type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input type="radio"/> <10mL <input checked="" type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	ARGENTINA BELGIUM CHILE EL SALVADOR

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
Diagnostic kit	Milk iELISA	Produced	240 kits	15 kits	4	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Diagnostic kit	cELISA	Produced	2 kits	20 kits	4	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Antigen	Rose Bengal Test	Produced	500 ml	4000 ml	6	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Antigen	Milk Ring Test	Produced	300 ml	8500 ml	4	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
Antigen	Serum Agglutination Test	Produced	100 ml	600 ml		<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Antigen	Complement Fixation Test	Produced	100 ml		1	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

Positive antiserum	Various	Produced	7	65	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Monospecific serum	Phenotypic Characterisation	Produced	6 ml		<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" 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
RWANDA	September	150	0
ZAMBIA	October	5	

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
RWANDA	Advice on serology, molecular diagnostics and bacteriology	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
IDEMBRU	2.5 years	Produce a toolkit of immunological and molecular techniques to detect classical and emerging strains of Brucella sp	ANSES, France (lead) Multiple EU partners	FRANCE
Brucellosis in Kenya- understanding epidemiology and informing control at regional scales	1 year	Improve understanding of Brucellosis epidemiology and control strategies in three regions of Kenya	University of Nairobi, Institute of tropical and infectious diseases (UNITID), Kenya Medical Research Institute (KEMRI), University of Glasgow	KENYA
Establishment of a multisectorial strategy for the control of brucellosis in the main periurban dairy production zones of West and Central Africa	5 years	Capacity building	Multiple in West Africa. Led by Royal Veterinary College, London	SENEGAL
Role of Camels in Transmission of Brucella spp and Middle East Respiratory Syndrome Coronavirus to Humans in Kenya	4 years	To protect human and animal health by describing and quantifying the transmission dynamics of Brucella spp and the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) and developing a robust brucellosis prevention and control model for Kenya.	Defence Threat Reduction Agency - USA, Washington State University,	KENYA

***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:

See publications below

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:
See publications below

**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: 8

Whatmore AM, Foster JT. Emerging diversity and ongoing expansion of the genus *Brucella*. *Infect Genet Evol.* 2021 Aug;92:104865. doi: 10.1016/j.meegid.2021.104865.

Cloekaert A, Zygmunt MS, Scholz HC, Vizcaino N, Whatmore AM. Editorial: Pathogenomics of the Genus *Brucella* and Beyond. *Front Microbiol.* 2021 Jul 8;12:700734. doi: 10.3389/fmicb.2021.700734.

Mubanga M, Mfuno RL, Kothowa J, Mohamud AS, Chanda C, McGiven J, Bumbangi FN, Hang'ombe BM, Godfroid J, Simuunza M, Muma JB. *Brucella* Seroprevalence and Associated Risk Factors in Occupationally Exposed Humans in Selected Districts of Southern Province, Zambia. *Front Public Health.* 2021 Nov 17;9:745244. doi: 10.3389/fpubh.2021.745244.

Lukambagire AS, Mendes ÂJ, Bodenham RF, McGiven JA, Mkenda NA, Mathew C, Rubach MP, Sakasaka P, Shayo DD, Maro VP, Shirima GM, Thomas KM, Kasanga CJ, Kazwala RR, Halliday JEB, Mmbaga BT. Performance characteristics and costs of serological tests for brucellosis in a pastoralist community of northern Tanzania. *Sci Rep.* 2021 Mar 9;11(1):5480. doi: 10.1038/s41598-021-82906-w.

Holt HR, Bedi JS, Kaur P, Mangtani P, Sharma NS, Gill JPS, Singh Y, Kumar R, Kaur M, McGiven J, Guitian J. Epidemiology of brucellosis in cattle and dairy farmers of rural Ludhiana, Punjab. *PLoS Negl Trop Dis.* 2021 Mar 18;15(3):e0009102. doi: 10.1371/journal.pntd.0009102.

Davison NJ, Dagleish MP, Dale EJ, Ten Doeschate M, Muchowski J, Perrett LL, Rocchi M, Whatmore AM, Brownlow AC. First confirmed reports of the isolation of *Brucella ceti* from a Risso's dolphin *Grampus griseus* and a killer whale *Orcinus orca*. *Dis Aquat Organ.* 2021 Jul 15;145:191-195. doi: 10.3354/dao03612.

Davison NJ, Dagleish MP, Ten Doeschate M, Muchowski J, Perrett LL, Rocchi M, Whatmore AM, Brownlow A. Meningoencephalitis in a common minke whale *Balaenoptera acutorostrata* associated with *Brucella pinnipedialis* and gamma-herpesvirus infection. *Dis Aquat Organ.* 2021 May 27;144:231-235. doi: 10.3354/dao03590.

Davison NJ, Brownlow A, Doeschate MT, Dale EJ, Foster G, Muchowski J, Perrett LL, Rocchi M, Whatmore AM, Dagleish MP. Neurobrucellosis due to *Brucella ceti* ST26 in Three Sowerby's Beaked Whales (*Mesoplodon bidens*). *J Comp Pathol.* 2021 Jan;182:1-8. doi: 10.1016/j.jcpa.2020.10.005.

b) International conferences: 4

Adrian Whatmore. Presentation 'Camel Brucellosis: Current Knowledge & Evidence Gaps'. OIE Sub-Regional Meeting on Camel Brucellosis and Trypanosomosis. 9/10 November 2021.

John McGiven. Presentation 'Work in progress for the drafting of an OIE Chapter for *Brucella canis*' Annual EU Brucellosis NRL Meeting. December 2021.

John McGiven. Presentation 'Brucella canis on the move' to BSL4ZNET [International Biosafety Level 4 Zoonotic Laboratory Network) 2021 International Conference, September 2021.

John McGiven. Presentation 'Detection and diagnosis of Brucella canis infection in dogs and humans' Brucella canis workshop organised by COHESIVE & IDEMBRU EJP Projects, May 2021.

c) National conferences: 1

John McGiven. 'Brucella canis in GB from 2020: Impact on animal and public health'. GB Veterinary Research Club Meeting, December 2021.

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)
ISO 9001:2015	ISO9001 certificate 2020-2023.pdf
ISO 17025: 2017	ISO17025.jpg

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
RBT	UKAS
CFT	UKAS
SAT	UKAS
cELISA	UKAS
iELISA	UKAS
Milk iELISA	UKAS
Phenotypic Characterisation	UKAS
Evaluation of Media	UKAS
Real Time PCR	UKAS
RSA (B. canis)	UKAS
SAT (B.canis)	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?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
OIE Sub-Regional Meeting on Camel Brucellosis and Trypanosomosis	11/21	Abu Dhabi (virtual)	Speaker	Camel Brucellosis: Current Knowledge & Evidence Gaps

**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?

Yes

Title of the project or contract	Scope	Name(s) of relevant OIE Reference Laboratories
IDEMBRU - European Joint Programme project	Capacity building for atypical Brucella	ANSES, FLI, IZS

**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 <sup>1</sup>	No. participating laboratories	Region(s) of participating OIE Member Countries
VETQAS PT0015 B. abortus CFT/SAT	33	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
VETQAS PT0016 B. abortus serum iELISA	34	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
VETQAS PT0018 B. abortus milk iELISA	15	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
VETQAS PT0019 B. abortus Milk Ring Test	6	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
VETQAS PT0020 B. abortus Rose Bengal Test	60	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
VETQAS PT0025 B. abortus Stain Slide and ID	21	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
VETQAS PT0187 Brucella PCR	16	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
VETQAS PT0022 B. canis SAT and RSA	17	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" 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:

APHA coordinated update of the OIE Chapter with other OIE reference laboratories.