

# OIE Reference Laboratory Reports Activities

## *Activities in 2019*

**This report has been submitted : 2020-01-17 00:00:00**

<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>	Animal and Plant Health Agency (APHA) 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>	Chris Hadkiss, 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	4942	189
cELISA	Yes	14404	387
CFT	Yes	312	319
RBT	Yes	5489	91
SAT	Yes	593	571
iELISA (Milk)	Yes	39999	0
Direct diagnostic tests		Nationally	Internationally
Culture	Yes	2435	0
Real time PCR	Yes	18	69
Bruceladder	Yes	2	46
SNP typing		0	69
MLST		45	15
MLVA		0	15

**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.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	<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	BELGIUM INDIA ISRAEL ITALY MEXICO PANAMA ROMANIA
ISaBms	All serodiagnostic tests	Supply	<input checked="" type="radio"/> <10mL <input 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	COLOMBIA GERMANY
OIE ELISA standards	ELISA	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	BELGIUM COLOMBIA FINLAND GERMANY GUATEMALA ITALY PANAMA

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	225 kits	47 kits	2	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Antigen	Milk Ring Test	Produced	2900 ml	1300	5	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Antigen	Serum Agglutination Test	Produced	500 ml	1600 ml	6	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Antigen	Rose Bengal Test	Produced	3900 ml	3100 ml	9	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Antigen	ComplementFixation Test	Produced	100 ml	700 ml	3	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

Positive antiserum	Various	Produced	52 ml	54 ml	13	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Diagnostic kit	cELISA	Produced	139 kits	65 kits	4	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Monospecific serum	PhenotypicCharacterisation	Produced	4 ml	1 ml	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <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
BURUNDI	August	0	55
TAJKISTAN	March	0	77
TURKEY	April	0	2
AFGHANISTAN	July	0	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
TURKEY	Training in antigen standardisation and molecular techniques	Training provided at APHA
TAJKISTAN	Training in cultural and molecular techniques	Training provided in loco
BANGLADESH	Analysis of molecular test data	Electronically
KENYA	Training in Molecular techniques	Training provided in loco
RWANDA	Training in immunological techniques	Training provided at APHA
SENEGAL	Training in immunological and molecular techniques	Training provided at APHA

**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 (lead)	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
Improving capabilities to detect and characterise Brucella in the veterinary and public Health sectors in the Republic of Tajikistan	3 years	Provide cultural and molecular training	SSESS, NCVD	TAJKISTAN
Epidemiology of brucellosis in Ethiopia	3 years	Understanding disease situation.	Various	ETHIOPIA
Establishment of a multisectoral strategy for the control of brucellosis in the main periurban dairy production zones of West & Central Africa.	5 years	Capacity building	Various	SENEGAL
OIE twinning on Brucellosis & Mycoplasmosis	Extension	Capacity building	CVDRL, Kabul	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

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: 5

Edao BM, Hailegebreal G, Berg S, Zewude A, Zeleke Y, Sori T, Almaw G, Whatmore AM, Ameni G, Wood JLN. Brucellosis in the Addis Ababa dairy cattle: the myths and the realities. *BMC Vet Res.* 14;14(1):396

Dadar M, Shahali Y, Whatmore AM. Human brucellosis caused by raw dairy products: A review on the occurrence, major risk factors and prevention. *Int J Food Microbiol.* 2019 Mar 2;292:39-47.

Dadar M, Alamian S, Behrozikhah AM, Yazdani F, Kalantari A, Etemadi A, Whatmore AM. Molecular identification of *Brucella* species and biovars associated with animal and human infection in Iran. *Veterinary Research Forum* 2019 10: 315-320.

Musallam I, Ndour AP, Yempabou D, Ngong CC, Dzousse MF, Mouiche-Mouliom MM, Feussom JMK, Ntirandekura JB, Ntakirutimana D, Fane A, Dembele E, Doumbia A, Ayih-Akakpo AAPS, Pato P, Pali M, Tapsoba ASR, Compaore GM, Gagara H, Garba AI, Chengat Prakashbabu B, Craighead L, Takahashi E, McGiven J, Nguipdop-Djomo P, Mangtani P, Alambédji-Bada R, Akakpo AJ, Guitian J. Brucellosis in dairy herds: A public health concern in the milk supply chains of West and Central Africa. *Acta Trop.* 2019 Sep;197:105042.

Islam MS, Garofolo G, Sacchini L, Dainty AC, Khatun MM, Saha S, Islam MA. First isolation, identification and genetic characterization of *Brucella abortus* biovar 3 from dairy cattle in Bangladesh. *Vet Med Sci.* 2019 Nov;5(4):556-562.

b) International conferences: 4

Roland Ashford; *Brucella abortus* epidemiology using whole genome sequencing. Workshop of EU National Reference Laboratories for Brucellosis (ANSES, Maisons Alfort, Paris, France), 19th – 20th Sept. 2019.

John McGiven; The Role of the APHA Reference Laboratory for Brucellosis. Regional Workshop on Food Security by the Ministry of Municipality and Environment (Qatar) in cooperation with The Department for Environment, Food and Rural Affairs (UK), Doha, 2nd December 2019.

John McGiven: Transboundary Zoonotic Disease Symposium, Izmir, Turkey (Oct 2019). Opening Keynote 'Enhancing Global Health Through Collaborative Research', also (2nd presentation) 'Advances for the Control of the Zoonotic Disease Brucellosis'.

John McGiven, Using synthetic oligosaccharide conjugate antigens for the detection of antibodies to *Brucella* O-polysaccharide (OPS). Annual Meeting of EU National Reference Laboratories for Brucellosis (ANSES, Maisons Alfort, Paris, France), 19th – 20th Sept. 2019.

c) National conferences: 2

Local presentations to external internationals.

Presentation to visiting delegation from Kazakhstan 'Brucella at APHA'

Presentations to visitors from Pendik (Turkey NRL for Brucellosis) – 1st Presentation 'History of Brucellosis Control in GB from 1905 to Present Day', 2nd Presentation 'Novel Serodiagnostic Methods for Brucellosis'.

d) Other:

(Provide website address or link to appropriate information) 1

Curation of Brucella multilocus sequencing international database.  
<https://pubmlst.org/brucella/>

**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: 1
- b) Seminars: 0
- c) Hands-on training courses: 5
- d) Internships (>1 month): 0

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	10
c	Turkey	4
c	Kenya	6
c	Rwanda	1
c	Senegal	1
c	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?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO9001:2015	ISO9001-2015_Certificate.pdf
ISO17025	17025 certificate.pdf

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 ELISA	UKAS
Phenotypic Characterisation (Biotyping)	UKAS
Evaluation of media	UKAS
Real time PCR	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?

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	FLI, ANSES, 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	38	<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
VETQAS PT0016 B. abortus serum ELISA	32	<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
VETQAS PT0018 B. abortus milk ELISA	17	<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
VETQAS PT0019 B. abortus - milk ring test	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
VETQAS PT0020 Rose Bengal Test	85	<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
VETQAS PT0025 B. abortus - stain & ID	12	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
VETQAS PT187 Brucella PCR	20	<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

**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:

