

# WOAH Reference Laboratory Reports Activities 2025

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## LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Brucellosis (Brucella abortus, Brucella melitensis)
*Address of laboratory:	Department of Brucellosis Research (WOAH Reference Laboratory of Brucellosis). Animal Health Research Institute (AHRI). 7th Nadi Al-Said street Dokki, Giza. Egypt. PO Box: 12618
*Tel:	+201 222.28.14.76
*E-mail address:	merhamdy@ahri.gov.eg. merhamdy@hotmail.com
Website:	www.ahri.gov.eg
*Name (including Title) of Head of Laboratory (Responsible Official):	Prof. Dr Samah Eid, Director of AHRI, ARC, Egypt
*Name (including Title and Position) of WOAH Reference Expert:	Prof. Dr Mahmoud Essam Rashad Hamdy- Cheif Researcher, WOAH Expert of Brucellosis - Department of Brucellosis - AHRI - Egypt.
*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

Diagnostic Test	Indicated in WOAH Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
<b>Indirect diagnostic tests</b>			
RBT	Yes	7711	0
BABAT	Yes	7711	0
CFT	Yes	1131	0
i-ELISA	Yes	606	0
c-ELISA	Yes	430	0
MRT	Yes	181	0
SAT Micro-plate	Yes	765	0
<b>Direct diagnostic tests</b>			
Isolation & identification of Brucella organisms	Yes	302	0
PCR for genus Identification	Yes	223	0
Multiplex AMOS PCR	Yes	139	0
Bruce-ladder PCR	Yes	89	0

## TOR2: REFERENCE MATERIAL

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2. Did your laboratory produce or supply imported standard reference reagents officially recognised by WOA?H?

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOA?H Members?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOA?H Member Countries	Country of recipients
complement for CFT	Complement Fixation Test (CFT)	Produced by DBR-WOAH Ref Lab for Brucellosis AHRI	35 ml	0	2	EGYPT,
Hemolysin	Complement Fixation Test (CFT)	Produced by - DBR-WOAH Ref Lab for Brucellosis AHRI	30 ml	0	2	EGYPT,
Standard Positive immune serum for Brucella canis	for plate test and tube test (MET) of B. canis	Produced By - DBR-WOAH Ref Lab for Brucellosis AHRI	20 ml	0	1	EGYPT,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA?H Members?

## TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

Yes

7. Did your laboratory validate diagnostic methods according to WOA?H Standards for the designated pathogen or disease?

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
Designing of new PCR (primer) for Direct detection of Brucella canis by PCR and Validation of the New PCR according to WOA?H Standards	The paper under publication
Development and evaluation of a novel lateral flow immunoassay for rapid diagnosis of brucellosis across different animal species	Scientific Reports   (2025) 15:24149   <a href="https://doi.org/10.1038/s41598-025-08741-5">https://doi.org/10.1038/s41598-025-08741-5</a>

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

9. Did your laboratory validate vaccines according to WOA?H Standards for the designated pathogen or disease?

## TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOA?H Members?

No

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOA?H Member?

Yes

Name of the WOA?H Member Country receiving a technical consultancy	Purpose	How the advice was provided
KUWAIT	Control of Bovine Brucellosis using RB51 vaccine in Dairy cattle in Kuwait.	Technical visit to Kuwait
GERMANY	Sharing in the NATO workshop ((Science for Peace and Security SPS programme)) as a speaker. The workshop held in FLL, Jena, Germany September 16 - 19. The Title of the Presentation is ((Brucellosis: public health and control in Nile Valley)).	Attending a Workshop in Germany for 3 days. The Title of the Presentation is ((Brucellosis: public health and control in the Nile Valley)).
LEBANON	Brucellosis in Lebanon	Webinar online presentation in 15 August 2025

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TURKEY	Brucellosis in the Middle East	Scientific meeting in Istanbul on the 29th of July to 2nd of October 2025
SAUDI ARABIA	Brucellosis in sheep in KSA.	Technical visit to Riyadh - KSA on the 29th of July to 2nd of October 2025

## TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOA Members other than the own?

No

13. In exercising your activities, have you identified any regulatory research needs\* relevant for WOA?

Yes

### Research need : 1

**Please type the Research need:** Standard Diagnostic tests and control measures on Brucellosis in camels

**Relevance for WOA:** Disease Control, Standard Setting,

**Relevance for the Code or Manual:** Manual,

**Field:** Epidemiology and Surveillance, Diagnostics, Vaccines, Therapeutics,

**Animal Category:** Terrestrial,

**Disease:**

Brucellosis (Brucella abortus)

Brucellosis (Brucella abortus, Brucella canis, Brucella melitensis)

Brucellosis (Brucella abortus, Brucella melitensis)

Brucellosis (Brucella abortus, Brucella melitensis, Brucella suis)

Brucellosis (Brucella melitensis)

Brucellosis (Brucella suis)

**Kind of disease (Zoonosis, Transboundary diseases):** Zoonosis,

**If any, please specify relevance for Codes or Manual, chapter and title**

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

**Answer:** New Chapter for Brucellosis in Camels

**Notes:**

**Answer:** Camels are pivotal animal in the Middle East countries as they resist harsh climatic changes and survive under tough environmental conditions with scarce of food and water; however, they produce high-quality milk and a good source of red meat. However, this species have high incidence of brucellosis in many African and Middle East countries, with the lack of standard diagnostic tests and lacks of standard vaccination program and control measures.

## TOR6: EPIZOOLOGICAL DATA

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

Yes

If the answer is yes, please provide details of the data collected:

National surveillance program is applied for testing Cattle, Buffaloes, sheep and Goats. The Obtained Data were analysed to evaluate the control Strategy of Brucellosis in Egypt.

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:

The Ministry of Agricultural and Land Reclamation in Egypt has a national strategy for control of Brucellosis in Farm animals. The General Organisation of Veterinary Services (GOVS) and Reference Lab for Brucellosis in Animal Health Research Institute (AHRI) are responsible for operation of this strategy. The GOVS are responsible for collecting samples from different animal species all over the country and the AHRI (WOAH Ref Lab for Brucellosis) is responsible for confirming the serological results of infected animals and Isolation and identification of the causative agent of Brucellosis. The Obtain Data were used to set epidemiological map for

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Brucellosis in Egypt and used for the follow up of control measures. All infected farms were notified to the Public Health Authorities and all human brucellosis cases were notified to the Preventive medicine Department of the GOVS based on One Health Strategic Plan of Egypt.

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:

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1. *Menshawy AMS, Vicente AF, Hegazy YM, Djokic V, Hamdy MER, Freddi L, Elbauomy EM, Sayour AE, Ponsart C, Abdel-Hamid NH. Animal Brucellosis in Egypt: Review on Evolution, Epidemiological Situation, Prevalent Brucella Strains, Genetic Diversity, and Assessment of Implemented National Control Measures. Microorganisms. 2025 Jan 15; 13(1): 170. doi: 10.3390/microorganisms13010170. PMID: 39858938; PMCID: PMC11767844.*
2. *Ahmed Thabet, Ahmed Orabi, Nour H. Abdel-Hamid, Lamia Ali El-Ebeedy, Mona Kadry and M. E. Hashad (2025). Brucellosis in dogs: First isolation and initial assessment of genetic relatedness of Brucella 1 canis from dogs in Egypt. BMC, Microbiology 1- 16. Under publication*
3. *Dalia Agamy, Mahmoud Hashad, Mahmoud E. R. Hamdy, and Nour H. Abdel-Hamid. (2025): Validation and Cost-effectiveness of an in-house Complement Fixation Test Using locally prepared biological components Compared with a Commercial CFT for the Diagnosis of Bovine Brucellosis. VMJ-G, vol. 71: 112 – 125. <https://doi.org/10.3390/microorganisms13010170> Copyright:*
4. *Mariam Bedir, Sherif Marouf, Rafik Hamed Sayed, Mohamed El-Diasty, Heba M. Hassan, Momtaz A. Shahien, Samah Eid, Hassan Aboul-Ella & Jakeen Eljakee. (2025). Development and evaluation of a novel lateral flow immunoassay for rapid diagnosis of brucellosis across different animal species. Scientific Reports | (2025) 15:24149 | <https://doi.org/10.1038/s41598-025-08741-5>*
5. *Atef Oreiby ,Hazim O. Khalifa ,Mohamed A. A. Abdelhamid ,Mohamed Borham , Ayman S. Seada , Ragab M. Fereig , Robert Barigye ,Gobena Ameni ,Arve Lee Willingham ,and Yamen Hegazy. (2025): A Comprehensive Meta-Analysis on Antimicrobial Resistance Patterns of the Two Major Brucella species in Mediterranean Basin Countries. Transboundary and Emerging Diseases, Volume 2025, Article ID 2502968, 25 pages <https://doi.org/10.1155/tbed/2502968>*

b) International conferences:

2

- *Presentation: ((Brucellosis: Public Health and Control in Nile Valley))  
Date: 16-19 September 2025 - Location Institute of Bacterial infections and Zoonoses (IBIZ) in Jena, FLI, Germany, Through NATO workshop ((Science in peace and security)).*
- *International One Health Forum 3-4 December 2025; National Research Center (NRC) presentation by Expert Mahmoud ER Hamdy title: "One Health Approach for Brucellosis – Airborne and Foodborne routes of infection"*

c) National conferences:

1

*Attending the World Veterinary Day Egypt 2025 in the New Capital. and awarded a certificate of appreciation.*

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 WOA Members?

Yes

a) Technical visit : 3

b) Seminars : 1

c) Hands-on training courses: 2

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
C	CHINA (PEOPLE'S REP. OF)	24

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C	YEMEN	6
A	KUWAIT	4
A	TURKEY	3
A	SAUDI ARABIA	3
B	LEBANON	22

## TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO/IEC 17025-2017	ISO. IEC 17025 .jpg	ISO. IEC 17025 .jpg
ISO:9001	ISO 9001 Certificate.jpg	ISO 9001 Certificate.jpg

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
RBT	Egyptian Accreditation Council (EGAC) that accredited by international Accreditation Body ilac-MRA
BAPA	Egyptian Accreditation Council (EGAC) that accredited by international Accreditation Body ilac-MRA
CFT	Egyptian Accreditation Council (EGAC) that accredited by international Accreditation Body ilac-MRA
i-ELISA	Egyptian Accreditation Council (EGAC) that accredited by international Accreditation Body ilac-MRA
c-ELISA	Egyptian Accreditation Council (EGAC) that accredited by international Accreditation Body ilac-MRA
MRT	Egyptian Accreditation Council (EGAC) that accredited by international Accreditation Body ilac-MRA
Identification of Brucella abortus by Slide Staining	Egyptian Accreditation Council (EGAC) that accredited by international Accreditation Body ilac-MRA
SAT by Micro-plate and tube	Egyptian Accreditation Council (EGAC) that accredited by international Accreditation Body ilac-MRA

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

Yes

My Lab has a Biorisk Management System that approved by AHRI based on the Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter: 1.1.4. Biosafety and biosecurity; Standard for managing biological risk in the veterinary laboratory and animal facilities. And comply with ISO 35001:2019; WHO Laboratory Biosafety Manual (4th ed., 2020); BMBL (6th ed., 2020).

## TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAHP?

No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAHP?

No

## TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

23. Did your laboratory exchange information with other WOAHP Reference Laboratories designated for the same pathogen or disease?

Yes

24. Are you a member of a network of WOAHP Reference Laboratories designated for the same pathogen?

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Not applicable (only WOA Reference Laboratory designated for the disease)

25. Did you organise or participate in inter-laboratory proficiency tests with WOA Reference Laboratories designated for the same pathogen during the past 2 years?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOA Ref. Labs/ organising WOA Ref Lab
Inter-lab-comparison	Participant	14	VetQas, UK
Inter-lab-comparison	Participant	3	FLI, Germany
Inter-lab-comparison	Participant	4	Ansess France

26. Did your laboratory collaborate with other WOA 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 WOA Reference Laboratories
Brucella suis biovar 2 isolated from pigs in Egypt for the first time, and the first report of this strain to be isolated outside the European continent.	Complete bacteriological, PCR identification and Gene sequencing of the Brucella suis biovar 2 isolated from pigs in Egypt for the first time and the first report of this strain to be isolated or reported outside the European continent.	WOAH/EU& National Reference Laboratory for Animal Brucellosis, ANSES/Paris, France.
Animal Brucellosis in Egypt: Review on Evolution, Epidemiological Situation, Prevalent Brucella Strains, Genetic Diversity, and Assessment of Implemented National Control Measures	Surveillance and prevalence of Animal Brucellosis in Egypt: Review on Evolution, Epidemiological Situation, Prevalent Brucella Strains, Genetic Diversity, and Assessment of Implemented National Control Measures	WOAH/EU& National Reference Laboratory for Animal Brucellosis, ANSES/Paris, France.

## TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons <sup>1</sup>	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Proficiency test with Accredited lab VetQas UK for External Quality assurance as recommended by the regulations of ISO 17025	Participant	12	ELISA	UNITED KINGDOM,
Proficiency test with Accredited lab VetQas UK for External Quality assurance as recommended by the regulations of ISO 17025	Participant	11	CFT	UNITED KINGDOM,
Proficiency test with Accredited lab VetQas UK for External Quality assurance as recommended by the regulations of ISO 17025	Participant	9	SAT	UNITED KINGDOM,
Proficiency test with Accredited lab VetQas UK for External Quality assurance as recommended by the regulations of ISO 17025	Participant	6	MRT	UNITED KINGDOM,
Proficiency test with Accredited lab VetQas UK for External Quality assurance as recommended by the regulations of ISO 17025	Participant	4	Identification of brucella abortus	UNITED KINGDOM,
Proficiency test with Accredited lab in Egypt for External Quality assurance as recommended by the regulations of ISO 17025	Participant	2	PCR	EGYPT,

## TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOAHP?

No

29. Additional comments regarding your report:

Yes

*1- My Institute (AHRI) has just accredited for the ISO 17043 as proficiency testing provider. Our WOAHP Reference Lab for Brucellosis in AHRI is planning to start to apply and present PT services to other WOAHP member countries in the next year.*

*2- I tried to join to the France web for Brucellosis of the WOAHP Reference lab web net-site for Brucellosis organised by ANSES France. But, I was informed that this Web-site is only for the WOAHP Reference Lab for Brucellosis in European countries.*