

WOAH Reference Laboratory Reports Activities 2025

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LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Salmonellosis
*Address of laboratory:	
*Tel:	+39-049 8084.296
*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 WOA 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 WOA Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests	No	0	0
Direct diagnostic tests		Nationally	Internationally
Salmonella Isolation	Yes	2202	0
Monophasic STm PCR	No	346	0
Serotyping (slide agglutination)	Yes	1258	0
PCR (salmonella confirmation and serovar detection)	Yes	442	0
Molecular serotyping	Yes	324	0
Whole Genome Sequencing	Yes	832	0
Test for live vaccine Salmonella Enteritidis and S. Typhimurium strains	No	27	0

TOR2: REFERENCE MATERIAL

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

No

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

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAHA Members?

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 WOAHA Standards for the designated pathogen or disease?

No

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

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

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

Yes

Name of the WOAHA Member Country receiving a technical consultancy	Purpose	How the advice was provided
KOSOVO	Assistance in interpretation of Whole Sequencing data	Webcall and e-mail communication

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

No

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

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 national data on Salmonella strains isolated from the veterinary sector (including feed, food, and animal samples). These data are used for national and international surveillance and are published on the official website

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:

Experts of the WOAHA laboratory contributed to the validation and analyses of EU Salmonella data in the framework of the European Union One Health 2024 Zoonoses Report (<https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2025.9759>)

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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Pinarelli Fazio J, Bertola M., Marzoli F., Cento G., Carlin S., Fornasiero E., Barco L., Belluco S. An experimental study on the persistence of *Salmonella enterica* subsp. *enterica* serovar *Infantis* in farmed *Tenebrio molitor* and *Acheta domesticus*. *Journal of Insects as Food and Feed* (2025) DOI:10.1163/23524588-bja10338

Ferraro R., Petrin S., Gallo A., Cenere G., Salaris S., Alfano D., Morena C., Serluca G., Balestrieri A., Proroga Y.T.R.S., Guarnieri A., De Vita S., Della Rotonda M., De Nicola D., Barco L., Galiero G. European multinational outbreak of *Salmonella* *Umbilo* linked to rocket salad and baby spinach traced to buffalo farms in Italy, 2024 to 2025. *Veterinary Research*, DOI: 10.1186/s13567-025-01663-0

Salerno B., Cornaggia M., Sabatino R., Di Cesare A., Mantovani C., Barco L., Cordioli B., Bano L., Losasso C. (2025) The "best practices for farming" successfully contributed to decrease the antibiotic resistance gene abundances within dairy farms. *Front. Vet. Sci.* 11:1420282.

b) International conferences:

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Peruzzo A., Mancin M., Salerno B., Tiengo A., Furlan M., Ortali G., Barco L., Losasso C.. Unraveling the interaction between chicken gut microbiota and *Salmonella* *Infantis*: implications for enhanced Food Safety, *International Symposium on Salmonella & Salmonellosis*, June 23 - 25, 2025, Saint-Malo, France

Bortolami L., Alban L., Antonelli P.o, Chemaly M., Martelli F., Istvan S., Bonifait L., Barco L.. Updating the DISCONTTOOLS database: addressing research gaps in salmonellosis for better disease control, *International Symposium on Salmonella & Salmonellosis*, June 23 - 25, 2025, Saint-Malo, France

Bortolami L., Gargano V, Loria G. R., Balbo R. A., Cascone G., Stancanelli A., Sardella A., Barco L, Costa A, Sampling activities conducted in agricultural and livestock farms in Sicily for investigating *Salmonella* *Strathcona* outbreaks 2023-2024; *International Symposium on Salmonella & Salmonellosis*, June 23 - 25, 2025, Saint-Malo, France

Bortolami L., Antonelli P.i, Barco L., Bonifait L., Chemaly M., Martelli F., Szabo I., Alban L., Updating Discontools for Salmonellosis: identifying research gaps and future priorities in pig health; *International Symposium on the Epidemiology and Control of Biological, Chemical and Physical Hazards in Pigs and Pork, Safepork*, 6-8 october 2025, Rennes, France

Salaris S., Petrin S., Barco L., Losasso C., *Genomic Insights into Salmonella enterica* serovar *Infantis* with Incomplete Antigenic Formulas in the Poultry Chain; *International Symposium on Salmonella & Salmonellosis*, June 23 - 25, 2025, Saint-Malo, France

Boscolo Anzoletti A., Mancin M., Bortolami L., Zavagnin P., Marafin E., Saccardin C., Barco L.: Mapping the origins of human *Salmonella* strains through Machine Learning models; *International Symposium on Salmonella & Salmonellosis*, June 23 - 25, 2025, Saint-Malo, France

Bortolami L., Pezzuto A., Piovesana A., Furlan F., Massaro A., Mancin M., Boscolo A., Cento G., Cereser A., Zampiero A., Barco L.. Experimental validation of cooking methods and on-label instructions to mitigate *Salmonella* risk in fresh poultry meat and poultry-based products; *International Symposium on Salmonella & Salmonellosis*, June 23 - 25, 2025, Saint-Malo, France (oral presentation)

Bortolami L., Petrin S., Salaris S., Citerio C., Vio D., Losasso C., Longo A., Zavagnin P., Marafin E., Barco L. Genomic insights into *Salmonella enterica* serovar *Choleraesuis*, var. *Kunzendorf*: analysis of isolates from wild boars, domestic pigs and humans in Northeastern Italy, 2011-2025; *International Symposium on the Epidemiology and Control of Biological, Chemical and Physical Hazards in Pigs and Pork, Safepork*, 6-8 october 2025, Rennes, France (oral presentation)

Mancin M., Tata A., Cordovana M., Tiengo A., Cento G., Boscolo A.A., Bortolami L., Barco L.: Random forest analysis for retrieving relevant infrared spectral bands in the prediction of *Salmonella* serogroups. *International Symposium on Salmonella & Salmonellosis*, June 23 - 25, 2025, Saint-Malo, France (oral presentation)

c) National conferences:

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E. Ramon, E. Notariello, M. Furlan, A. Tiengo, G. Danieli, K. Antonello, M.C. Dalla Pozza, C. Saccardin, L. Barco, A.A. Lettini. *Metodi Alternativi per la detection of Salmonella spp in campioni di produzione primaria*. *Convegno SIDILV 2025*, 15-17 ottobre 2025, Palermo

Grassi L., Bortolami L., Barco L., Capello K., Cibin V. *Strumenti di gestione sanitaria della pollina contaminata con Salmonella spp. destinata ad usi agronomici*; *SIDILV 2025*, 15-17 ottobre 2025, Palermo

Bortolami L., Cesco L., Fornasiero E., Petrin S., Mancin M., Boscolo Anzoletti A., Tiengo A., Salaris S., Baggio G., Barco L., *Valutazione della suscettibilità di sierotipi persistenti di Salmonella enterica subsp. enterica (S. Infantis, S. Anatum, S. Agona) a disinfettanti comunemente impiegati negli allevamenti avicoli: studio della resistenza fenotipica e analisi genotipica*; *SIDILV 2025*, 15-17 ottobre 2025, Palermo

Siddi G., Piras F., Gyomoese P., Torpdhal M., Meloni M.P., Migoni M., Casula M., Crobu L., Serra E., Bortolami L., Cibin V., Fredriksson-Ahoma M, De Santis E.P.L., Scarano C., *Rare Pathogens in Wild Game: Assessing Zoonotic Potential and Antimicrobial Resistance in Wild Boars*; *IV Congresso Nazionale Filiera delle Carni di Selvaggina Selvatica*, 9-11 Aprile 2025, Torino

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

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www.izsvenezie.it

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOA H 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	pdf	certificato-ISO-00139.pdf
ISO 17043	pdf	certificato-ISO-00139-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	Accredia, Italian Accreditation Body
PCR and Real Time PCR to differentiate S. Typhimurium and its monophasic variants	Accredia, Italian Accreditation Body
PCR to identify and differentiate Salmonella Gallinarum and Salmonella Pullorum	Accredia, Italian Accreditation Body
PCR to identify Salmonella Infantis	Accredia, Italian Accreditation Body
Identification of vaccinal strains of S. Enteritidis	Accredia, Italian Accreditation Body
Whole Genome Sequencing and cluster analysis	Accredia, Italian Accreditation Body
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 at least 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 WOA H?

No

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

No

TOR10: NETWORK WITH WOA H REFERENCE LABORATORIES

23. Did your laboratory exchange information with other WOA H Reference Laboratories designated for the same pathogen or disease?

Yes

24. Are you a member of a network of WOA H Reference Laboratories designated for the same pathogen?

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOA H 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 WOA H Ref. Labs/ organising WOA H Ref Lab
Quality control assurance – detection of Salmonella in chicken faeces samples _EUROPEAN REFERENCE LABORATORY Detection Salmonella ISO 6579:1	Participant	Not available -Mandatory for the 27 EU reference laboratories	Germany

Antonia Ricci - - ITALY

Quality control assurance – detection of Salmonella in flaxseed samples _EUROPEAN REFERENCE LABORATORY Detection Salmonella ISO 6579:1	Participant	Not available - Mandatory for the 27 EU reference laboratories	Germany
Quality control assurance – Salmonella serotyping_ EUROPEAN REFERENCE LABORATORY Salmonella serotyping ISO 6579:3	Participant	Not available - Mandatory for the 27 EU reference laboratories	Germany

26. Did your laboratory collaborate with other WOA 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 WOA Reference Laboratories
Discontools	Gaps in Salmonella Knowledge (diagnosis – vaccines – treatments)	Federal Institute for Risk Assessment (Germany, Berlin), APHA (UK)

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Quality control assurance – Salmonella detection from samples collected at primary production level (chicken faeces)	Organiser	62	Salmonella isolation (mobile strains)	ITALY,
Quality control assurance – Salmonella detection from samples collected at primary production level (bovine faeces)	Organiser	19	Salmonella isolation (mobile strains)	ITALY,
Quality control assurance – Salmonella Gallinarum and Pullorum in chicken organs	Organiser	12	Salmonella isolation (no-mobile strains)	ITALY,
Quality control assurance – Salmonella serotyping	Organiser	15	Salmonella serotyping	ITALY,