WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 1 février 2023 13:03

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Nagana et Trypanosomose (transmise par tsé-tsé)
Address of laboratory:	CIRAD (UMR InterTRyp) Campus international de Baillarguet TA A-17 / G 34398 Montpellier Cedex 5 FRANCE
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Website:	https://umr-intertryp.cirad.fr/
Name (including Title) of Head of Laboratory (Responsible Official):	Thierry Lefrançois, Directeur du département CIRAD-Bios
Name (including Title and Position) of WOAH Reference Expert:	Marc Desquesnes, DVM, PhD, HDR, chercheur, coordonnateur de projets de recherche
Which of the following defines your laboratory? Check all that apply:	EPIC

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	
Indirect diagnostic tests		Nationally	Internationally
ELISA T. vivax	OUI	0	104
ELISA T. brucei	OUI	0	104

ELISA T. congolense	OUI	0	104
ELISA T. evansi	OUI	0	32
CATT T. evansi	OUI	0	27
PCR T. vivax TVW	OUI	0	27
PCR Trypanozoon TBR	OUI	0	754
PCR T. congolense (TCS, TCK, TCF)	OUI	0	27
PCR T. evansi	OUI	0	0
PCR autres Trypanosoma spp	NON	0	40
Direct diagnostic tests		Nationally	Internationally
Examen frottis Giemsa	OUI	0	24
Examen direct sang frais	OUI	0	2
HCT (test de Woo)	OUI	0	723
culture sur rongeurs	OUI	0	24
Séparation DE52	OUI	3	3
cultures in vitro	NON	4	0
Trypanolyse	OUI	0	748

TOR2: REFERENCE MATERIAL

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

No

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

Yes

TYPE OF REAGENT AVAILABLE	RELATED DIAGNOSTIC TEST	PRODUCED/ PROVIDE	AMOUNT SUPPLIED NATIONALLY (ML, MG)	AMOUNT SUPPLIED INTERNATIONALLY (ML, MG)	NO. OF RECIPIENT WOAH MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
T. vivax	ELISA	Antigène	0	3,35 mg	9	Africa
T. brucei brucei	ELISA	Antigène	0	3,45mg	8	Africa
T. congolense	ELISA	Antigène	0	3,45mg	8	Africa
T. evansi	ELISA	Antigène	0	3,50mg	6	Africa

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOAH Members?

Not applicable

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 WOAH Standards for the designated pathogen or disease?

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
ELISA indirect trypanosome chez les bovins et les dromadaires avec des réactifs lyophilisés (antigènes et sérums de référence)	Bossard, G., Millogo, L., Thevenon, S., Vitouley, H., Bengaly, Z. & Desquesnes, M. No more cold-chain failures, using dehydrated reagents in ELISA antibody-detection against animal trypanosomes of African origin. Vet Parasitol. 2021; 299: 109568. Bossard, G., Millogo, L., Thevenon, S., Vitouley, H., Bengaly, Z. & Desquesnes, M. Corrigendum to "No more cold-chain failures, using dehydrated reagents in ELISA antibody-detection against animal trypanosomes of African origin" [Vet. Parasitol. 299 (2021) 109568]. Vet Parasitol. 2022; 303: 109680. Publication en préparation pour Dromadaires

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

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

NAME OF WOAH MEMBER COUNTRY SEEKING ASSISTANCE	DATE	WHICH DIAGNOSTIC TEST USED	NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT	NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES
BURKINA FASO		Parasitologie, sérologie et PCR		748
ZIMBABWE	0002-02-20	sérologie	32	

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

Yes

NAME OF THE WOAH MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
UNITED STATES OF AMERICA	Managment of surra outbreak in livestock appui à l'Uruguay	visio conference et emails
INDONESIA	Managment of surra outbreak in horses of the Sumba Island	emails
AFGHANISTAN	Management of dourine outbreak in Iran	emails
ZIMBABWE	Parasitological, serological and molecular diagnosis of AAT in livestock	visite technique et cours de formation

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

Title of the study	Duration	PURPOSE OF THE STUDY	PARTNERS (INSTITUTIONS)	WOAH MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY
Evaluation/Validation de nouveaux kits ELISA Trypanosomes avec des réactifs lyophilisés	18 mois	Evaluation/Validation des nouveaux kits en comparaison au ELISA de référence	ISRA	SENEGAL
Evaluation/Validation de nouveaux kits ELISA Trypanosomes avec des réactifs lyophilisés	18 mois	Evaluation/Validation des nouveaux kits en comparaison au ELISA de référence	CIRDES	BURKINA FASO
Evaluation/Validation de nouveaux kits ELISA Trypanosomes avec des réactifs lyophilisés	18 mois	Evaluation/Validation des nouveaux kits en comparaison au ELISA de référence	NICETT/AHI	ETHIOPIA
Evaluation/Validation de nouveaux kits ELISA Trypanosomes avec des réactifs lyophilisés	18 mois	Evaluation/Validation des nouveaux kits en comparaison au ELISA de référence	ARC	SOUTH AFRICA
Evaluation/Validation de nouveaux kits ELISA Trypanosomes avec des réactifs lyophilisés	18 mois	Evaluation/Validation des nouveaux kits en comparaison au ELISA de référence	ULPGC	SPAIN
Evaluation/Validation de nouveaux kits ELISA Trypanosomes avec des réactifs lyophilisés	18 mois	Evaluation/Validation des nouveaux kits en comparaison au ELISA de référence	UEM	MOZAMBIQUE

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:
présence d'infections à T. brucei brucei au Burkina Faso

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:

épidémiologie moléculaire de la trypanosomose Animale au Burkina faso;

Atlas de distribution de la trypanosoose animale au Burkina Faso

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:

11

1. Bossard, G., Millogo, L., Thevenon, S., Vitouley, H., Bengaly, Z. & Desquesnes, M. No more cold-chain failures, using dehydrated reagents in ELISA antibody-detection against animal trypanosomes of African origin. Vet Parasitol. 2021; 299: 109568.

2. Bossard, G., Millogo, L., Thevenon, S., Vitouley, H., Bengaly, Z. & Desquesnes, M. Corrigendum to "No more cold-chain failures, using dehydrated reagents in ELISA antibody-detection against animal trypanosomes of African origin" [Vet. Parasitol. 299 (2021) 109568]. Vet Parasitol. 2022; 303: 109680.

3. Desquesnes, M., Gonzatti, M., Sazmand, A., Thevenon, S., Bossard, G., Boulange, A., et al. A review on the diagnosis of animal trypanosomoses. Parasit Vectors. 2022; 15: 64. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8858479/

4. Desquesnes, M., Sazmand, A., Gonzatti, M., Boulange, A., Bossard, G., Thevenon, S., et al. Diagnosis of animal trypanosomoses: proper use of current tools and future prospects. Parasit Vectors. 2022; 15: 235. https://agritrop.cirad.fr/601329/1/Desquesnes%20et%20al%202022%20REVIEW%20II.pdf

5. Diall, O., Desquesnes, M., Faye, B., Dia, M. L., Jacquiet, P., Sazmand, A., et al. Development of a control strategy toward eliminatrion of Trypanosoma evansi infection (Surra) in camels in Africa. Acta Trop. 2022: 106583. https://pubmed.ncbi.nlm.nih.gov/35792154/

6. Kamyingkird, K., Chalermwong, P., Inpankaew, T., Ngasaman, R., Tattiyapong, M., Tiwananthagorn, S., et al. Isolation and in vitro cultivation of Trypanosoma evansi Thai strains. Exp Parasitol. 2022; 239: 108289.

7. Sazmand, A., Desquesnes, M. & Otranto, D. Trypanosoma evansi. Trends Parasitol. 2022; 38: 489-490. https://www.cell.com/trends/parasitology/fulltext/S1471-4922(22)00001-0

8. Marc Desquesnes, Kornkanok Thaisungnoen, Piangjai Chalermwong, Adèle Nevot, Clément Fossaert, Antoine Lucas, Sathaporn Onju, Phoompong Boonsaen and Sathaporn Jittaplapong (2022). The use of « tail-pedometers » to evaluate the impact of dipterans in feeder cattle. Insects 13(7):616. doi: 10.3390/insects13070616. https://pubmed.ncbi.nlm.nih.gov/35886792/

9. Hounyèmè RE, Kaboré J, Gimonneau G, Somda MB, Salou E, Missihoun AA, Bengaly Z, Jamonneau V, Boulangé A. Molecular epidemiology of Animal African Trypanosomosis in southwest Burkina Faso. PLOS Neglected Tropical Diseases. 2022. 16(8): e0010106. doi:10.1371/journal.pntd.0010106

10. Ilboudo K, Hounyeme RE, Kabore J, Boulangé A, Gimonneau G, Salou E, Belem AGM, Lejon V, Compaoré CFA, Bucheton B, et al.. Experimental evidence that immune trypanolysis using the LiTat 1.3 and LiTat 1.5 variant antigen types is not specific to Trypanosoma brucei gambiense in pigs. Parasite. 2022: 29. doi:10.1051/parasite/2022063. https://doi.org/10.1051/parasite/2022063.

11. Percoma L, Rayaissé JB, Gimonneau G, Bengaly Z, Pooda SH, Pagabeleguem S, Ganaba R, Sow A, Argilés R, Bouyer J, et al. An atlas to support the progressive control of tsetse-transmitted animal trypanosomosis in Burkina Faso. Parasites & Vectors. 2022 15(1):72. doi:10.1186/s13071-021-05131-4

b) International conferences:

2

1. Desquesnes M (CIRAD) 2022; Atypical human infections by animal trypanosomes: an obligatory one health approach. The 1st Indonesia – France International Scientific Meeting One Health Approach in Vector Borne Diseases; IMERI Building Jakarta, December 2nd – 3rd 2022.

2. Barreaux A. Mathematical methods for estimating the probability of/demonstrating tsetse elimination , Indicators of vector control coverage in the elimination of gambiense human African trypanosomiasis meeting, FAO, Rome, Italy, 14-15 December 2022.

c) National conferences:

1

1. Desquesnes, M., Solano, P., Gimonneau, G., Jamonneau, V., Bart, J.-M., Bucheton, B., et al. Les trypanosomoses humaines et animales africaines : une approche « One Health » par excellence [Human and an imal African trypanosomses : an obvious « one health" approach]. Bull. Acad. Vet. France 2022.

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 WOAH Members?

Yes

a) Technical visit : 1

b) Seminars : 0

c) Hands-on training courses: 4

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) Conseils pour le contrôle des mouches piqueuses dans le « N'Zi river lodge » (un parc naturel semi-public); 10 novembre 2022	Côte d'Ivoire	2
C) Atelier de formation sur « les vecteurs mécaniques des trypanosomes » IPR, Bouaké	Côte d'Ivoire	18
C) Trapping and identification of hematophagous flies, and, comparison of attracting devices; 16-20 mai 2022	Espagne (Canaries)	5
C) Atelier de formation sur « les vecteurs mécaniques des trypanosomes »; IPR Bouaké, CI	Tchad	2
D) Stage sur le piégeage des mouches hématophages, vecteurs mécaniques	France	1
C) Atelier de formation sC° Atelier de formation sur le diagnotique des trypanosomoses	Zimbabwe	5

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
Le système de gestion de la qualité mis en place est très proche des normes ISO 17025 mais adapté aux spécificités des trypanosomes ; la description détaillée des mesures a été adressée à l'OIE en septembre 2016, constitué de la « Procédure pour le traitement de la demande et des échantillons pour le diagnostic de la trypanosomose animale dans le cadre du laboratoire de référence de l'OIE sur les trypanosomoses animales d'origine africaine » (64 pages) et du « Recueil des protocoles standardisés des techniques de diagnostic des trypanosomoses animales d'origine africaine », un document généré dans le cadre du jumelage CIRAD-CIRDES/ OIE (105 pages, disponible en ligne sur le site de la WOAH) ; en outre il s'adosse sur l'accréditation du CIRAD pour la sérologie (ISO17025 COFRAC) et sur celle du laboratoire jumeau, le CIRDES pour le génotypage des glossines (ISO 17025 TUNAC); ces éléments ont été accueillis favorablement par la commission des standards biologiques de l'OIE en 2017 et sont donc considérés comme un système équivalent à l'ISO17025.	Certification "sérologie" et Equivalence de certification (voir ci-dessous)	

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Diagnostic Sérologique	COFRAC/CIRAD

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

Yes

Biorisk management system is included in our laboratories and animal facility approvals: Laboratory approval (level 2) registered as L2-0243 Laboratory approval (level 3) registered as L3-0244 Animal facility approval (level 2) registered as A2-0242 L'ouverture et le traitement des échantillons provenant d'Afrique se fait en laboratoire P3/CIRAD

TOR9: SCIENTIFIC MEETINGS

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

No

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

No

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

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

Not applicable (only WOAH Reference Laboratory designated for the disease

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

Not applicable (Only WOAH Reference Laboratory designated for the disease)

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen?

Not applicable (Only WOAH Reference Laboratory designated for the disease)

26. Did your laboratory collaborate with other WOAH Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

Not applicable (Only WOAH Reference Laboratory designated for the disease)

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

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

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOAH Member Countries
Evaluation et validation ELISA trypanosome avec des réactifs déshydratés (voir Tor5, point 12)	organisateur	6	Africa Europe

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

Dans le cadre du rapprochement entre les instituts, le présent rapport a été préparé conjointement par le CIRAD à Montpellier et le CIRDES, Bobo-Dioulasso, Burkina Faso.

Le recueil des méthodes de diagnostic des trypanosomes agréé par l'OMSA a été publié en français et en anglais pour être diffusé auprès des laboratoires partenaires et/ou demandeurs; cet ouvrage est disponible sur le site web de l'OMSA/WOAH (formerly OIE): https://www.woah.org/app/uploads/2021/06/compendiumstandarddiagnosticprotocolsanimaltrypansomosesafricanorigin-en.pdf

https://www.woah.org/fr/document/recueil-des-protocoles-de-diagnostic-du-laboratoire-de-reference-de-loie-sur-les-trypanosomoses-

animales-dorigine-africaine/

Une mise à jour de ces documents pourra être envisagée en 2024