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# The 30th EURL-*Salmonella* workshop

20 May 2025, Online

RIVM report 2025-0039
K.A. Mooijman

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# Colophon



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# Synopsis

**The 30th EURL-*Salmonella* workshop**

20 May 2025, Online

Each European Union member state has a specialised laboratory which examines pathogenic bacteria in food or animals. These are the European National Reference Laboratories (NRLs). In May 2025, the EU Reference Laboratory (EURL) for *Salmonella* organised the 30th annual workshop for the NRLs-*Salmonella*. The purpose of the workshop is to exchange information between the EURL and the NRLs. The workshop was organised as a virtual meeting.

As at earlier workshops, the EURL gave presentations about the Proficiency Tests it carries out every year to monitor the quality of the NRL laboratories. The NRLs scored well in the three Proficiency Tests organised in 2024 and 2025. In two of those tests, the laboratories had to analyse fabric swabs and flaxseed for the presence of *Salmonella*. In the third test, they had to type *Salmonella* bacteria. This report gives a brief summary of those Proficiency Tests. More details about the results will be published separately for each Proficiency Test.

Every five years, the European Commission (EC) assesses the quality of the EURL-*Salmonella*. The positive review for 2025 was discussed in a presentation. In another presentation, the audience received information on *Salmonella* infections in humans caused by eating vegetables. Additionally, there was a presentation on the creation of the new EURL for public health covering food- and waterborne bacteria.

The EURL-*Salmonella*, which is part of the National Institute for Public Health and the Environment (RIVM), organises this workshop every year. An important task of the EURL-*Salmonella* is to monitor the performance of the European NRLs for this bacterium.

Keywords: EURL-*Salmonella*, NRL-*Salmonella*, *Salmonella*, workshop 2025

# Publiekssamenvatting

## De 30e EURL-*Salmonella* workshop

20 mei 2025, Online

Elke lidstaat van de Europese Unie heeft een speciaal laboratorium dat ziekmakende bacteriën in voedsel of dieren onderzoekt. Dit zijn de Europese Nationale Referentie Laboratoria (NRL's). In mei 2025 organiseerde het Europese Referentie Laboratorium (EURL) voor *Salmonella* voor de 30e keer een workshop voor de NRL's-*Salmonella*. Het doel is om informatie uit te wisselen tussen het EURL en de NRL's. De workshop is online gehouden.

Net als bij eerdere workshops gaf het EURL presentaties over de ringonderzoeken die elk jaar worden georganiseerd. Met deze ringonderzoeken controleert het EURL de kwaliteit van de NRL-laboratoria. De NRL's scoorden goed in de drie ringonderzoeken die in 2024 en 2025 zijn georganiseerd. In twee studies moesten de laboratoria *Salmonella* terugvinden in veegdoekjes en in lijnzaad. In het derde ringonderzoek moesten zij *Salmonella*bacteriën typeren. In dit rapport staan de ringonderzoeken kort beschreven. Meer informatie over de resultaten wordt apart per ringonderzoek gepubliceerd.

De Europese Commissie (EC) beoordeelt elke vijf jaar de kwaliteit van het EURL-*Salmonella*. Hun positieve oordeel in 2025 is ook in een presentatie toegelicht. Een andere presentatie gaf informatie over *Salmonella*-besmettingen bij mensen na het eten van groente. Ook was er een presentatie over de oprichting van het nieuwe EURL publieke gezondheid voor voedsel en water gerelateerde bacteriën.

Het EURL voor *Salmonella* is onderdeel van het RIVM en organiseert deze workshop elk jaar. Een belangrijke taak van het EURL-*Salmonella* is de kwaliteit controleren van de nationale referentielaboratoria voor deze bacterie in Europa.

Kernwoorden: EURL-*Salmonella*, NRL-*Salmonella*, *Salmonella*, workshop 2025

# Contents

# Summary

On 20 May 2025, the European Union Reference Laboratory for *Salmonella* (EURL-*Salmonella*) organised its annual workshop. The workshop was held as a virtual meeting.

Participants in the workshop were representatives of the National Reference Laboratories (NRLs) for *Salmonella* from the 27 European Union (EU) member states, 5 (potential) EU-candidate countries and 3 European Free Trade Association (EFTA) countries. Representatives of the European Commission Directorate-General for Health and Food Safety (EC DG SANTE) and the European Food Safety Authority (EFSA) also attended the workshop. In total 93 participants registered.

During the workshop presentations on several topics were given:

- The representatives of EC DG SANTE held presentations on the review of the EURL-*Salmonella* designation and on the application of Whole Genome Sequencing (WGS) in foodborne outbreak investigations.
- Representatives of the EURL-*Salmonella* presented the results of the Proficiency Tests (PTs) carried out in 2024 and 2025, namely the PT on detection of *Salmonella* in fabric swabs (September/October 2024), the PT on *Salmonella* typing (November/December 2024) and the PT on detection of *Salmonella* in flaxseed (February/March 2025).
- A representative of the Netherlands National Institute for Public Health and the Environment (RIVM) introduced the (new) EURL Public Health for food- and waterborne bacteria.
- A representative of the EURL-*Salmonella* presented some experiments with testing for *Salmonella* in/on tomatoes, followed by a presentation of an EFSA representative on Rapid Outbreak Assessments on multi-country foodborne outbreaks linked to *Salmonella* in vegetables.

The workshop concluded with a presentation on the EURL-*Salmonella* work programme for 2025-2026. This presentation also included an update on ISO and CEN activities.

The workshop presentations are available on the EURL-*Salmonella* website: https://www.eurlsalmonella.eu/en/workshop-2025.

# 1 Introduction

This report contains the abstracts of the presentations given at the 2025 EURL-*Salmonella* workshop, as well as summaries of the discussions that followed these presentations. The full presentations are available on the EURL-*Salmonella* website (provided the author has given permission for publication): https://www.eurlsalmonella.eu/en/workshop-2025

The layout of the report is consistent with that of the workshop programme.
Chapter 2 includes the abstracts of the presentations given at the workshop.
The workshop is evaluated in Chapter 3; the evaluation form template can be found in Appendix 3.
The list of participants is presented in Appendix 1.
The workshop programme is incorporated in Appendix 2.

# 2 Tuesday 20 May 2025

## 2.1 Opening and introduction

*Kirsten Mooijman, head of EURL-*Salmonella*, Bilthoven, the Netherlands*

Kirsten Mooijman, head of the European Union Reference Laboratory (EURL) for *Salmonella*, opened the 30th workshop of the EURL-*Salmonella*, welcoming all participants to this online EURL-*Salmonella* workshop.
In total, 93 participants had registered for the workshop, including representatives of the National Reference Laboratories (NRLs) for *Salmonella* from the 27 EU member states (MS), 5 (potential) EU candidate countries, and 3 member countries of the European Free Trade Association (EFTA). Additionally, representatives of the European Commission Directorate-General for Health and Food Safety (EC DG SANTE) and of the European Food Safety Authority (EFSA) attended.

The evaluation of the workshops organised in 2019-2024 was presented, showing high (positive) scores for all questions raised.
The workshop started after the programme and the general information had been presented. The workshop programme can be found in Annex 2.

## 2.2 Review of designation of EURL-*Salmonella* and further steps on WGS in foodborne outbreak investigations

*Kris de Smet and Hilde Loonen, DG SANTE, Brussels, Belgium*

Regulation 2017/625, article 92(3) (EC, 2017) states that the mandate and the operation of the European Union Reference laboratories (EURLs) must be reviewed regularly. The review of the EURL-*Salmonella* was performed in 2025.
This review included an evaluation of the overall performance of the annual work programme and of the designation criteria. Feedback from member states was asked on the activities of the EURL, because the EURL is obliged to support the NRLs. Finally, the feedback from cooperation with European bodies was evaluated.
The review had the following outcome: the performance of the working programme of the EURL was highly scored by the NRLs, as well as by the European bodies (the European Commission and EFSA). In particular, the professionalism of the EURL, its quick responses, its informative newsletters and its well organised workshops were often mentioned and highly appreciated.
It is therefore proposed that the existing EURL-*Salmonella* should continue to remain designated.

During the 2024 workshop of the EURL-*Salmonella*, the intention was announced to propose a Commission Implementing Regulation making whole genome sequencing (WGS) mandatory in foodborne outbreaks. In the meantime, the Implementing Regulation (EU) 2025/179 (EC, 2025) has been published and will apply from 23 August 2026. Among other pathogens, at least one isolate of each *Salmonella enterica* outbreak

must be analysed with WGS and submitted to EFSA. The Regulation is accompanied with training and guidance, to be developed by an Inter-EURL working group, and with the publication of frequently asked questions about this new requirement, drafted by the European Commission and EFSA.

## 2.3 Results EURL-*Salmonella* combined Proficiency Test – Interlaboratory study PPS-FOOD 2024 - Detection of *Salmonella* in fabric swabs

*Irene Pol-Hofstad, EURL-Salmonella, Bilthoven, the Netherlands*

In October 2024, the European Union Reference Laboratory (EURL) for *Salmonella* organised a combined Proficiency Test (PT) and Interlaboratory study (ILS) on the detection of *Salmonella* in samples from the primary production Stage (PPS) and Food. Participation was mandatory for the National Reference Laboratories (NRLs) for *Salmonella* of all European Union (EU) member states (MS), which are responsible for the detection of *Salmonella* in PPS samples and in Food samples. In total 68 NRLs-*Salmonella* participated in this study, originating from the 27 EU member states, 13 other European countries (EU candidate MS or potential EU candidate MS, EFTA countries and third countries), and one non-European country.

*Samples*
In this study, the matrix under analysis consisted of fabric swabs, artificially contaminated in the EURL-*Salmonella* laboratory with a diluted culture of *Salmonella* Typhimurium (STm).

Each NRL-*Salmonella* had to analyse the following set of blindly coded samples:

- 3 negative fabric swab samples (no *Salmonella* added);
- 3 fabric swab samples with a high level of STm;
- 4 fabric swab samples with a low level of STm;
- 6 fabric swab samples with an extra low level of STm;

The samples were prepared at the EURL-*Salmonella* laboratory and stored at 5 °C for approximately one week, until the day of dispatch. On Monday 29 September 2024, the fabric swab samples were packed and sent to the NRLs-*Salmonella*. The NRLs were asked to store the samples at 5 °C on arrival until the start of the analysis. The laboratories were asked to start the analyses on Wednesday 2 October 2024 and no later than Monday 7 October 2024.
The 6 extra low-level samples were included in this study to allow the calculation of performance characteristics of the method (ILS part of the study). The results of these samples were not used for evaluation of the performance of the participants (PT part of the study).

*Method*
All laboratories used the prescribed method EN ISO 6579-1:2017(/A1:2020) to test the samples. Only two participating NRLs were not accredited for this method.

Twenty NRLs also reported results for a second method. For most of these participants the results of the alternative methods were identical to those obtained using EN ISO 6579-1:2017(/A1:2020). In one sample, however, two NRLs did not detect *Salmonella* using their alternative method, while *Salmonella* was detected using the bacteriological culture method.

*Results*
Almost all of the 68 participants detected *Salmonella* in two or more of the four fabric swab samples contaminated with a low level of *Salmonella* Typhimurium (4,5 cfu/sample). One laboratory scored an unsatisfactory performance as it tested three out of the four low level samples negative for *Salmonella*. These results were not within the criteria of good performance, which permit only two negative samples. The sensitivity rate for these samples was 92,3%.

Almost all participants detected *Salmonella* in all three samples contaminated with a high level of *Salmonella* Typhimurium (37,5 cfu/sample). Two NRLs tested two out of the three high-level samples negative for *Salmonella*. This was not within the criteria of good performance. The sensitivity rate for these samples was 96,6%.

All three negative samples were scored correctly as negative by all participants. The specificity rate of the negative samples was 100%.

Overall, the NRLs-*Salmonella* scored well in this Proficiency Test, with an accuracy of 95,9%. One participant scored an unsatisfactory performance because of problems with detecting *Salmonella* in the low contaminated samples. However, this participant proved its ability to detect *Salmonella* in low concentrations with their results in the extra low-level samples. The laboratory scored three out of six of these extra low-level samples (with approximately 1 cfu *Salmonella* per sample) positive. Taking these results into account, the performance of this participant was amended to 'moderate'. The performance of two NRLs which scored several high-level samples negative was not evaluated, due to the very long transport time of the parcels, resulting in deterioration of the samples.

Further details can be found in the interim summary report on this PT (Pol-Hofstad and Mooijman, 2025).

**Q:** This is a question concerning a national PT. In this PT the participants were requested to follow EN ISO 6579-1, or a validated alternative method for detection of *Salmonella*. However, one laboratory used XLT4 instead of XLD as first isolation medium. The results were as expected, but how would you assess the results in this case in which the prescribed method is not followed in full detail.
**A:** In a comparable situation in an EURL-*Salmonella* PT we have indicated that we could not evaluate the results, as the prescribed method was not used. Additionally, we indicated that the results did not deviate from the expected results.

## 2.4 Results EURL-*Salmonella* combined Proficiency Test FOOD-FEED 2025 - Detection of *Salmonella* in flaxseed

*Robin Diddens, EURL*-Salmonella*, Bilthoven, the Netherlands*

In February/March 2025, the European Union Reference Laboratory for *Salmonella* (EURL-*Salmonella*) organised a combined Proficiency Test (PT) for the detection of *Salmonella* in food and feed for the National Reference Laboratories for *Salmonella* (NRLs-*Salmonella*). The matrix under analysis was flaxseed.
NRLs-*Salmonella* analysing *Salmonella* in food samples and NRLs-*Salmonella* analysing animal feed products were invited to participate in this PT. NRLs-*Salmonella* performing the analysis of food and feed samples in the same laboratory could request two separate laboratory codes with two (similar) sets of samples, allowing them to perform the analysis separately as NRL-*Salmonella* food and NRL-*Salmonella* feed. However, these NRLs-*Salmonella* could also choose to analyse only one set of samples under one laboratory code or under two separate codes.

In total 49 laboratory codes were generated for this EURL-*Salmonella* Proficiency Test (PT). The participants included NRLs-*Salmonella* located in 27 EU member states and 9 third countries (EU candidate MS or potential EU candidate MS, EFTA countries and the United Kingdom).

The most important objective of the PT was to test the performance of the participating laboratories for detection of *Salmonella* in the artificially contaminated flaxseed samples. The prescribed method for detecting *Salmonella* species (spp.) was EN ISO 6579-1:2017(/A1:2020). The participants were asked to report *Salmonella* as 'detected' or 'not detected' for each sample (following confirmation).

Prior to the start of the PT, pre-tests were conducted to ensure that the samples were fit for use. Flaxseed samples, artificially contaminated with two concentrations of *Salmonella* Typhimurium (STm), were tested for their stability at 2 storage temperatures (5 °C and 10 °C). Additionally, the concentration of the natural background flora (aerobic count and number of *Enterobacteriaceae*) in the flaxseed was measured.

For the pre-tests, flaxseed samples were artificially contaminated with 5 cfu STm/25 g or with 11 cfu STm/25 g. The flaxseed samples that had been artificially contaminated with 11 cfu STm/25 g were stable at 5 °C and at 10 °C during the storage period of 13 days. Of the samples that had been artificially contaminated with 5 cfu STm/25 g, only four out of six showed to be positive for *Salmonella* after 13 days and 20 days of storage at 5 °C. All samples stored at 10 °C were positive after 13 days of storage. Based on these results and the results from previous PTs with flaxseed as matrix, the aim was to inoculate the low-level flaxseed samples with approximately 8 cfu STm/25 g.

The number of aerobic bacteria and *Enterobacteriaceae* in the flaxseed samples remained relatively stable when stored at 5 °C and at 10 °C. The number of aerobic bacteria in the flaxseed samples during storage was approximately $10^7$ cfu/25 g flaxseed. The number of *Enterobacteriaceae* was approximately $10^6$ cfu/25 g flaxseed.

On Monday 24 February 2025, the EURL-*Salmonella* sent the PT samples to all participants. Each laboratory received 14 samples, containing 25 g of flaxseed. These samples consisted of four negative samples (no *Salmonella* added), six samples with a low level of STm (inoculum 11 cfu/25 g) and four samples with a high level of STm (inoculum 72 cfu/25 g). The PT samples had been artificially contaminated with a diluted culture of *Salmonella* Typhimurium at the EURL-*Salmonella* laboratory. The NRLs-*Salmonella* could choose to start the analysis of the samples directly upon arrival of the parcel or in the following days, but not later than Monday 3 March 2025.

All 49 participants met the criteria of good performance for the EURL-*Salmonella* Proficiency Test for the detection of *Salmonella* in flaxseed samples.

The specificity rate of the negative flaxseed samples was 100%. The sensitivity rate of the flaxseed samples artificially contaminated with *Salmonella* Typhimurium was 98%. The accuracy rate of all flaxseed samples for all participating laboratories was 99%.

Additionally, the NRLs-*Salmonella* were given the opportunity to analyse the samples using a second detection method, if this method was (routinely) used in their laboratories. The results obtained with a second method were not used to assess the performance of the NRLs-*Salmonella*.
Nineteen participants used a second detection method (real-time PCR, VIDAS and PCR) to analyse the samples. Bar one, the results of the second detection methods were all comparable to the reported results obtained with EN ISO 6579-1:2017(/A1:2020). One laboratory tested four out of six low-level contaminated flaxseed samples positive for *Salmonella* using the second detection method, while testing five out of the six low-level contaminated flaxseed samples positive for *Salmonella* using EN ISO 6579-1:2017(/A1:2020).

Further details can be found in the interim summary report on this PT (Diddens and Mooijman, 2025).

**Q:** Why do you no longer prepare individual reports of the PT results per laboratory?
**A:** We try to be more efficient in reporting the PT results. The preparation of individual reports, including the individual mailings, is a lot of work. All results, as well as the assessment of the performance of the participants can be found in the (summary) reports of the PT, reported per laboratory under lab code.

## 2.5 Results EURL-*Salmonella* Proficiency Test Typing 2024 – serotyping and cluster analysis

*Wilma Jacobs-Reitsma, EURL-Salmonella, Bilthoven, the Netherlands*

In November 2024, the annual *Salmonella* typing Proficiency Test (PT) was organised by the EURL-*Salmonella*. The PT's main objective was to evaluate whether the typing of *Salmonella* strains by the NRLs-

*Salmonella* in the European Union was carried out uniformly and whether comparable results were obtained.

A total of 33 laboratories participated in this PT. Participation was mandatory for the NRLs-*Salmonella* of the 27 EU member states. The remaining six NRLs participated voluntarily: two from EU candidate member states, three from EFTA countries and one from a third country.

All 33 laboratories performed serotyping. The EURL-*Salmonella* selected a total of twenty obligatory *Salmonella* strains plus one optional strain for serotyping. The strains had to be typed according to the method routinely used in each laboratory, following the White-Kauffmann-Le Minor scheme (Grimont and Weill, 2007).

Overall, 99,7% of the strains were typed correctly for the O-antigens, 98,8% of the strains were typed correctly for the H-antigens, and 98,8% of the strains were correctly named by the participants.
Criteria for 'good performance' regarding serotyping were defined in 2007. Based on these criteria, the participants' performance was very good, also for the four participants that submitted (partial) whole genome sequencing (WGS)-based serotyping results.
All 27 EU-MS NRLs and five non-EU-MS NRLs achieved the defined level of good performance in the first stage of the PT. One non-EU-MS NRL-*Salmonella* did not achieve the defined level of good performance. This laboratory participated for the first time and a dedicated on-site training is organised before the next PT serotyping, so that they can improve.

The PT Typing 2024 also included an optional part on cluster analysis. In total 24 participants took part in this WGS-based cluster analysis.
The cluster analysis mimicked an outbreak situation, with a *Salmonella* Infantis as the reference strain. Raw sequence data on this reference strain, as well as on another six *Salmonella* strains, were made available to the participants via a secure ftp-server for 'dry' evaluation.
Participants were asked to handle and analyse six 'wet' *Salmonella* strains, to analyse the six 'dry' *Salmonella* strains and to report per strain whether a cluster with the reference strain was found or not. Additionally, the participants were asked whether or not the data passed their quality control criteria, and if and how they serotyped the strains.

The 24 participants submitted a total of 27 cluster analyses based on WGS-data; two participants submitted both cgMLST-based and SNP-based data results and one participant submitted both cgMLST-based and wgMLST-based data analyses.
The participants' cluster analysis results were evaluated by comparing the results to the expected results in the outbreak investigation setting, as pre-defined by the EURL-*Salmonella.*
Twenty-three of the 27 submissions (three participants with multiple submissions) reported the four expected strains to be part of the cluster. However, one participant also included a mixed serovars 'strain' into this cluster. Consequently, 22 of the 27 submissions reported the cluster entirely as expected.

Further details can be found in the interim summary reports of this PT (Jacobs-Reitsma et al., 2025a, 2025b).

**Q:** Would it be allowed to predict serotypes from WGS in the serotyping part of the PT?
**A:** Yes, this is possible if this is the daily method for serotyping you are using in your laboratory and for which your laboratory is accredited. Additionally, the method needs to be properly validated.
**Q:** Should SNP (single nucleotide polymorphism) or SNV (single nucleotide variant) be used for cluster analysis?
**A:** The question was raised if this is merely a linguistic difference, but an NRL provided this explanation: SNP is a specific SNV (single nucleotide variant) with more than 1% presence in a population. So, all SNPs are SNVs but not all SNVs are SNPs. This NRL uses the term SNV in contamination analysis and SNPs for phylogeny. Another NRL mentioned that SNPs may be restricted to germline cells, which bacteria are not.

## 2.6 Introduction to the EURL Public Health for food- and waterborne bacteria

*Maren Lanzl, RIVM, Bilthoven, the Netherlands*

This presentation introduces the EU Reference Laboratory for Public Health (PH) on Food- and Waterborne Disease Bacteria (EURL-PH-FWDB), one of several new EURLs established under EU Regulation 2022/2371 (EC, 2022) to strengthen the EU's capacity for addressing serious cross-border threats to health. The EURL-PH-FWDB is operated by a consortium of three leading European public health institutes: Statens Serum Institut (SSI, Denmark – coordinator), the National Institute for Public Health and the Environment (RIVM, Netherlands), and the Istituto Superiore di Sanità (ISS, Italy). These institutions work closely with the European Centre for Disease Prevention and Control (ECDC) and the European Health and Digital Executive Agency (HaDEA), and in alignment with other EURLs and relevant European initiatives.
The EURL-PH-FWDB focuses on a defined set of target pathogens. The five main pathogens in scope are *Salmonella spp.*, *Campylobacter spp.*, *Listeria monocytogenes*, *Shigella spp.*, and *Shiga* toxin-producing *Escherichia coli* (STEC). In addition, the EURL also addresses *Yersinia spp.* (excluding *Yersinia pestis*) and *Vibrio spp.*, as well as other food- and waterborne bacterial pathogens that may become relevant in relation to public health.

Although all three consortium partners are experts in all target organisms, the separate institutes hold lead responsibility for specific pathogens: RIVM is responsible for *Salmonella* and *Shigella*, SSI for *Campylobacter* and *Listeria monocytogenes*, and ISS for STEC. Together, the consortium partners ensure comprehensive technical coverage and support for network laboratories across Europe.
The EURL-PH-FWDB is structured around six key work packages. Work Package 1 (Coordination) oversees collaboration within the network and with ECDC, HaDEA, and other EURLs. Work Package 2 (Dissemination and Communication) focuses on information sharing and engagement with relevant stakeholders. Work Package 3 (Support to Network Laboratories) provides reference diagnostics, materials, scientific advice, and troubleshooting. Work Package 4 (External Quality Assessment Schemes) develops and delivers EQAs - one per target pathogen

annually - to assess and improve laboratory performance. Work Package 5 (Scientific Advice) contributes expert input to ECDC for risk assessments and outbreak responses. Work Package 6 (Training) provides in-person courses, webinars, and exercises to strengthen capacities across the network.

By fostering close collaboration, harmonisation of methods, and timely response capabilities, the EURL-PH-FWDB plays a crucial role in improving public health preparedness and laboratory quality across the EU in relation to food- and waterborne bacterial diseases.

More information about the EURLs for Public Health can be found on the website of the European Commission:
https://health.ec.europa.eu/health-security-and-infectious-diseases/surveillance-and-early-warning/eu-reference-laboratories-public-health_en

**Q:** You mentioned a network of laboratories. Are these NRLs for PH? Are there NRLs PH from all EU member states (MS) and is it mandatory to have an NRL PH in each EU MS? Will a list of all NRLs-PH be published?
**A:** This concerns a network of NRLs for PH indeed. We get information from ECDC about the NRLs PH in the different EU MS. We hope to have a complete list of laboratories by the end of 2025. By then we may also publish the list of NRLs-PH-FWDB on our website, which is still under construction for EURL-PH-FWDB. Currently, the ECDC Food and Waterborne Diseases and zoonoses networks of laboratories (FWD-net) is already in place. These laboratories already participate in EQA schemes, and it is likely that they will continue to do so when they become part of the new EURL-NRL PH network. The list of FWD-net laboratories is published on the ECDC website:
https://www.ecdc.europa.eu/en/about-us/partnerships-and-networks/disease-and-laboratory-networks/fwd-net
Remark from DG SANTE: For non-PH EURLs/NRLs there is a strong legal basis, as laid down in Regulation 2017/625 for appointment of reference laboratories. The appointment of NRLs-PH is more challenging, as ECDC and DG SANTE do not have these strong and binding tools to oblige EU MS to appoint NRLs-PH. The development of the network will need time, and the appointment of NRLs-PH is to be decided by the national authorities of EU MS.
**Q:** How do you see future cooperation with the non-PH EURLs?
**A:** Our initial proposal indicates that it is important to focus on the OneHealth approach, and that the EURL-PH-FWDB will try to work together with the relevant non-PH EURLs.
**Q:** Are toxin producing bacteria part of the remit of this new EURL-PH?
**A:** No, these bacteria are not covered in the EURL-PH-FWDB. They will probably be part of another EURL.

## 2.7 *Salmonella* in/on tomatoes

*Kirsten Mooijman, head of EURL-Salmonella, Bilthoven, the Netherlands*

In September 2024, the EURL-*Salmonella* was requested by EC DG SANTE to collect information on the detection of *Salmonella* in/on tomatoes. The request was raised because *Salmonella* Strathcona had

caused cases in several EU/EEA member states yearly since 2011. The occurrence of cases was seasonal, mainly from July to December, and therefore suspicion fell on a seasonal product. Epidemiological investigation identified tomatoes as the suspected vehicles. However, *Salmonella* Strathcona was not found in/on tomatoes.
In order to collect information, EURL-*Salmonella* asked the NRLs-*Salmonella*:

- whether they had ever found *Salmonella* spp. in/on tomatoes and if so, which serovar(s) were found;
- if a special preparation procedure was needed for testing tomatoes.

Additionally, some literature relevant to the subject was reviewed and a few limited laboratory experiments were performed.

In total 22 NRLs-*Salmonella* from 20 different countries replied, of which 21 never found *Salmonella* in/on tomatoes or do not test for *Salmonella* in/on tomatoes. One NRL reported to have 5 different *Salmonella* isolates from tomato-based foodstuff in their strain collection (isolated in the period 2008-2022). One NRL indicated that tomatoes were part of a national zoonosis monitoring in 2016, for which a specific protocol for preparation of samples was drafted.

In 2014, an EFSA opinion was published on *Salmonella* in tomatoes (EFSA, 2014) indicating that:

- limited data are available on the occurrence of *Salmonella* in/on tomatoes;
- testing of tomatoes for *Salmonella* could be limited to instances where other factors indicate breaches in e.g. HACCP programmes.

More recent publications confirm this EFSA opinion.

Some experiments were performed at the EURL to test the pH of tomatoes before and after adding 25 g of cut fruit to the pre-enrichment broth for *Salmonella* (BPW). Additionally, the recovery of low levels of *Salmonella* Strathcona on cherry tomatoes was tested after different treatments of the tomato samples. It was noticed that all tomatoes had an initial pH of approximately 4. After addition of 25 g of cut fruit to the BPW, the pH of the mixture was approximately 7. From the recovery experiment it was concluded that the normal procedure for sample preparation of 'one type of fruit or vegetable', as described in EN ISO 6887-4:2017, clause 9.7.2, can be applied to the preparation of tomato samples.
More information can be found in the EURL-*Salmonella* document '*Salmonella* detection in/on tomatoes', available at https://www.eurlsalmonella.eu/en/documenten/salmonella-inon-tomatoes

## 2.8 Joint EFSA-ECDC Rapid Outbreak Assessments on multi-country foodborne outbreaks linked to *Salmonella* in vegetables

*Eleonora Sarno, EFSA, Parma, Italy*

Foodborne diseases continue to pose a significant concern to public health in the EU. The European Food Safety Authority (EFSA), in collaboration with the European Centre for Disease Prevention and Control (ECDC), assesses foodborne outbreaks with a multi-country dimension and produces scientific assessments also known as Rapid Outbreak Assessments (ROA). These technical reports support risk managers and policy makers (officials of the European Commission and EU/EEA countries) in the investigation of the food incidents and the implementation of interventions along the food chain. Such measures aim at identifying the contamination points and removing the contaminated foods to prevent further infections.

This presentation illustrates the latest assessments on *Salmonella* outbreaks linked to the consumption of fresh produce. It will focus on two recent cross-border outbreaks:

1. A 2023-2024 outbreak of *Salmonella* Strathcona ST2559 infections (232 confirmed cases, in 16 countries) linked to tomatoes (ECDC and EFSA, 2024).
2. A 2023-2025 outbreak involving eight serovars of *Salmonella* (509 confirmed cases, in 9 countries) linked to sprouted seeds (ECDC and EFSA, 2025).

**Q:** How are seeds decontaminated in order to meet food safety goals?
**A:** We did not receive this type of information from the company. We only know that all the seeds were categorised as organic and came from certified organic producers.
**Q:** Will you include sprouts in the EURL-*Salmonella* PTs?
**A:** Thank you for your suggestion. We may have a closer look at the possibilities.

## 2.9 Work programme EURL-*Salmonella* second half 2025, first half 2026; Concluding remarks workshop and closure

*Kirsten Mooijman, head of EURL-Salmonella, Bilthoven, the Netherlands*

Kirsten Mooijman summarised the information on the EURL-*Salmonella* work programme for 2025-2026.
The current EURL activities are part of a grant agreement for a three year period: 2025-2027. The call for submission of proposals for EURL activities was open from 14 May until 3 September 2024. Then the proposals were evaluated by HaDEA and the grant agreement preparation (GAP) was finalised in the first months of 2025.
It was planned that the National Institute for Public Health and the Environment (RIVM), where EURL-*Salmonella* is located, would move from Bilthoven to the new location in Utrecht in the first quarter of 2025. However, this relocation has been delayed. As a result, the EURL-*Salmonella* activities originally planned for Q3-Q4 2025 were moved forward to Q2-Q3. In February 2025, this new planning was communicated to the NRLs-*Salmonella.*

The template for the work programme (still) follows Regulation EU No 2017/625 (EC, 2017), Article 94(2) and is divided into four main activities. Each activity is further divided into one or more sub-activities.

***Activity 1 – To ensure availability and use of high-quality methods and to ensure high-quality performance by NRLs***

Sub-activity 1.1 Analytical methods
Objectives:

- Standardisation of methods (ISO and CEN activities);
- Keeping track of developments in (alternative) methods;
- Providing NRLs with information on developments regarding relevant (standardised/new) analytical methods.

Sub-activity 1.2 joint EURLs working group on NGS
Objectives:

- Promoting the use of NGS across the EURL networks;
- Building capacity for producing and using NGS data within the EU;
- Ensuring liaison between the work of the EURLs and the work of EFSA and ECDC on NGS.

The working group consists of eight biological EURLs. Several activities in relation to NGS have been defined. For each activity guidance documents are being prepared and published on the EURLs' websites (see also https://www.eurlsalmonella.eu/methods/ngs). For 2025 the following new guidelines are foreseen: quality control parameters for WGS and accreditation of WGS.

Sub-activity 1.3 Proficiency Tests (PTs)
Objective: Evaluation of the performance of the NRLs-*Salmonella* for detection and typing of *Salmonella* by means of interlaboratory comparisons (Proficiency Tests).

Proficiency Tests planned for 2025-2026:

- June/July 2025: PT Primary Production stage (PPS) on detection of *Salmonella* in chicken faeces.
- August-October 2025: PT on serotyping of *Salmonella*.
- February/March 2026: PT on detection of *Salmonella* in food or animal feed samples.

The planning for 2026 may be amended, depending on the date of relocation to the new building.

***Activity 2 – To provide scientific and technical assistance to NRLs***

Sub-activity 2.1 Workshop
Objective: to exchange information on the activities of the NRLs-*Salmonella* and the EURL-*Salmonella* and on (new) developments in the relevant work field.

EURL-*Salmonella* aims to organise an online or hybrid workshop every other year. In general, the hybrid workshop (on location) will last 1,5 days and the online workshop 1 day or 2 half days. The workshop in 2026 will in principle be a hybrid one. The timing of this workshop depends on the planning of RIVM's relocation.

Sub-activity 2.2 Training courses
Objective: to train NRLs-*Salmonella* in specific work fields.

The following training courses are foreseen:
- Joint EURLs training on NGS. In 2025, this training was held in June in Maisons-Alfort, France. The location for 2026 is not yet known.
- Individual NRL trainings at the request of an NRL or on the advice of the EURL-*Salmonella* (for instance, in case of unsatisfactory performance in PTs).

Sub-activity 2.3 Scientific advice and support of NRLs
Objectives:
- Providing NRLs-*Salmonella* with scientific and technical assistance in their relevant work fields;
- Performing confirmatory testing and/or typing (samples/isolates) for NRLs-*Salmonella* where appropriate;
- Performing WGS analysis of isolates from NRLs-*Salmonella* for outbreak investigations;
- Maintaining the EURL-*Salmonella* website and keeping the information up to date (https://www.eurlsalmonella.eu);
- Publishing four newsletters per year through the website.

***Activity 3 To provide scientific and technical assistance to the European Commission and other organisations***
Sub-activity 3.1 Scientific advice for and support of EC and other organisations
Objectives:
- Providing scientific and technical assistance to EC DG SANTE in the relevant work field;
- Providing assistance to DG SANTE, EFSA, and (NRLs of) member states in the event of (international) *Salmonella* outbreaks;
- Participating in the EFSA-ECDC Advisory Board on management and sharing of molecular typing data of isolates to the One Health WGS database;
- Cooperating with other biological EURLs.

***Activity 4 Reagents and reference collections***
Sub-activity 4.1 Reference strains and reference materials
Objectives: to supply information on available culture collections and suppliers of microbiological reference materials. Publication of a reference collection of WGS data.
This sub-activity has been merged with other sub-activities.

***Update on ISO/CEN activities 2024-2025***
Additional to the work programme 2025-2026, an update was given on some relevant ISO/CEN activities, especially in relation to *Salmonella*.

*ISO/TC34/SC9 WG9 Detection of Salmonella*
Currently, ISO-WG9 focuses on the collection of missing performance characteristics for EN ISO 6579-1. In EN ISO 6579-1:2017, performance characteristics are missing for the following (food) categories:
- two additional food categories (to make sure that the standard is validated for a broad range of foods);

- category 'pet food and animal feed';
- category 'environmental samples of the food or feed production';
- larger test portion sizes (>25 g);
- $LOD_{50}$ for use of MSRV for food/feed/environmental samples.

For the collection of missing performance characteristics, the following activities were performed:

- Literature review in late 2023 and early 2025. This resulted in 12 useful studies for 5 different food categories, plus the category animal feed. These data were used to calculate $LOD_{50}$ values.
- Organisation of the combined PT-ILS on detection of *Salmonella* in environmental samples in October 2024. This study also included the use of MSRV. The data were analysed and $LOD_{50}$ values were calculated.

The set-up of the combined PT-ILS is summarised in paragraph 2.3 of this report. In total 32 datasets for 'environmental samples from food/feed production' were obtained. Eleven datasets Of these 32 datasets, 11 were excluded for further analyses due to (small) technical deviations from the prescribed method EN ISO 6579-1:2017/A1:2020. These deviations included problems concerning the transport of the samples, starting the analyses after 3 October 2024, minor deviations in composition or pH of culture media, and minor deviations in incubation temperatures or times. The performance characteristics were calculated from the remaining 21 datasets, showing the following results:
Specificity: 100%
Sensitivity for extra low-level contaminated samples: 60%
Sensitivity for low and high contaminated samples: 98%
$LOD_{50}$: 1,1 (0,9-1,4) cfu/test portion.

All performance characteristics - collected from literature, from the PT-ILS study and already available in EN ISO 6579-1:2017 - were summarised in one table. This table now contains the performance characteristics of 7 different food categories, of the category pet food and animal feed, of the category environmental samples (food or feed production) and of the category primary production samples (PPS). The only performance characteristics still missing are the ones for larger test portion sizes. ISO-WG9 will further discuss the options for collecting these missing performance characteristics.
WG9 will propose ISO/TC34/SC9 to draft and publish a second amendment of EN ISO 6579-1:2017. This Amd.2 will be called 'Performance characteristics' and will replace clause 11 and Annex C of EN ISO 6579-1:2017. After publication of Amd.2, the revision of EN ISO 6579-1:2017 will begin, in order to update the ISO document and to incorporate the two amendments.

*ISO/TC34/SC9 WG10 Typing of Salmonella*
WG10 developed EN ISO 6579-4, entitled 'Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of *Salmonella* - Part 4: Identification of monophasic *Salmonella* Typhimurium (1,4,[5],12:i:-) by polymerase chain reaction (PCR)'.
In the second half of 2024, the Final Draft International Standard (FDIS) of EN ISO 6579-4 was prepared, and the ballot took place from 31 October until 26 December 2024. The outcome was 100% approval in

CEN and ISO, including some editorial comments. The comments were addressed and the final version of EN ISO 6579-4 was published in February 2025. This document happens to be the 100th standard published by ISO/TC34/SC9!

*ISO/TC34/SC9 WG3 Method validation*
Many activities are ongoing in WG3, including the start of the revision of parts 1 and 2 of EN ISO 16140 'Microbiology of the food chain – Method validation':

- Part 1: Vocabulary.
- Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method.

***General discussion***
**Q:** Is it necessary to do the differentiation test - to distinguish between vaccine strains and wild strains - every time *Salmonella* Enteritidis (SE) or *Salmonella* Typhimurium (STm) is found in laying hen flocks?
**A1**: When we find a strain that is likely to be a vaccine strain, we always do the differentiation test.
**A2**: A differentiation test needs to be done every time SE (or STm) is found in samples from laying hens or breeders, either taken by food business operators or for official controls. It is important to exclude contamination of a flock with a wild SE/STm strain, as strict measures are required in that case.
**A3**: When a laying hen flock is sampled - regardless of the age of the flock (at the beginning of the laying period or later) - and found to be *Salmonella* positive, a vaccine strain differentiation test is carried out if it is known that the flock was vaccinated. Our experience shows that vaccine strains can also be detected at a later point in time, even when - according to the manufacturer's information - the vaccine strain should no longer be shed.
**A4**: We always perform the differentiation test according to the information about vaccination of the flock. There is a vaccine against SE of which the vaccine strain last longer than normally expected.
**A5**: In our country it is indicated that the laboratory shall be informed if samples originate from a vaccinated flock and thus a differentiation test need to be done.

**Q:** Are reference genomes of vaccine strains available?
**A:** These may not be publicly available but can be requested from the vaccine producer. We ordered the vaccine strain and produced the sequence ourselves. However, we are not allowed to share the sequence data and can only apply them for internal use.

# 3 Evaluation of the workshop

## 3.1 Introduction

At the end of the workshop the participants were sent a link to an evaluation form, asking them for their opinion by answering nine questions (see Appendix 3). For several questions participants were asked to give a score from 1 to 5. These scores represent: very poor (1), poor (2), fair (3), good (4) and very good (5). In addition, it was possible to add comments. Two questions were open questions, in which the participants were asked to give their opinion.

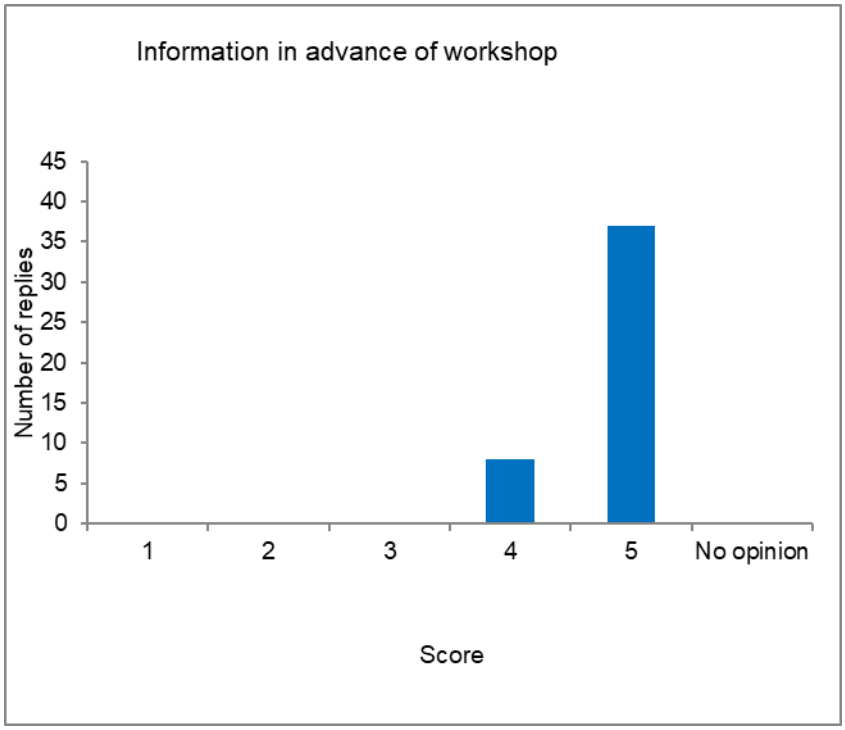
While the evaluation form was sent to all participants, the staff members of the EURL-Salmonella were excluded from the evaluation, making a total of 85 forms sent. 45 participants completed the evaluation form, a response rate of 53%.

In section 3.2 the scores for each question are presented and a summary of the remarks is given.

## 3.2 Results evaluation

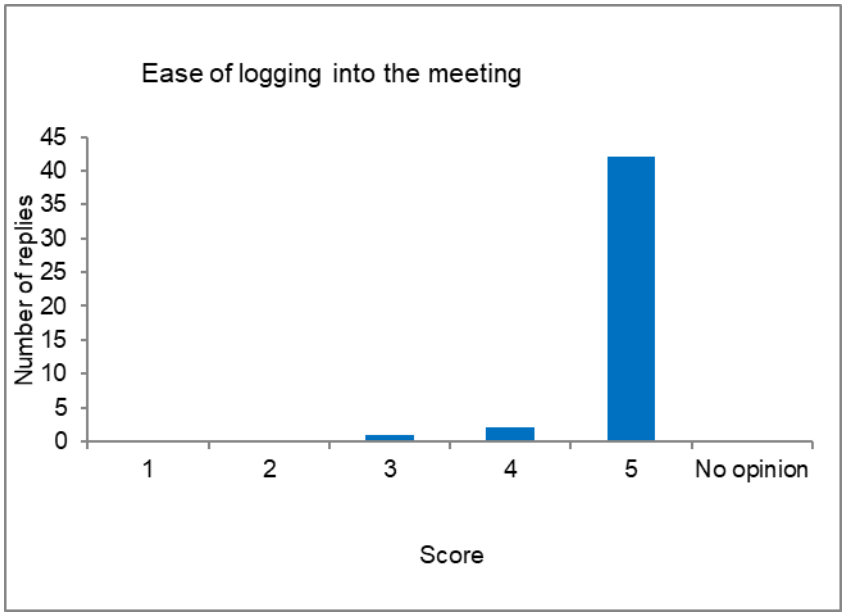
*1. What is your opinion on the information given in advance of the workshop?*
Figure 3.1 shows that the majority of respondents scored the information given in advance of the workshop as very good (score 5).

*Figure 3.1 Scores for question 1 'Opinion on information given in advance of the workshop'*



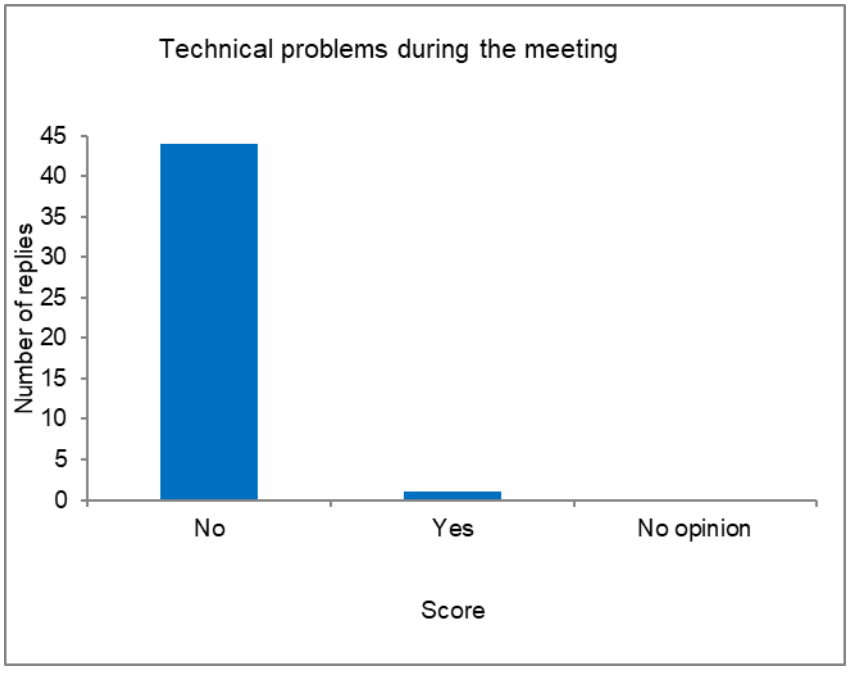
*2. What is your opinion on the ease of logging into the meeting?*
Nearly all participants found it easy to log into the online meeting (see Figure 3.2).

*Figure 3.2 Scores for question 2 'Opinion on the ease of logging into the meeting'*




*3. Did you face any technical problems during the meeting?*
Only one respondent reported a technical problem during the meeting (see Figure 3.3), indicating poor connection.

*Figure 3.3 Replies to question 3 'Did you face any technical problems during the meeting?'*



*4. What is your opinion on the length of the meeting and the number of breaks?*
40 out of the 45 respondents considered the length of the meeting to be fine (Figure 3.4a) and 44 respondents found there were enough breaks (Figure 3.4b). The following remarks were made: 'The meeting could have been a little longer, e.g. 30 minutes or 1-2 presentations. However, by doing so a third break would be necessary'; 'For an online meeting it was too long'.

*Figure 3.4a Replies to question 4a 'What is your opinion on the length of the meeting?'*

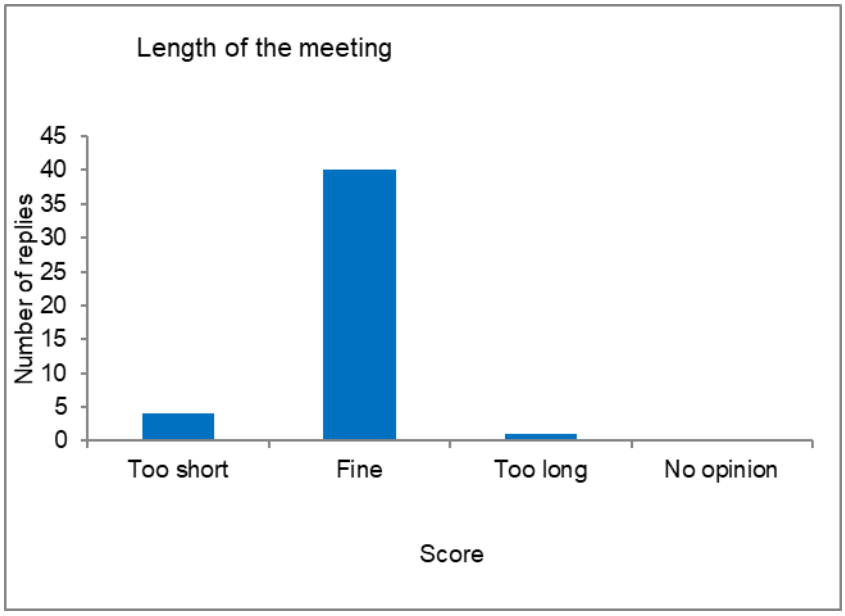
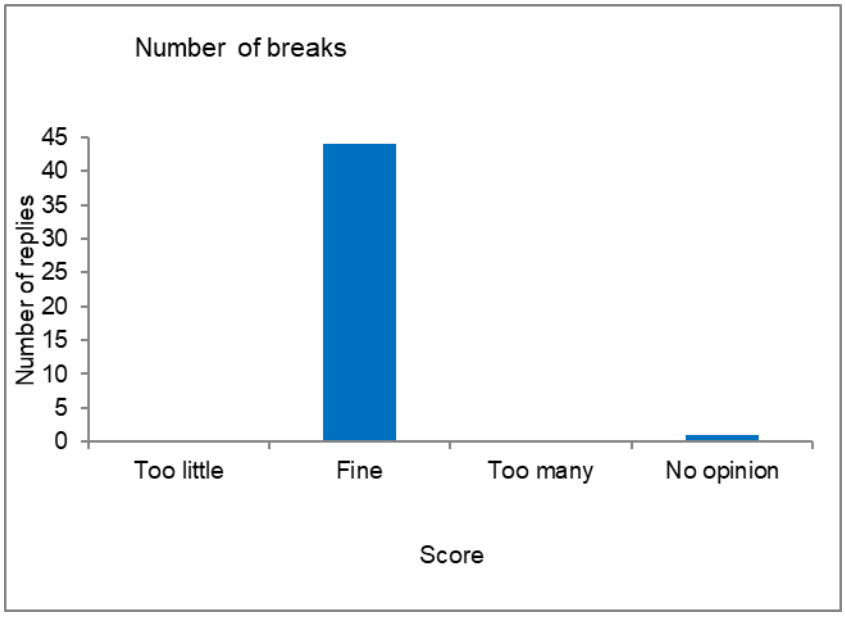
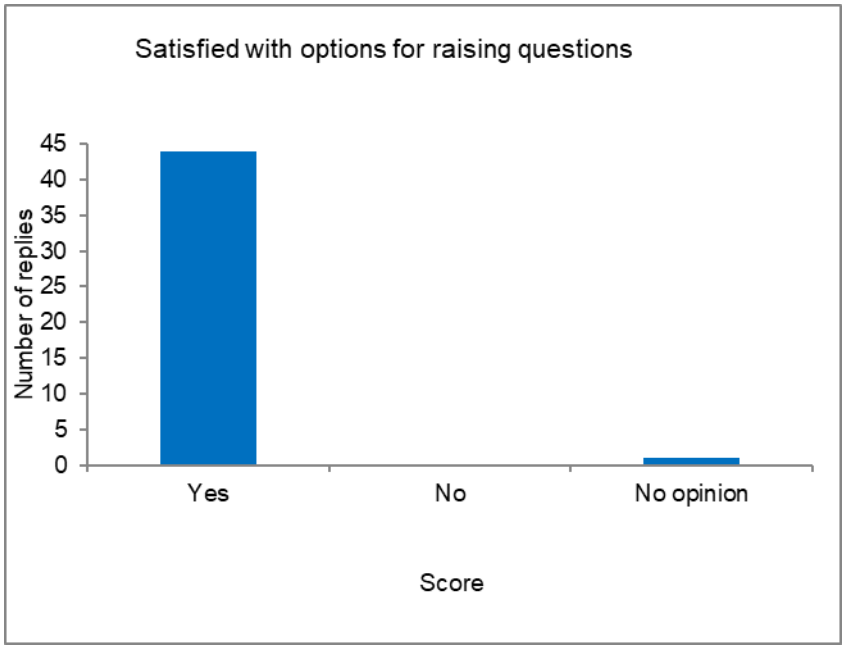



*Figure 3.4b Replies to question 4b 'What is your opinion on the number of breaks?'*



*5. Were you satisfied with the options for raising questions during the meeting (chat function; discussion time at the end of a presentation and at the end of a session)?*
44 of the 45 respondents were satisfied with the options for raising questions, one respondent had no opinion (Figure 3.5).

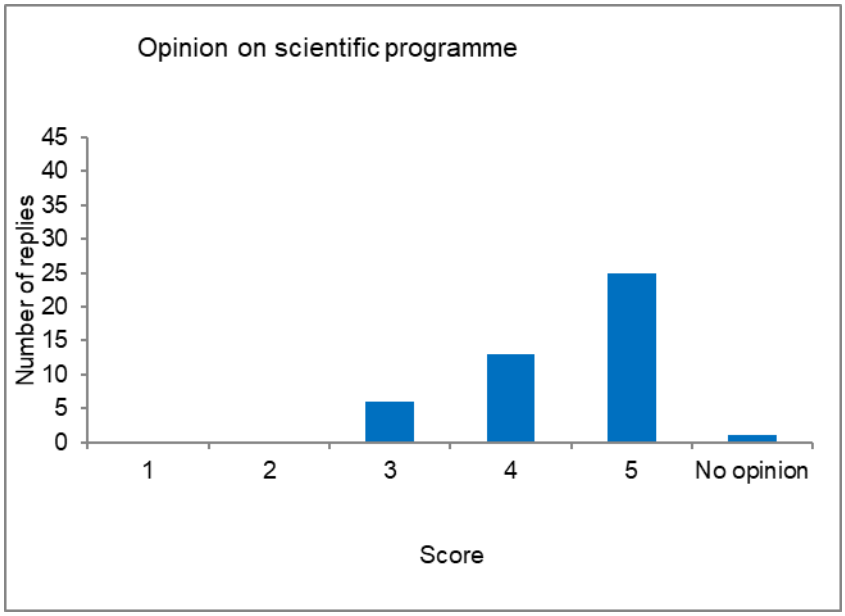
*Figure 3.5 Scores for question 5 'Were you satisfied with the options for raising questions during the meeting?'*




*6. What is your opinion on the scientific programme of the workshop?*
The majority of respondents were satisfied with the workshop's scientific programme; 38 of the 45 scores were good (score 4) to very good (score 5), see Figure 3.6. The following remarks were made:

- 'Add more scientific presentations.' (2x)
- 'I prefer also some news from *Salmonella* point of view. Info about preparing, transportation, evaluation of PT is almost the same every day.'
- 'It is surely useful to share the PT results but scientifically not so interesting.'
- 'Interesting information and updates.'

*Figure 3.6 Scores for question 6 'What is your opinion on the scientific programme of the workshop?'*

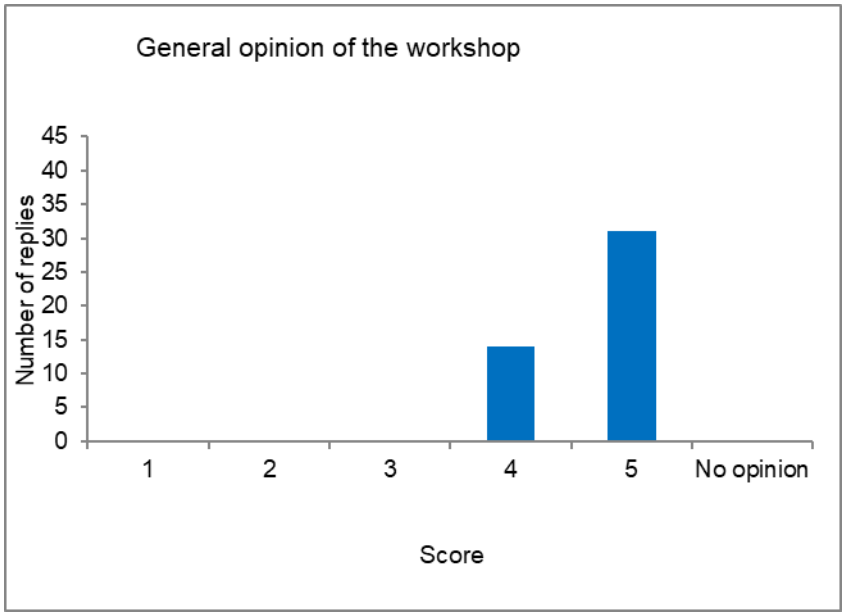



*7. Are there specific presentations you want to comment on, or did you miss information on certain subjects?*
This was an open question and several participants responded 'no'. Remarks made were:

- 'Information on shellfish.'
- 'I prefer also some news from *Salmonella* point of view, e.g. new methods, new source of dissemination.'
- 'Maybe some information from EFSA/DG Sante about the *Salmonella* situation in general.'
- 'Everything was great.'
- 'Liked the one on tomatoes very much and the one on new WGS legislation.'
- 'At the same time, our lab was undergoing an accreditation audit, so I was only able to follow the meeting in part. It was a pity, but the presentations I did catch were really interesting. Many thanks to the organizers!'

*8. What is your general opinion of the workshop?*
All respondents indicated that the workshop as a whole had been good (score 4) or very good (score 5), see Figure 3.7.

*Figure 3.7 Scores for question 8 'What is your general opinion of the workshop?'*




*9. Do you have any remarks or suggestions which we can use for future workshops?*

This was another open question, and the following responses were given:

- 'It would be nice to hear about relevant research projects once in a while.' (3x)
- 'I would be happy to have more content that is relevant to veterinary clinical microbiology.'
- 'I prefer the workshop to be on site, because you have more time for discussing problems.' (2x)
- 'I miss the networking during online meetings. Onsite meetings are better for networking, and a lot of programme topics can be discussed.' (2x)
- 'May I suggest that a Certificate of Attendance/Participation is sent to those attending (especially online) so as to have records of participation by respective NRL representative.'
- 'Considering the importance and growing need for improving laboratory capacities, the organisation of a practical training in the laboratory would be very welcome. This training could be carried out in the form of a combined workshop, with the participation of several laboratories, especially those in the development phase of molecular methods. Such an activity would significantly contribute to increasing the quality of laboratory work, exchanging experiences between teams and improving the implementation of contemporary standards.'
- 'I have no particular suggestions I think it is already very well structured and interesting. Thank you.' (2x)

## 3.3 Discussion and conclusions of the evaluation

In general, the participants were satisfied with the technical aspects of the workshop, like the information given in advance, the ease of login, the duration of the meeting and the number of breaks. For the latter two, however, mixed feelings were reported ('too long'/'too short'). Additionally, the scientific programme as well as the workshop as a whole were scored well by the majority of participants. However, some suggestions for further improvement were given, for example including more presentations about *Salmonella* research projects.
Similar to earlier workshops, several participants indicated to prefer onsite workshops over online ones. EURL-*Salmonella* agrees with this, but due to financial constraints it is only possible to organise an onsite/hybrid workshop every other year.

# Acknowledgements

The author would like to thank the EURL-*Salmonella* team for their valuable input for this workshop: Noël Peters-Dirker, Robin Diddens, Wilma Jacobs-Reitsma and Irene Pol-Hofstad for their help and (technical) support with organising the workshop, their scientific input and critical views on the programme, for giving presentations, arranging the on-line group picture and managing the information on the EURL-*Salmonella* website.

Of course, the author also wants to thank all other colleagues who made valuable contributions to the workshop by giving interesting presentations and/or providing input in the discussions. Without their contributions the workshop could not have been such a success.

Thank you all so much!

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# List of abbreviations

| | |
|---|---|
| A | Answer |
| BPW | buffered peptone water |
| CEN | European Committee for Standardization |
| CEN/TC463 | European Committee for Standardization, Technical committee 463 – Microbiology of the food chain |
| cfu | colony forming units |
| cg/wgMLST | core genome/whole genome multi-locus sequence typing |
| DG SANTE | Directorate-General for Health and Food Safety |
| EC | European Commission |
| ECDC | European Centre for Disease Prevention and Control |
| EEA | European Economic Area |
| EFSA | European Food Safety Authority |
| EFTA | European Free Trade Association |
| EQA | External quality assessment |
| EU | European Union |
| EURL | European Union Reference Laboratory |
| FDIS | Final Draft International Standard |
| HaDEA | European Health and Digital Executive Agency |
| HACCP | Hazard Analysis and Critical Control Points |
| ILS | Interlaboratory study |
| ISO | International Organization for Standardization |
| ISO/TC34/SC9 | International Organization for Standardization, Technical Committee 34 on Food Products, Sub-committee 9 – Microbiology of the food chain |
| $LOD_{50}$ | Level of detection for which 50% of tests give a positive result |
| MS | Member state |
| MSRV | Modified semi-solid Rapaport-Vassiliadis (agar) |
| NGS | Next Generation Sequencing |
| NRL | National Reference Laboratory |
| PCR | Polymerase chain reaction |
| PH | Public health |
| FWDB | Food- and Waterborne Disease Bacteria |
| PPS | Primary production stage |
| PT | Proficiency Test |
| Q | Question |
| RIVM | National Institute for Public Health and the Environment |
| ROA | Rapid outbreak assessment |
| SE | *Salmonella* Enteritidis |
| SNP | Single nucleotide polymorphism |
| SNV | Single nucleotide variant |
| ST | Sequence type |
| STm | *Salmonella* Typhimurium |
| TC | Technical Committee |
| WG | Working group |
| WGS | Whole genome sequencing |
| XLD | Xylose lysine deoxycholate (agar) |
| XLT4 | Xylose lysine tergitol 4 (agar) |

# Appendix 1 Participants

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Gordan Kompes
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CYPRUS
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Laetitia Bonifait
Pascal Garry
Cécile Philippe

GERMANY
Jennie Fischer
Marina Lamparter
Istvan Szabo

GREECE
Nikki Mouttotou
Thomas Papantonis
Aphrodite Smpiraki
Eleni Valkanou

HUNGARY
Henriett Deményné Boros
Andrea Váriné

ICELAND
Pall Steinthorsson

IRELAND
William Byrne
Montserrat Gutiérrez

ITALY
Lisa Barco
Laura Bortolami
Cristina Saccardin

KOSOVO
Besart Jashari

LATVIA
Jelena Avsejenko
Madara Streikisa

LITHUANIA
Tatjana Kutyriova
Ceslova Butrimaite Ambroceviciene

LUXEMBOURG
Lena De Baets
Catarina Martins
Catherine Ragimbeau

MALTA
Renato Zerafa

NETHERLANDS
Maren Lanzl (guest speaker)

NORWAY
Bjarne Bergsjø
Simen Nørstebø
Gro Skøien Johannessen
Julia Storesund

POLAND
Inga Bona
Tomasz Grenda
Elzbieta Mackiw
Kinga Wieczorek

PORTUGAL
Maria Barahona
Patricia Themudo

REPUBLIC OF MOLDOVA
Tatiana Bezhenari
Luca Corina
Margarita Dociu
Oxana Groza

REPUBLIC OF NORTH MACEDONIA
Mirko Prodanov

ROMANIA
Oana Elena Barbu
Veronica Ciupescu
Larisa Monica Tudor

SERBIA
No participants

SLOVAK REPUBLIC
Andrea Mojzisova

SLOVENIA
Jasna Micunovic

SPAIN
Cristina de Frutos
Irene Suárez Fernández
Iria Uhía

SWEDEN
Jenny Eriksson
Erik Eriksson

SWITZERLAND
Jule Horlbog
Ezgi Akdesir

# Appendix 2 Programme of the 30th EURL-*Salmonella* workshop; 20 May 2025 – Online

| | | |
|---|---|---|
| 09:30 - 10:00 | Opening and introduction | Kirsten Mooijman EURL-*Salmonella* |
| 10:00 - 10:30 | Review of designation of EURL-*Salmonella* and further steps on WGS in foodborne outbreak investigations | Kris de Smet & Hilde Loonen EC DG Sante |
| 10:30 - 11:00 | Results EURL-*Salmonella* combined Proficiency Test – Interlaboratory study PPS-FOOD 2024 - Detection of *Salmonella* in fabric swabs | Irene Pol-Hofstad EURL-*Salmonella* |
| *11:00 - 11:15* | *Break* | |
| 11:15 - 11:45 | Results EURL-*Salmonella* combined Proficiency Test FOOD-FEED 2025 - Detection of *Salmonella* in flaxseed | Robin Diddens EURL-*Salmonella* |
| 11:45 - 12:15 | Results EURL-*Salmonella* Proficiency Test Typing 2024 – serotyping and cluster analysis | Wilma Jacobs-Reitsma EURL-*Salmonella* |
| *12:15 – 13:15* | *Break* | |
| 13:15 – 13:45 | Introduction to the EURL Public Health for food- and waterborne bacteria | Maren Lanzl RIVM |
| 13:45 - 14:00 | *Salmonella* in/on tomatoes | Kirsten Mooijman EURL-*Salmonella* |
| 14:00 – 14:30 | Joint EFSA-ECDC Rapid Outbreak Assessments on multi-country foodborne outbreaks linked to *Salmonella* in vegetables | Eleonora Sarno EFSA |
| 14:30 – 15:00 | Work programme EURL-*Salmonella* second half 2025, first half 2026<br>Concluding remarks workshop and closure | Kirsten Mooijman EURL-*Salmonella* |

---------- End of workshop----------

# Appendix 3 Workshop evaluation form

**Evaluation of the 30th EURL-*Salmonella* workshop, 20 May 2025 - online**

We would highly appreciate if you could give us your opinion on the 30th EURL-*Salmonella* workshop, organised as online meeting on 20 May 2025. Thank you very much in advance for completing this questionnaire by 10 June 2025 at the latest.

1. What is your opinion on the information given in advance of the workshop?

| 1 (Very poor) | 2 (poor) | 3 (fair) | 4 (good) | 5 (very good) | No opinion |
|---|---|---|---|---|---|
| | | | | | |

Remarks:_____

2. What is your opinion on the ease of logging into the meeting?

| 1 (Very poor) | 2 (poor) | 3 (fair) | 4 (good) | 5 (very good) | No opinion |
|---|---|---|---|---|---|
| | | | | | |

Remarks:_____

3. Did you face any technical problems during the meeting?
   - ☐ No
   - ☐ Yes, I encountered the following problems: _____

Remarks:_____

4. What is your opinion on the length of the meeting and the number of breaks?
   a. Length meeting:
   - ☐ Too short
   - ☐ Fine
   - ☐ Too long

   b. Number of breaks:
   - ☐ Too little
   - ☐ Fine
   - ☐ Too many

Remarks:_____

5. Were you satisfied with the options for raising questions during the meeting (chat function; discussion time at the end of a presentation and at the end of a session)?
   - ☐ Yes
   - ☐ No opinion
   - ☐ No, but I have a suggestion for improvement _____

Remarks:_____

6. What is your opinion on the scientific programme of the workshop?

| 1 (Very poor) | 2 (poor) | 3 (fair) | 4 (good) | 5 (very good) | No opinion |
|---|---|---|---|---|---|
| | | | | | |

Remarks:_____

7. Are there specific presentations you want to comment on, or did you miss information on certain subjects?

| |
|---|
| |

8. What is your general opinion of the workshop?

| 1 (Very poor) | 2 (poor) | 3 (fair) | 4 (good) | 5 (very good) | No opinion |
|---|---|---|---|---|---|
| | | | | | |

Remarks:_____

9. Do you have any remarks or suggestions that we can use for future workshops?

| |
|---|
| |

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