WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 11 juin 2024 12:30

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Salmonellosis
Address of laboratory:	Viale dell'Università, 10 Legnaro (PD) Italy
Tel.:	+39-049 8084.242
E-mail address:	aricci@izsvenezie.it
Website:	www.izsvenezie.it
Name (including Title) of Head of Laboratory (Responsible Official):	Dr Lisa Barco
Name (including Title and Position) of WOAH Reference Expert:	Dr Antonia Ricci
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
None		0	0
Direct diagnostic tests		Nationally	Internationally
Serotyping		2406	45
PCR (Salmonella confirmation)		1350	0
Geno-serotyping		671	0
MLVA		582	0
WGS		719	45
Test for live vaccines-Salmonella Enteritidis		45	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?

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
KOSOVO	2023-10-01	Salmonella confirmation (PCR), Salmonella serotyping, WGS	45	0

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
NIGERIA	Assistance in preparation of a scientific paper	Remote, email
AZERBAIJAN	Tutor in the training activity GAP Analysis on ISO/IEC 17043:2010 held within the framework of the WOAH Twinning project between Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise «G. Caporale» and National Reference Laboratory of Azerbaijan Food Safety Institute	In loco
CHAD	Assistance in real time protocols to be used for the detection of non-typhoidal Salmonella	Remote email
UNITED KINGDOM	Assistance in poultry samples testing procedures (in collaboration with the UK, Canada, Korea and Germany WOAH reference labs)	Remote 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?

Yes

Title of the study	Duration	PURPOSE OF THE STUDY	PARTNERS (INSTITUTIONS)	WOAH MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY
RIBMINS	3 years	To combine and strengthen Europe-wide research efforts on modern meat safety control systems	Several EU Institutions	SPAIN
		To develop a cutting-edge		

H-ALO	3 years	biochemical photonic-based sensor enabling the on-site detection of microbiological and chemical contaminants in a broad number of different farm-to-fork-food chains	Several EU Institutions	THE NETHERLANDS

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?

Yes

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:

The laboratory collects data about Salmonella strains isolated from samples related to veterinary sector (isolated from feed, food and animals) at national level. These data are available for surveillance purposes at national and international level. The laboratory contributed to the collection of Salmonella data for The European Union One Health 2022 Zoonoses Report (https://doi.org/10.2903/j.efsa.2023.8442).

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:

The laboratory contributed to the drafting and revision of Salmonella chapter of The European Union One Health 2022 Zoonoses Report (https://doi.org/10.2903/j.efsa.2023.8442).

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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Fagbamila I.O., Ramon E., Lettini A.A., Muhammad M., Longo A., Antonello K., Aworh M.K., Kwaga J.K.P., Abdu P.A., Umoh J.U., Kabir J.A., Ricci A., Barco L. (2023) Assessing the mechanisms of multi-drug resistant non-typhoidal Salmonella (NTS) serovars isolated from layer chicken farms in Nigeria. PLoS One 18(9):e0290754.

Marzoli F., Bertola M., Pinarelli Fazion J., Cento G., Antonelli P., Dolzan B., Barco L., Belluco S., A systematic review on the occurrence of Salmonella in farmed Tenebrio molitor and Acheta domesticus or their derived products, International Journal of Food Microbiology, Volume 410, 2024, 110464, ISSN 0168-1605, https://doi.org/10.1016/j.ijfoodmicro.2023.110464.

Napoleoni, M.; Villa, L.; Barco, L.; Lucarelli, C.; Tiengo, A.; Baggio, G.; Dionisi, A.M.; Angellotti, A.; Ferretti, E.; Ruggeri, S.; et al. Monophasic Variant of Salmonella Typhimurium 4,[5],12:i:- (ACSSuGmTmpSxt Type) Outbreak in Central Italy Linked to the Consumption of a Roasted Pork Product (Porchetta). Microorganisms 2023, 11, 2567. https://doi.org/10.3390/microorganisms11102567

Petrin, S., Orsini, M., Massaro, A., Olsen, J. E., Barco, L., & Losasso, C. (2023). Phenotypic and genotypic antimicrobial resistance correlation and plasmid characterization in Salmonella spp. isolates from Italy reveal high heterogeneity among serovars. 11, 1221351. https://doi.org/doi:10.3389/fpubh.2023.1221351

Petrin, S., Wijnands, L., Benincà, E., Mughini-Gras, L., Delfgou-van Asch, E. H., Villa, L., Orsini, M., Losasso, C., Barco, L. (2023). Assessing phenotypic virulence of Salmonella enterica across serovars and sources. Frontiers in Microbiology, 14, 1184387.

Pinarelli Fazion, J., Marzoli, F., Pezzuto, A., Bertola, M., Antonelli, P., Dolzan, B., Barco, L., & Belluco, S. (2023). A systematic review of experimental studies on Salmonella persistence in insects. Npj Science of Food 2023 7:1, 7(1), 1–14. https://doi.org/10.1038/s41538-023-00223-0/

Tiengo, A., Orsini, M., Petrin, S., Losasso, C., Longo, A., Cento, G., Ciot, L., Ceruti, R., & Barco,L., C., V. and. (2023). Whole-Genome Sequence of Salmonella enterica Serovar Bispebjerg from Turkey Reveals Its Pathogenic Potential. 12(5), e0004323-23. Epub 2023 Apr 6. https://doi.org/doi:10.1128/mra.00043-23

b) International conferences:

1
69th International Congress of Meat Science and Technology, with poster presentation
Cento G., Zampiero A., Gazzetta A., Buffon L., De Rui S., Belluco S., Favretti M., Ricci A. The traditional taste of innovation: the example of Veneto Region. 69th ICOMST Congress (poster)

c) National conferences:

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76th conference of the Italian Federation SISVET, with oral communication (Pinarelli Fazion J., Marzoli F., Pezzuto A., Bertola M., Antonelli P., Dolzan B., Barco L., Belluco S. (2023) Persistence of Salmonella spp. in farmed insects species, a systematic review of experimental studies)
3rd National Congress Wild Game Meat Supply Chains, with oral communication (Sardella A., Garon M., Furlan M., Lotteri M., Ramon E., Gietl H., Rabini M., Boscari E., Lettini A. A. (2023) Carni di specie selvatiche e prodotti derivati: identificazione, caratterizzazione ed etichettatura)
VIII Annual Meeting Enter-Vet network laboratories, with various oral communications
Meetin at the IZSPB - Serotyping of Salmonella strains isolated in IZSPB: laboratory activities and data analysis, with oral communication
One Health - integrating human animal health and the environment for a sustainable future, with oral communication – Meeting organized by the Marche Region
SIPA National Annual Conference, oral communication about the evaluation of Salmonella prevalence in European and national setting
ASSOAVI Meeting, oral communication about the evaluation of Salmonella prevalence in European and national setting

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

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www.izsvenezie.it

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	certificate	certificato-ISO-17025.pdf
ISO 17043	certificate	certificato-ISO-17043-aqua.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Isolation and identification of Salmonella in food, feed and samples collected at primary production level	Accredia, Italian Accreditation Body
Serotyping of Salmonella strains	Accredia, Italian Accreditation Body
Molecular serotyping of Salmonella strains	Accredia, Italian Accreditation Body
PCR to differentiate S. Typhimurium and its monophasic variants	Accredia, Italian Accreditation Body
Real Time PCR for Salmonella detection in food and feed samples	Accredia, Italian Accreditation Body
Identification of vaccinal strains of S. Enteritidis	Accredia, Italian Accreditation Body
Pulsed Field Gel Electrophoresis	Accredia, Italian Accreditation Body
MLVA for S. Enteritidis and S. Typhimurium	Accredia, Italian Accreditation Body
Organization of Proficiency tests (Salmonella isolation and serotyping)	Accredia, Italian Accreditation Body

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

Yes

The laboratory has in place a management system that ensures safe and secure handling and storage of Salmonella isolates. This is the basis for protecting laboratory employees and preventing the spread of Salmonella strains outside the laboratory. The management system in place guarantees laboratory biosafety and biosecurity. Furthermore, an internal audit related to the verification of biosafety and biosecurity practices currently in use is organized annually, as well as for traceability, storage of isolates and operational flow.

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?

No

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

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.
Quality control assurance – detection of Salmonella in chicken faeces	Participant	37	Germany (participant)
Quality control assurance – Salmonella serotyping	Participant	32	Germany (participant)
Quality control assurance – detection of Salmonella food	Participant	51	Germany (participant)
Quality control - Salmonella typing - cluster analyses - WGS	Participant	-	Germany (participant)

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?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the Test	WOAH Member Countries
Quality control assurance	Organiser	61	Salmonella detection from samples collected at primary production level	ITALY,
Quality control assurance	Organiser	21	Salmonella serotyping	ITALY,

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No