World Organisation for Animal Health

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WOAH Reference Laboratory Reports Activities 2025

This report has been submitted: 28 janvier 2026 22:55

LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	American foulbrood (infection of honey bees with Paenibacillus larvae)
***Address of laboratory:**	66 Ward Street, Upper Hutt 5018, NEW ZEALAND
***Tel:**	+6448945600
***E-mail address:**	Richard.Hall@mpi.govt.nz
Website:	https://www.mpi.govt.nz/science/laboratories/national-animal-health-laboratory/
***Name (including Title) of Head of Laboratory (Responsible Official):**	Dr Anastasia Chernyavtseva
***Name (including Title and Position) of WOAH Reference Expert:**	Dr Richard Hall, Principal Scientist
***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
Direct diagnostic tests		Nationally	Internationally
Microbial culture	Yes	1	0
qPCR	Yes	13	0

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?

No

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOAH 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 WOAH Standards for the designated pathogen or disease?

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
Validation of a qPCR for Paenibacillus larvae	Development and validation of a qPCR assay for Paenibacillus larvae based upon primers and probes published by Kušar et al. 2021 https://pmc.ncbi.nlm.nih.gov/articles/PMC8621733/

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

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

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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	Query about proficiency testing	Email
PHILIPPINES	Discussion about qPCR test methods for Paenibacillus larvae	Email, video conference
NEW CALEDONIA	Assistance with education extension materials for beekeepers to recognise bee pests and diseases	Email
NEW ZEALAND	Technical advice about qPCR testing for Paenibacillus larvae	Video conference
TONGA (KINGDOM OF)	Technical advice	Email
NEW ZEALAND	Education extension materials for detection of bee disease; training new beekeepers	Email, online resource
KOSOVO	Technical advice about testing for Paenibacillus larvae	Email
SOUTH AFRICA	Technical query about testing for Paenibacillus larvae	Email
AUSTRALIA	Technical advice on brood diseases	Email

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?

Yes

Research need : 1

Please type the Research need: To include a validated quantitative PCR test (real-time PCR) in the WOAH Diagnostic Manual chapter on American foulbrood. At present there is only a conventional PCR described. In addition, a qPCR test in the manual will also need a clear description of how to interpret the results, so WOAH member states and beekeepers can share an agreement about how to interpret qPCR test results from different sample types (e.g. honey, larvae, pupae, adult bees, hive debris) at different bacterial loads (e.g. high Cq result versus low Cq result).

Relevance for WOAH Disease Control, Standard Setting,

Relevance for the Code or Manual Manual,

Field Epidemiology and Surveillance, Diagnostics,

Animal Category Terrestrial,

Disease:

American foulbrood (infection of honey bees with Paenibacillus larvae)

Kind of disease (Zoonosis, 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: 9.2. Infection of honey bees with Paenibacillus larvae (American foulbrood)

Notes:

Answer:

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:

As part of the international COLOSS network (https://coloss.org/), we run an annual survey of all beekeepers in New Zealand to determine causes of colony loss; including the collection of epidemiological data as to the impact of American foulbrood on honey bee colonies. Results from the New Zealand colony loss survey are made available here: https://www.mpi.govt.nz/biosecurity/how-to-find-report-and-prevent-pests-and-diseases/bee-biosecurity/bee-colonyloss-survey/

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:

We publish a quarterly journal (Surveillance) that is open-access, which documents our biosecurity investigations and epidemiological activities, including reports on American foulbrood and other honey bee health activities; the annual report on American foulbrood prevalence in New Zealand is published in Issue 3 of 2025, found at the link here: https://www.sciquest.org.nz/browse/publications/article/176005

We publish annual reports on national honey bee colony loss data for New Zealand, including honey bee colony losses that have been attributed to American foulbrood. The report of colony losses experienced in 2024, was published in 2025 and is available in the following weblink. The 2025 colony losses caused by American foulbrood will be published in 2026. https://www.mpi.govt.nz/biosecurity/how-to-find-report-and-prevent-pests-and-diseases/bee-biosecurity/bee-colony-loss-survey/

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:

0

b) International conferences:

1

34th Conference of the Regional Commission for Asia and the Pacific, 23 September 2025, poster presentation: 'Honey bee WOAH Reference Laboratories in New Zealand, for American foulbrood and Varroa Mite'

c) National conferences:

0

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

2
https://www.mpi.govt.nz/biosecurity/how-to-find-report-and-prevent-pests-and-diseases/bee-biosecurity/bee-pests-and-diseases/

Hall R, Pragert H, Wallingford N (2025) History of honey bee importations into New Zealand. Surveillance 52(1):5–10. https://www.sciquest.org.nz/browse/publications/article/175320

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/IEC 17025 General requirements for the competence of testing and calibration laboratories	Schedule to CERTIFICATE OF ACCREDITATION: for conformance to ISO/IEC 17025 General requirements for the competence of testing and calibration	Certificate of Accreditation AHL 2025.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Microbiology 1.02 Diagnostic Tests, Veterinary (f) Microbiology - GENERAL BACTERIOLOGY Molecular Biology 1.02 Diagnostic Tests, Veterinary (f) Microbiology Analysis by Polymerase Chain Reaction (PCR): American Foul Brood (AFB) real-time PCR	International Accreditation New Zealand (IANZ) https://www.ianz.govt.nz/

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

Yes

Our laboratory has permission under Section 52 and 53 of the Biosecurity Act 1993 (New Zealand) to communicate, and propagate unwanted organisms. Paenibacillus larvae (the causative agent of American foulbrood) is officially listed as an unwanted organism in New Zealand, and our processes and procedures for handling P. larvae are in adherence with the s52/53 permission. Our laboratory operates under, and is audited to, the Australia/New Zealand Standard AS/NZS 2243.3:2002 Safety in Laboratories. Part 3: Microbiological Aspects and Containment Facilities. We have an organisational Biological Safety Committee which conducts standardised risk assessment reviews for our laboratory work.

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?

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
34th Conference of the Regional Commission for Asia and the Pacific	2024-09-22	Jakarta	Poster	Honey bee WOAH Reference Laboratories in New Zealand, for American foulbrood and Varroa Mite

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

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS
American foulbrood (infection of honey bees with Paenibacillus larvae)	Participant	3	WOAH Reference Laboratories for American Foulbrood at: ANSES (French Agency for Food, Environmental and Occupational Health & Safety) ALSO, National Reference Laboratory for Bee Diseases, Friedrich-LoefferInstitut, Germany.

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?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOAH Ref. Labs/ organising WOAH Ref Lab
Microbiological culture, qPCR	Participant	>10	WOAH Reference Laboratory for American Foulbrood at: ANSES (French Agency for Food, Environmental and Occupational Health & Safety)

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?

No

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?

No

We participated in an ILPT with a WOAH Reference Laboratory.

TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
Technical advice	WOAH Paris, France	Advice on how satellite imagery could help honey bee health

29. Additional comments regarding your report:

No