World Organisation for Animal Health

Nick Van Reet - - BELGIUM

WOAH Reference Laboratory Reports Activities 2024

This report has been submitted: 5 février 2025 15:42

LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	Surra (Trypanosoma evansi)
***Address of laboratory:**	Nationalestraat 155, 2000 Antwerpen, BELGIUM
***Tel:**	+32-3 247.63.71
***E-mail address:**	nvanreet@itg.be
Website:	www.itg.be
***Name (including Title) of Head of Laboratory (Responsible Official):**	Dr. Vet. Rombouts Caroline
***Name (including Title and Position) of WOAH Reference Expert:**	Dr. Van Reet Nick
***Which of the following defines your laboratory? Check all that apply:**	Research agency

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
CATT / T. evansi	Yes	31	580
Immune trypanolysis	Yes	0	186
ELISA / water soluble extract	Yes	28	254
ELISA / RoTat 1.2 VSG	Yes	28	254
AsurDx™ T. evansi Antibody Test	No	0	

Kit			158
Direct diagnostic tests		Nationally	Internationally
Blood smear Giemsa	Yes	3	267
TBR-PCR	Yes	0	24

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
CATT / T. evansi	Surra antibody detection	produced / 107.898 tests	0	supplied/ 94.75 tests or 379 test kits	25	ARGENTINA, AUSTRALIA, CHINA (PEOPLE'S REP. OF), CZECH REPUBLIC, EGYPT, FRANCE, GERMANY, HONG KONG, IRELAND, ITALY, KOREA (REP. OF), KUWAIT, MOROCCO, NIGERIA, PHILIPPINES, PORTUGAL, SAUDI ARABIA, SPAIN, THAILAND, THE NETHERLANDS, TUNISIA, UNITED ARAB EMIRATES, UNITED KINGDOM, URUGUAY,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

No

TOR3: NEW PROCEDURES

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

Yes

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Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
Trypanozoon-RT-qPCR	Description: A multiplexed RT-qPCR method that targets the Trypanosoma brucei repeat (TBR) sequence alongside detection of the 18S rRNA, enhancing specificity and sensitivity for Trypanosoma species identification. References: The method and its validation are described in a publication currently in preparation. Further details will be available upon its release.
ELISA / whole soluble antigen	Description: This ELISA method detects antibodies against whole soluble antigens of Trypanosoma. Recent modifications include the integration of commercial buffers (apDia) and a novel substrate, improving the assay's performance over the previously used ABTS substrate. References: Additional information on the methodology and validation will be provided in upcoming publications and detailed documentation on our website.
ELISA / RoTat 1.2 VSG	Description: An ELISA method specifically detecting antibodies against the T. evansi RoTat 1.2 VSG, used to differentiate infections by surra from dourine and nagana. References: Modifications and validations of this method, including the use of commercial buffers (apDia) and a novel substrate, will be detailed in forthcoming publications and on our website.

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

No

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
ARGENTINA	2024-07-17	CATT / T. evansi, Immune Trypanolysis, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG, AsurDx T. evansi antibody test	0	158
BELGIUM	2024-02-01	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	25	0
BELGIUM	2024-05-03	CATT / T. evansi, Blood smear Giemsa	1	0

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BELGIUM	2024-03-04	CATT / T. evansi, Blood smear Giemsa	1	0
BELGIUM	2024-03-07	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	1	0
BELGIUM	2024-02-26	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	1	0
BELGIUM	2024-02-27	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	1	0
BELGIUM	2024-05-27	CATT / T. evansi, Blood smear Giemsa	1	0
BERMUDA	2024-09-12	CATT / T. evansi, Blood smear Giemsa	1	0
BRITISH VIRGIN (ISLANDS)	2024-05-06	CATT / T. evansi, Blood smear Giemsa	1	0
CANADA	2024-02-02	CATT / T. evansi	1	0
CANADA	2024-05-06	CATT / T. evansi, Blood smear Giemsa	1	0
CANADA	2024-03-11	CATT / T. evansi, Blood smear Giemsa	1	0
CANADA	2024-09-12	CATT / T. evansi, Blood smear Giemsa	3	0
CANADA	2024-04-16	CATT / T. evansi, Blood smear Giemsa	2	0
CANADA	2024-08-16	CATT / T. evansi, Blood smear Giemsa	3	0
CANADA	2024-09-16	CATT / T. evansi, Blood smear Giemsa	1	0
CANADA	2024-01-19	CATT / T. evansi, Blood smear Giemsa	2	0
CANADA	2024-12-20	CATT / T. evansi, Blood smear Giemsa	1	0
CANADA	2024-06-25	CATT / T. evansi, Blood smear Giemsa	1	0
CANADA	2024-08-30	CATT / T. evansi, Blood smear Giemsa	1	0
CANADA	2024-09-30	CATT / T. evansi, Blood smear Giemsa	2	0
CANADA	2024-07-09	CATT / T. evansi, Blood smear Giemsa	1	0
GERMANY	2024-02-08	CATT / T. evansi	4	0
GERMANY	2024-07-26	CATT / T. evansi, ELISA / water soluble extract,	0	2

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		ELISA / RoTat 1.2 VSG		
THE NETHERLANDS	2024-02-02	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	0	6
THE NETHERLANDS	2024-07-02	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	0	6
THE NETHERLANDS	2024-07-02	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG / Immune Trypanolysis	0	1
THE NETHERLANDS	2024-08-06	CATT / T. evansi	1	0
THE NETHERLANDS	2024-04-08	CATT / T. evansi, Blood smear Giemsa	1	0
THE NETHERLANDS	2024-07-09	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	0	2
THE NETHERLANDS	2024-08-09	CATT / T. evansi	1	0
THE NETHERLANDS	2024-10-10	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	0	1
THE NETHERLANDS	2024-06-13	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	0	1
THE NETHERLANDS	2024-06-13	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG / Immune Trypanolysis	0	1
THE NETHERLANDS	2024-05-14	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	0	34
THE NETHERLANDS	2024-07-18	CATT / T. evansi	16	0
THE NETHERLANDS	2024-06-19	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	0	4
THE NETHERLANDS	2024-03-21	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	0	11
THE NETHERLANDS	2024-06-25	CATT / T. evansi	2	0
THE NETHERLANDS	2024-07-26	CATT / T. evansi	2	0
THE NETHERLANDS	2024-06-28	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	0	13
THE NETHERLANDS	2024-06-28	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG /	0	1

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		Immune Trypanolysis		
THE NETHERLANDS	2024-07-30	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG	0	12
THE NETHERLANDS	2024-07-31	CATT / T. evansi	1	0
SOUTH AFRICA	2024-01-05	CATT / T. evansi, Blood smear Giemsa	0	1
SWEDEN	2024-02-05	CATT / T. evansi	1	0
SWEDEN	2024-09-01	CATT / T. evansi	1	0
SWEDEN	2024-10-09	CATT / T. evansi	1	0
SWEDEN	2024-07-11	CATT / T. evansi	1	0
SWEDEN	2024-06-12	CATT / T. evansi	1	0
SWEDEN	2024-11-18	CATT / T. evansi	2	0
SWEDEN	2024-01-25	CATT / T. evansi	1	0
SWEDEN	2024-08-27	CATT / T. evansi	1	0
UNITED KINGDOM	2024-09-25	CATT / T. evansi, ELISA / water soluble extract, ELISA / RoTat 1.2 VSG / Immune Trypanolysis	0	1
UNITED STATES OF AMERICA	2024-03-01	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-02-02	CATT / T. evansi, Blood smear Giemsa	4	0
UNITED STATES OF AMERICA	2024-08-02	CATT / T. evansi, Blood smear Giemsa	10	0
UNITED STATES OF AMERICA	2024-04-03	CATT / T. evansi, Blood smear Giemsa	4	0
UNITED STATES OF AMERICA	2024-06-03	CATT / T. evansi, Blood smear Giemsa	4	0
UNITED STATES OF AMERICA	2024-10-03	CATT / T. evansi, Blood smear Giemsa	5	0
UNITED STATES OF AMERICA	2024-12-03	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-07-04	CATT / T. evansi, Blood smear Giemsa	6	0
UNITED STATES OF AMERICA	2024-10-04	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-12-04	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-01-05	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-08-05	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-02-06	CATT / T. evansi, Blood smear Giemsa	1	0

UNITED STATES OF AMERICA	2024-03-06	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-08-06	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-09-06	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-11-06	CATT / T. evansi, Blood smear Giemsa	3	0
UNITED STATES OF AMERICA	2024-11-07	CATT / T. evansi, Blood smear Giemsa	5	0
UNITED STATES OF AMERICA	2024-01-08	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-02-08	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-04-08	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-08-08	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-11-08	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-02-09	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-04-09	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-07-09	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-08-09	CATT / T. evansi, Blood smear Giemsa	4	0
UNITED STATES OF AMERICA	2024-10-09	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-12-09	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-06-10	CATT / T. evansi, Blood smear Giemsa	6	0
UNITED STATES OF AMERICA	2024-07-10	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-10-10	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-03-11	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-10-11	CATT / T. evansi, Blood smear Giemsa	6	0
UNITED STATES OF AMERICA	2024-01-12	CATT / T. evansi, Blood smear Giemsa	4	0
UNITED STATES OF		CATT / T. evansi, Blood		

AMERICA	2024-02-12	smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-03-12	CATT / T. evansi, Blood smear Giemsa	3	0
UNITED STATES OF AMERICA	2024-04-12	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-06-12	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-08-12	CATT / T. evansi, Blood smear Giemsa	3	0
UNITED STATES OF AMERICA	2024-09-12	CATT / T. evansi, Blood smear Giemsa	5	0
UNITED STATES OF AMERICA	2024-09-13	CATT / T. evansi, Blood smear Giemsa	3	0
UNITED STATES OF AMERICA	2024-11-13	CATT / T. evansi, Blood smear Giemsa	4	0
UNITED STATES OF AMERICA	2024-12-13	CATT / T. evansi, Blood smear Giemsa	4	0
UNITED STATES OF AMERICA	2024-02-14	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-10-14	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-01-15	CATT / T. evansi, Blood smear Giemsa	5	0
UNITED STATES OF AMERICA	2024-03-15	CATT / T. evansi, Blood smear Giemsa	4	0
UNITED STATES OF AMERICA	2024-07-15	CATT / T. evansi, Blood smear Giemsa	7	0
UNITED STATES OF AMERICA	2024-02-16	CATT / T. evansi, Blood smear Giemsa	7	0
UNITED STATES OF AMERICA	2024-12-16	CATT / T. evansi, Blood smear Giemsa	8	0
UNITED STATES OF AMERICA	2024-04-17	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-03-18	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-04-18	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-10-18	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-11-18	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-12-18	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-01-19	CATT / T. evansi, Blood smear Giemsa	1	0

UNITED STATES OF AMERICA	2024-06-19	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-07-19	CATT / T. evansi, Blood smear Giemsa	5	0
UNITED STATES OF AMERICA	2024-08-19	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-02-20	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-06-20	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-09-20	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-11-20	CATT / T. evansi, Blood smear Giemsa	3	0
UNITED STATES OF AMERICA	2024-02-21	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-10-21	CATT / T. evansi, Blood smear Giemsa	3	0
UNITED STATES OF AMERICA	2024-04-22	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-05-22	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-07-22	CATT / T. evansi, Blood smear Giemsa	4	0
UNITED STATES OF AMERICA	2024-10-22	CATT / T. evansi, Blood smear Giemsa	3	0
UNITED STATES OF AMERICA	2024-11-22	CATT / T. evansi, Blood smear Giemsa	8	0
UNITED STATES OF AMERICA	2024-07-23	CATT / T. evansi	1	0
UNITED STATES OF AMERICA	2024-08-23	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-04-24	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-06-24	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-10-24	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-03-25	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-11-25	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-08-26	CATT / T. evansi, Blood smear Giemsa	3	0

UNITED STATES OF AMERICA	2024-11-26	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-02-27	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-05-27	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-06-27	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-11-27	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-12-27	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-06-28	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-10-28	CATT / T. evansi, Blood smear Giemsa	5	0
UNITED STATES OF AMERICA	2024-11-28	CATT / T. evansi, Blood smear Giemsa	5	0
UNITED STATES OF AMERICA	2024-01-29	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-04-29	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-07-29	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-11-29	CATT / T. evansi, Blood smear Giemsa	1	0
UNITED STATES OF AMERICA	2024-04-30	CATT / T. evansi, Blood smear Giemsa	3	0
UNITED STATES OF AMERICA	2024-05-30	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-08-30	CATT / T. evansi, Blood smear Giemsa	3	0
UNITED STATES OF AMERICA	2024-09-30	CATT / T. evansi, Blood smear Giemsa	2	0
UNITED STATES OF AMERICA	2024-10-31	CATT / T. evansi, Blood smear Giemsa	2	0
SPAIN	2024-02-08	CATT / T. evansi, Immune trypanolysis, PCR	0	24

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
ARGENTINA	Evaluation of seropositivity in ELISA and CATT on Argentinian	Remote (Zoom, email, documents)

	horses	
FRANCE	Evaluation of seropositivity in ELISA and CATT on Argentinian horses	Remote (Zoom, email, documents)
THE NETHERLANDS	Evaluation of seropositivity in ELISA and CATT on horses tested at Wageningen University	Remote (Zoom, email)
PHILIPPINES	Potential for collaboration on PCR testing of T. evansi in animals from the Philippines	Hybrid (Email, in loco)
INDONESIA	Potential for collaboration on PCR testing of T. evansi in animals from Indonesia	Hybrid (Email, in loco)
SPAIN	Assistance for verification of elimination of surra in Spain (Islas Canarias)	Remote (Zoom, email, documents)
SOUTH AFRICA	Sharing the SOPs for ELISA / water soluble antigen and ELISA / RoTat 1.2 for implementation	Remote (Email, documents)

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
Assistance for verification of elimination of surra in Spain (Islas Canarias)	2 months	Serological testing using CATT/T. evansi and RT-qPCR on samples collected in Spain (n = 24 multispecies samples; dog, goat, sheep and bovine)	Catedrática de Universidad, Departamento de Ciencias Clínicas, Instituto Universitario de Investigaciones Biomédicas y Sanitarias, Universidad de Las Palmas de Gran Canaria	SPAIN
CATT and ELISA on horses for export to South Africa	collected during the year	Assess the concordance between CATT results of Wageningen University and evaluate the use of ELISA and TL to confirm or refute CATT seropositivity (n=93 equine samples)	Diagnostiek Parasitologie, Afdeling Diagnostiek en Crisisorganisatie, Wageningen Bioveterinary Research, Lelystad	THE NETHERLANDS
		Assess concordance of CATT and ELISA results of		

CATT and ELISA on Argentinian horses	2 months	the Clinica Equina (Argentina) and evaluate the use of ELISA and TL to confirm or refute CATT seropositivity (n=158 equine samples)	CLINICA EQUINA SRL Buenos Aires Province, Argentina	ARGENTINA FRANCE
Loss of kDNA in T. evansi and T. equiperdum after exposure to ethidium bromide.	6 months	MSc study on adaptation of T. evansi and T. equiperdum to in vitro culture to assess the loss of kinetoplast DNA after prolonged exposure to ethidium bromide	Faculty of Biomedical Sciences, University of Antwerp (Belgium) in collaboration with Prof. Achim Schnaufer, University of Edinburgh (UK)	BELGIUM UNITED KINGDOM

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

Yes

Research need : 1

Please type the Research need: Introduction: Surra, primarily caused by Trypanosoma evansi, poses significant challenges to livestock health and agricultural sustainability worldwide. The fragmented current diagnostic landscape, relying heavily on CATT/T. evansi and immune trypanolysis (TL) targeting RoTat 1.2 VSG, struggles with specificity, sensitivity, and practical application in the field. Objective: To address these challenges, there is an urgent need for a standardized ELISA format that ensures consistency and reliability across different laboratories and jurisdictions, thereby facilitating early diagnosis and improving disease surveillance. Methodology: We evaluated the AsurDx™ T. evansi Antibody Test Kit on Argentinian horses, comparing its performance to in-house developed ELISA tests for RoTat 1.2 VSG and ELISA using a water-soluble antigen, with TL serving as the reference standard. Results: Although the AsurDx™ kit demonstrated high sensitivity, its specificity was notably low, indicating the necessity for further refinement. This highlights the ongoing challenges in achieving a reliable standardized commercial ELISA for Trypanosoma detection. Discussion: The complexities of surra, along with similar diseases such as dourine (T. equiperdum) and nagana (T. b. brucei), necessitate clear differentiation due to their overlapping serological profiles but distinct transmission dynamics and clinical outcomes. Our research focuses on equines, given their economic and veterinary importance, particularly concerning surra and dourine. Proposed Solution: To broaden the diagnostic capabilities, we propose a dual ELISA strategy. This would entail a general detection phase using a universal ELISA based on water-soluble antigen, followed by a specific detection phase targeting RoTat 1.2 VSG. This approach could significantly enhance screening protocols, especially for horses intended for export. Innovation in Controls: Crucially, we have identified necessary controls (EQU3 for dourine and EQU5 for surra) that would enable this assay to effectively differentiate between dourine and surra infections. This specificity is particularly beneficial for screening horses for export purposes, ensuring that only healthy animals cross international borders. Conclusion: Developing such a universal diagnostic tool requires substantial investment in funding and validation across diverse epidemiological settings to ensure its accuracy and reliability. The potential for a dual ELISA approach, combined with targeted controls, presents a promising advancement in the fight against Trypanosoma infections, aligning with global health and trade

requirements.

Relevance for WOAH Disease Control, Standard Setting, Animal Welfare, Facilitation of international collaboration,

Relevance for the Code or Manual Manual,

Field Epidemiology and Surveillance, Diagnostics,

Animal Category Terrestrial,

Disease:

Dourine
Surra (Trypanosoma evansi)

Kind of disease (Zoonosis, Transboundary diseases) Transboundary diseases, Atypical human infection,

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: Terrestrial Manual CHAPTER 3.1.21. SURRA IN ALL SPECIES (TRYPANOSOMA EVANSI INFECTION)

Notes:

Answer: In-house Antigen Preparation: Our laboratory possesses the capability to prepare antigens in-house, ensuring that we have control over the quality and availability of critical reagents used in our assays. This autonomy in antigen production is crucial for maintaining consistent test performance and reliability. Use of Commercial Buffers: We have transitioned from using in-house buffers to commercial buffers manufactured under Good Manufacturing Practices (GMP). This switch enhances the standardization and reproducibility of our ELISA tests, aligning with international quality standards and improving the overall robustness of our diagnostic procedures. Stability Studies: Our team is actively engaged in experiments designed to freeze-dry reagents, aiming to assess and validate the stability of our diagnostic tests at various temperatures—4°C, room temperature, and 37°C. These studies are currently ongoing and are critical for determining the shelf-life and field usability of our test kits, particularly in diverse environmental conditions that are typical in field settings.

Research need : 2

Please type the Research need: Organization of an International Conference on Non-Tsetse Transmitted Animal Trypanosomes (NTTAT): Currently, there is no longer a dedicated global forum that brings together experts working on Non-Tsetse Transmitted Animal Trypanosomes (NTTAT), including Trypanosoma evansi (Surra), T. equiperdum (Dourine), and T. vivax (Nagana). The lack of structured collaboration and regular scientific exchange hinders progress in diagnostic standardization, disease surveillance, and control strategies. The organization of an international conference dedicated to NTTAT would: Foster international collaboration between WOAH Reference Laboratories, research institutions, and veterinary health authorities. Address the need for standardization of diagnostics, inter-laboratory proficiency testing, and species differentiation between T. evansi, T. equiperdum, T. vivax and T. b. brucei. Provide a platform for discussing new molecular and serological tools and their application across different host species. Encourage capacity building by engaging laboratories from endemic and non-endemic regions in training and knowledge exchange.

Relevance for WOAH Disease Control, Capacity Building, Standard Setting, Facilitation of international collaboration,

Relevance for the Code or Manual Manual,

Field Epidemiology and Surveillance, Diagnostics,

Animal Category Terrestrial,

Disease:

Dourine
Nagana (tsetse-transmitted African animal trypanosomiosis)
Surra (Trypanosoma evansi)

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

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: Terrestrial Manual – CHAPTER 3.1.21. SURRA IN ALL SPECIES (TRYPANOSOMA EVANSI INFECTION) (there is not yet an official Code for Surra)

Notes:

Answer: Current Online Resources: While there is an existing website hosted by WOAH dedicated to NTTAT (https://www.woah.org/nttat/index.html), it is important to note that this site is currently no longer updated. The lack of recent updates limits the availability of current research and developments in the field. Need for Refreshed Content: Revitalizing this website with up-to-date content and resources would be highly beneficial. This could serve as a central hub for disseminating latest research findings, sharing conference materials, and enhancing continuous professional development and collaboration among experts globally. An updated platform could significantly bolster the efforts in standardizing diagnostics, improving disease surveillance, and implementing effective control strategies across various regions.

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:

Details of the Data Collected:

Ongoing Surveillance for Export Samples:

Monitoring confirmed surra infections in export samples, primarily from Belgium, with comparisons from other countries. Ongoing analysis shows effective pre-export screening with no detected cases.
Seroprevalence Studies:

Completed studies assessing Trypanosoma evansi in equines from Argentina and Spain using CATT, ELISA, and immune trypanolysis, providing insights into regional infection rates and testing effectiveness.
Parasitological Prevalence Assessments:

PCR confirmation of T. evansi in CATT-positive samples to check serological and molecular detection correlation, conducted upon request.
Comparative Diagnostic Test Performance:

Completed assessments across multiple labs, including Wageningen University and Clínica Equina, highlighted the need for standardized diagnostic protocols due to observed inter-laboratory variability.
Preliminary Molecular Analysis of T. evansi Isolates:

Ongoing research comparing current strains with historical samples to identify epidemiological patterns and potentially influence

future surveillance and diagnostic development.

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:

Collaborative Diagnostic Studies: Findings from evaluations with Wageningen University and Clínica Equina were shared internally to enhance diagnostic practices.

ELISA Evaluations: Insights on various ELISA methods were shared with ANSES, France.

Prevalence Studies: Seroprevalence and PCR positivity data from Spain were reported internally to collaborators.

Genomic and Molecular Analysis: Contributions to publications in Nature Communications on trypanosome life cycle simplification and discussions on kDNA in akinetoplastic trypanosomes at academic levels, with efforts for broader publication.

Drug Development: Published research on novel therapeutics for trypanosomiasis in peer-reviewed journals, detailing the evaluation of treatment efficacy and potential impacts on disease management.

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:

2

Our laboratory has made significant contributions to the field through the following publications:

"Mechanisms of life cycle simplification in African trypanosomes" published in Nature Communications on December 2, 2024. This study delves into the genomic and molecular mechanisms that drive the transition to monomorphic forms in trypanosomes, influencing their transmission and epidemiology.

"Discovery and Development of an Advanced Lead for the Treatment of African Trypanosomiasis" published on December 12, 2024. This research provides a comprehensive preclinical evaluation of nucleoside analogues against African trypanosomiasis, demonstrating promising curative effects in various mouse models and elucidating the molecular pathways involved in drug efficacy. DOI: 10.1021/acsinfecdis.4c00472.

b) International conferences:

0

Currently, there is a lack of a dedicated platform for researchers working on Non-Tsetse Transmitted Animal Trypanosomes (NTTAT) to share findings and coordinate research efforts. Re-establishing a specialized assembly for NTTAT—including Trypanosoma evansi (surra), T. equiperdum (dourine), and T. brucei brucei—would be highly beneficial for fostering collaboration, harmonizing diagnostic approaches, and addressing key research gaps. However, organizing such a global meeting requires dedicated funding and coordination with the other WOAH Reference Laboratories for surra, dourine, and African trypanosomiasis. A renewed effort in this direction could greatly enhance knowledge exchange, standardization of diagnostic protocols, and strategic planning for NTTAT research and disease control.

c) National conferences:

1
Our laboratory has contributed to national conferences by presenting research on serological diagnostics for Trypanosoma brucei gambiense (human African trypanosomiasis), which shares significant methodological similarities with T. evansi diagnostics in terms of ELISA-based serological testing.

d) Other (Provide website address or link to appropriate information):

1
An MSc thesis was submitted at the University of Antwerp. Internal reports for collaborators like Wageningen University and Clínica Equina guide ongoing research but are not intended for immediate public dissemination.

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 : 0

b) Seminars : 1

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
C	PHILIPPINES	1
C	INDONESIA	1
B	UNITED KINGDOM	1
D	KENYA	1

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
EN ISO/IEC 17025:2017	PDF	147-TEST.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body

CATT / T. evansi	BELAC
Blood smear Giemsa	BELAC

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

Yes

Cultivation of T. evansi in rodents in described in the biosafety procedure: ITG BWPD-01

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?

Yes

24. Do you network (collaborate or share information) with other WOAH Reference Laboratories designated for the same pathogen?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS
WOAH Non-Tsetse Transmitted Animal Trypanosomoses Network	To create awareness on NTTAT as high impact neglected veterinary diseases To develop tools that enhance countries' capacity for surveillance of the NTTAT in view of improved disease reporting To foster collaborative research on identified topics To respond to needs for scientific evidence as expressed by endemic countries and/or organisations engaged in NTTAT control To fill gaps in knowledge on disease epidemiology, pathogenesis, drug efficacy, vaccines, modes of transmission, reservoir hosts and vector control.	4	RL for Dourine Dr. Laurent Hebert ANSES, France E-mail: Laurent.hebert@anses.fr RL for Surra Prof. Noboru Inoue National Research Center for Protozoan Diseases, Obihiro University of Agriculture and Veterinary Medicine E-mail: ircpmi@obihiro.ac.jp Dr. Keisuke Suganuma E-mail:k.suganuma@obihiro.ac.jp RL for trypanosomoses (tsetse-transmitted) Dr. Marc DESQUESNES CIRAD-IRD, FRANCE E-mail: marc.desquesnes@cirad.fr

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

No

However, we acknowledge the importance of inter-laboratory proficiency testing and appreciate the feedback received from WOAH. In response to this recommendation, we aim to seek funding and reagents to organize a proficiency test, ideally with the WOAH Reference Laboratory in Japan. However, logistical challenges, including sample import/export restrictions with Japan, make this a complex endeavor.

Alternatively, there are more feasible opportunities for collaboration with:
The WOAH Reference Laboratory in France for Dourine, which could provide a platform for comparative serological testing.
The WOAH Reference Laboratory for Tsetse-Transmitted Trypanosomes, where broader inter-laboratory assessments could be conducted.

We recognize the urgency of addressing this requirement and will work towards securing resources and partnerships to initiate a standardized inter-laboratory proficiency testing scheme in the future.

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?

Yes

Title of the project or contract	Scope	Name(s) of relevant WOAH Reference Laboratories
CATT and ELISA on Argentinian horses	Serological evaluation of T. evansi infection in Argentinian horses using CATT and ELISA (RoTat 1.2 VSG), with sample importation and initial testing facilitated by the WOAH Reference Laboratory for Dourine. The study also included further validation of alternative ELISA formats (ELISA with water-soluble extract), the AsurDx™ T. evansi Antibody Test, and immune trypanolysis as a reference test.	WOAH Reference Laboratory for Dourine (France)

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 during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Determining a laboratory's capability to conduct specific diagnostic tests.	Participant	1	CATT / T. evansi	THE NETHERLANDS,
Determining a laboratory's capability to conduct	Participant	1	CATT / T. evansi , ELISA / RoTat 1.2 VSG	ARGENTINA,

specific diagnostic tests.

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No