WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 22 juillet 2024 14:35

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Leptospirosis
Address of laboratory:	1920 Dayton Ave, Ames, IA USA 50010
Tel.:	+15153377200
E-mail address:	matthew.m.erdman@usda.gov
Website:	https://www.aphis.usda.gov/labs
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Suelee Robbe-Austerman
Name (including Title and Position) of WOAH Reference Expert:	Dr. Matthew Erdman
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	
Indirect diagnostic tests		Nationally	Internationally
N/A		0	0
Direct diagnostic tests		Nationally	Internationally
Leptospirosis Microscopic Agglutination Test		4436	122
Fluorescent Antibody Testing		6	0
Isolation		495	2
Real-Time LipL32 PCR		705	0
Whole Genome Sequencing		75	2
16S and secY PCR		19	0
Serogrouping		65	2

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

				AMOUNT SUPPLIED		

TYPE OF REAGENT AVAILABLE	RELATED DIAGNOSTIC TEST	PRODUCED/ PROVIDE	AMOUNT SUPPLIED NATIONALLY (ML, MG)	INTERNATIONALLY (ML, MG)	NO. OF RECIPIENT WOAH MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
Reference Positive Control Sera	MAT, Serogrouping	Provided	244 ml	224 ml	5	CANADA, COLOMBIA, KOREA (REP. OF), MALAYSIA, SINGAPORE,
Reference Positive Control Sera	MAT, Serogrouping	Provided	198 ml	0	1	UNITED STATES OF AMERICA,
Reference Negative Control Sera	MAT	Provided	22 ml	22 ml	3	KOREA (REP. OF), SINGAPORE, UNITED STATES OF AMERICA,
Reference Cultures	MAT	Provided	1252 ml	2530 ml	6	CANADA, COLOMBIA, KOREA (REP. OF), NEW ZEALAND, PERU, UNITED STATES OF AMERICA,
Multivalent Fluorescent Antibody (FA) Conjugate	MAT	Provided	2 ml	0	1	UNITED STATES OF AMERICA,
Leptospira Medium	MAT, FAT, ISOLATION	Provided	336,832 ml	29,160 ml	2	CANADA, UNITED STATES OF AMERICA,

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?

No

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
BELGIUM	2023-01-01	MAT	3	0
CURACAO	2023-02-01	MAT	11	0
COLOMBIA	2023-03-01	MAT	11	0
THE NETHERLANDS	2023-03-01	MAT	3	0

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

No

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

No

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

No

TOR6: EPIZOOLOGICAL DATA

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

No

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

No

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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Hamond C, LeCount K, A Springer Browne AS, Anderson T, Stuber T, Hicks J, Camp P, Fernandes LGV, van der Linden H, Goris MGA, Bayles DO, Schlater LK, Nally JE. Concurrent colonization of rodent kidneys with multiple species and serogroups of pathogenic Leptospira. Applied and environmental microbiology vol. 89,10 (2023): e0120423. doi:10.1128/aem.01204-23

Stone NE, McDonough RF, Hamond C, LeCount K, Busch JD, Dirsmith, KL, Rivera-Garcia S, Soltero F, Arnold LM. Weiner Z, Galloway RL, Schlater LK, Nally JE, Sahl JW, Wagner DM, DNA Capture and Enrichment: A Culture-Independent Approach for Characterizing the Genomic Diversity of Pathogenic Leptospira Species. Microorganisms 2023, 11, 1282.

Anderson T, Hamond C, Haluch A, Toot K, Nally JE, LeCount K, Schlater LK. Animals Exposed to Leptospira Serogroups Not Included in Bacterins in the United States and Puerto Rico. Trop Med Infect Dis. 2023 Mar 22;8(3):183. doi: 10.3390/tropicalmed8030183. PMID: 36977184; PMCID: PMC10051158.

LeCount K, Fox K, Anderson T, Bayles DO, Stuber T, Hicks J, Schlater LK, Nally JE. Isolation of Leptospira kirschneri serovar Grippotyphosa from a red panda (Ailurus fulgens) after antimicrobial therapy: Case report. Front Vet Sci. 2023 Feb 2;9:1064147. doi: 10.3389/fvets.2022.1064147. PMID: 36819120; PMCID: PMC9932277.

b) International conferences:

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Hamond C, Adam E, LeCount K, Anderson T, Camp P, Hicks J, Stuber T, Morningstar-Shaw BR, Schlater LK, Nally JE. Thoroughbred mares as reservoir hosts of Leptospira. International Symposium of the World Association of Veterinary Laboratory Diagnosticians, June 2023, Lyon, France.

Hamond C, LeCount K, Morningstar-Shaw BR, Schlater LK, Nally JE. Optimization of PCR for the detection of pathogenic Leptospira in bovine semen. International Symposium of the World Association of Veterinary Laboratory Diagnosticians, June 2023, Lyon, France.

Hamond C. Overview of Animal Leptospirosis and Diagnostics. 5th European Congress on Infectious Diseases, October 9-10, 2023, London, UK.

Hamond C. Leptospirosis: risk factors, diagnosis and control challenges. International Forum on Public Health and Health Care Management 2023, September 7-11, 2023, virtual.

c) National conferences:

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Hamond C, LeCount K, Morningstar-Shaw BR, Schlater LK, Nally JE. Optimization of PCR for the detection of pathogenic Leptospira in bovine semen. United States Animal Health Association 2023 Annual Meeting. October 12-18, 2023, National Harbor, MD.

Hamond C, Adam E, LeCount K, Anderson T, Camp P, Hicks J, Stuber T, Morningstar-Shaw BR, Schlater LK, Nally JE. Thoroughbred mares as reservoir hosts of Leptospira. 2023 American Association of Equine Practitioners Convention. December 2023, San Diego, CA.

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

0

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH Members?

No

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO 17025	N/A	
ISO 17043	N/A	

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Leptospira Microscopic Agglutination Test	A2LA
Leptospira Real-time PCR	A2LA
Leptospira Fluorescent Antibody Testing	A2LA
Leptospira Microscopic Agglutination Test Proficiency Testing	A2LA

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

Yes

We operate under campus and laboratory specific biorisk plans that comply with biosafety level 2 and 3 per the latest edition of Biosafety in Microbiological and Biomedical Laboratories (BMBL) https://www.cdc.gov/labs/BMBL.html as well as Federal Select Agent Program Federal Select Agent Program (selectagents.gov) requirements for regulated pathogens including virulent Newcastle disease virus and highly pathogenic avian influenza.

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?

No

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

No

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

No

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
Serotyping of leptospires with monoclonal antibodies	Serological typing of Leptospiral isolates	Leptospirosis Reference Center - The Netherlands

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?

No

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

Participated in multiple surveillance studies that greatly increased variety of tests and testing numbers this year. A post-doc is currently on staff that has increased testing

as well.