

WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 8 mai 2024 11:19

Laboratory Information

Name of disease (or topic) for which you are a designated WOAHO Reference Laboratory:	Infestation of honey bees with <i>Aethina tumida</i> (small hive beetle)
Address of laboratory:	Südufer 10
Tel.:	+49-38351 7 1246
E-mail address:	marc.schaefer@fli.de
Website:	https://www.fli.de/en/institutes/institute-of-infectology-imed/reference-laboratories/oie-andnrls-for-bee-diseases/
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. phil. nat. Marc O. Schäfer, head of the NRL for bee diseases
Name (including Title and Position) of WOAHO Reference Expert:	Dr. phil. nat. Marc O. Schäfer, head of the NRL for bee diseases
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)

No

TOR2: REFERENCE MATERIAL

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

No

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

No

4. Did your laboratory produce vaccines?

No

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

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
	5. Li D, Waite DW, Fan Q-H, George S, Semeraro L, Blackett MJ (2018) Molecular

Alternative molecular detection of small hive beetle

detection of small hive beetle *Aethina tumida* Murray (Coleoptera: Nitidulidae): DNA barcoding and development of a real-time PCR assay. *Scientific Reports* 8: 9623. doi:10.1038/s41598-018-27603-x

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

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

No

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

Title of the study	Duration	PURPOSE OF THE STUDY	PARTNERS (INSTITUTIONS)	WOAHS MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY
Control of the preimaginal stages of the hive weed <i>Aethina tumida</i> by means of variations in soil humidity and the use of entomopathogenic nematodes.	December 2023 - November 2025	The aim of this project is to study, in vitro, the influences of soil moisture variations and the action of entomopathogenic nematodes especially on pupal development	IZS ME, LT & VE; UNICZ; ENEA (IT); FLI (DE); Swiss Bee Research Centre Agroscope (CH)	GERMANY ITALY SWITZERLAND
B-GOOD - Giving beekeeping guidance by computational-assisted decision making	June 2019 - May 2023	B-GOOD has the overall goal to provide guidance to beekeepers and help them make better and more informed decisions	Universiteit Gent, Stichting Wageningen Research, BeeSources di Raffaele Dall'Olio, Pensoft Publishers, Institut National de la Recherche Agronomique, Martin- Luther-Universität Halle- Wittenberg, Universitatea de Stiinte Agricole si Medicina Veterinara Cluj Napoca, Aarhus Universitet, Universidade de Coimbra, The Nottingham Trent University, Universität Bern, Stichting BEEP, Suomen Mehiläishoitajain liitto SML ry, Uniwersytet Jagiellonski, Sciensano, SCIPROM Sari	BELGIUM BULGARIA FINLAND FRANCE ITALY POLAND PORTUGAL ROMANIA SWITZERLAND THE NETHERLANDS UNITED KINGDOM

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

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:

1

Insects, 2023: *Bridging the gap between field experiments and machine 2 learning: The EC H2020 B-GOOD project as a case study to-3 wards automated predictive health monitoring of honey bee 4 colonies*; Coby van Dooremalen, ..., Marc O. Schäfer, ... et al.

b) International conferences:

3

Apimondia, Santiago de Chile, 2023: Potential risk factors for honey bee health in Europe; Marc O. Schäfer, Severine Matthijs
International Congress on Sustainable Honeybee Keeping, Dresden, Germany, 2023: Bee diseases overview & German bee monitoring (DeBiMo); Marc O. Schäfer
Central European Section of the IUSSI, Cluj-Napoca, Romania, 2023: The diseased honey bee colony-Distribution of a brood pathogen; Sandra Ehrenberg, Lukas Rüttinger, Marc O. Schäfer, Robert Kammerer

c) National conferences:

3

Mülheimer Bienentage, Mülheim, Germany, 2023: 1. Virenanalysen von Honigbienenvölkern aus Deutschland und Europa; Marc O. Schäfer
Mülheimer Bienentage, Mülheim, Germany, 2023: 2. Der Kleine Beutenkäfer – Aktuelle Situation und Forschung; Marc O. Schäfer
AG Tagung, Potsdam, 2023: Validation of a lateral flow device for American foulbrood detection and genotype differentiation of ERIC I & ERIC II; Sandra Ehrenberg, Lukas Rüttinger, Friedrich Scholz, Marc O. Schäfer, Robert Kammerer

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

1

Member of the Advisory Board of the project "Best Practices and Innovations for A Sustainable Beekeeping- B-Thenet" funded by the Horizon Europe Program of the European Commission: HORIZON-CL6-2021-GOVERNANCE-01-28- Grant Agreement number: 101059812 for its duration (from 01/09/2022 to 31/08/2026); <https://www.bthenet.eu/>

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAAH 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)	
DIN EN ISCVIEC 17025:2018	Akkreditierungsurkunde_2022.pdf	Akkreditierungsurkunde_2022.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Identification of <i>Aethina tumida</i> (visual)	Deutsche Akkreditierungsstelle GmbH (DAkKS)
Identification of <i>Aethina tumida</i> by PCR	Deutsche Akkreditierungsstelle GmbH (DAkKS)

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

Yes

TOR9: SCIENTIFIC MEETINGS

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

No

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

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
COLOSS SHB Task Force	2023-06-14	hybrid - Starkville, USA	Speaker and Task Force co-leader	Alternative soil treatment against <i>Aethina tumida</i>
COLOSS SHB Task Force	2023-09-14	Bled, Slovenia	Task Force co-leader	Updates annual achievements

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

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAHP REF. LABS
Infestation of honey bees with <i>Aethina tumida</i> (small hive beetle)	Participant	3	FLI; ANSES

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

No

26. Did your laboratory collaborate with other WOAHP 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 WOAHP Reference Laboratories for the same pathogen?

No

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
revision of the chapter on infestation of honey bees with <i>Aethina tumida</i> (small hive beetle) of the Terrestrial Manual	email and online	see kind of consultancy

29. Additional comments regarding your report:

Yes

*I am based in the North East of Germany, where *A. tumida* is luckily not yet present.*

I am participating in the COLOSS network, where I am one of the chairs of the SHB task force (<https://coloss.org/activities/taskforces/shb/>). The COLOSS SHB task force is a network of about 100 researchers from about 30 countries and we meet at least twice a year to discuss our actions.

*I am in constant contact with the EURL about *A. tumida* and in 2023 we have decided to have yearly bilateral proficiency tests from now on, the first one took place in February 2024.*

*I am collaborating with the "ISTITUTO ZOOPROFILATTICO SPERIMENTALE DEL MEZZOGIORNO" on control of *A. tumida* in the soil.*