

Summary of Results

External Quality Assessment of Food Microbiology

Shellfish Scheme

Distribution Number: SF079

Sample Numbers: SF0166, SF0167

Distribution Date:	March 2025
Results Due:	11 April 2025
Report Date:	16 May 2025
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This scheme provides external quality assessment samples for laboratories that examine live bivalve mollusc flesh (and intervalvular fluid) for the enumeration of *Escherichia coli*. This scheme is based upon the use of ISO 16649-3, Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of β -glucuronidase-positive *E. coli* Part 3: Most probable number technique using 5-bromo-4-chloro-3-indolyl- β -D-glucuronide. This is the European Union reference method for enumeration of *E. coli* in live bivalve molluscs. However, the scheme may also be appropriate for other methods used in laboratories for the enumeration of *E. coli* in bivalve molluscan shellfish flesh (and intervalvular fluid) including those approved by the EU's Standing Committee on Food Chain and Animal Health (SCoFCAH) for use in compliance with EU Regulations.

Protocols for the application for selected methods are available for download at

<https://www.cefas.co.uk/centres-of-excellence/seafood-safety>

For further information on the scheme please refer to:

Scheme Guide: <https://www.feptu.org.uk/schemes/scheme-guide/>

For more specific information about results assessments, scoring systems, statistics, and guidance on analysing your results for the proficiency testing samples please refer to:

Guide to Scoring system and statistics: <https://www.feptu.org.uk/schemes/scoring/>

FEPTU Quality Control: To demonstrate stability of the sample, a minimum of six LENTICULE® discs, selected randomly from a batch, are examined throughout the distribution period for *E. coli* enumeration and for *Salmonella* detection.

FEPTU results are determined using methods based on ISO methods and are included in the 'intended results' letters which provide guidance for participants regarding the assigned values.

Intended results letters are posted on the website immediately after every distribution; electronic notification of their availability is sent to all participants.

Refer to section 19.0 of the Scheme Guide if you have experienced difficulties with any of the examinations.

<https://www.feptu.org.uk/schemes/scheme-guide/>

All participants are reminded that reporting an incorrect or incomplete result or identification of pathogens from food samples could have serious public health implications. Similarly, the levels of micro-organisms reported in the sample may affect the subsequent outcome for the product.

Reporting an incorrect result for the *Escherichia coli* most probable number (MPN) may affect the classification of the harvesting area and the subsequent treatment of the live bivalve molluscs.

Incorrect reporting of results for *Salmonella* may affect the subsequent outcome for the product and could have serious public health implications

Participants are reminded that the purpose of scoring is to draw attention to incorrect or outlying results. Results as summarised in the performance assessment sheet included in this report, provide a more effective indication of on-going problems with food microbiology examinations.

Please contact FEPTU or Cefas staff for advice and information:

Repeat samples	Carmen Gomes or Kermin Daruwalla	Tel: +44 (0)20 8327 7119
Data Analysis	Nita Patel	Fax:
Microbiological advice	Nita Patel or Zak Prior	Email: foodeqa@ukhsa.gov.uk
General comments and complaints	Nita Patel or Zak Prior	FEPTU's website
Scheme consultants	Louise Stockley	Tel: +44 (0)1305 206 644
Scheme Co-ordinator	Nita Patel	Email: louise.stockley@cefas.co.uk

Accreditation: UKHSA Food EQA Scheme for Shellfish is accredited by the United Kingdom Accreditation Service (UKAS) to ISO/IEC 17043:2010.



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Sample: SF0166

Description: Raw shellfish from a new shellfish bed

Contents:

Salmonella Brandenburg 4,[5],12;I,V;E,N,Z₁₅ (3.6x10² per disc) (wild strain), *Acinetobacter lwoffii* (26 per disc) (wild strain), *Citrobacter freundii* (1.5x10³) (wild strain), *Enterococcus faecalis* (53) (wild strain) - see comment on page 10 of this report

All levels are presented as colony forming units (cfu) per ml reconstituted sample unless otherwise stated

* MPN per 100ml reconstituted sample

Expected Results:

Examination	Expected Result	Your Result		
		Replicate 1	Replicate 2	Score
<i>E.coli</i> ~MPN~	<18 per 100g			N/A
Comments:				
<i>Salmonella</i> spp.	Detected in 25g			
Comments:				

E.coli MPN values reported are summarised in Fig.1

<i>E. coli</i>	
Total participants reporting duplicate results for <i>E.coli</i> MPN	56
Participants reporting a single MPN result only	1
Total participants reporting correctly the absence of <i>E.coli</i>	19
Total participants reporting incorrectly the presence of <i>E.coli</i>	37

<i>Salmonella</i> spp.	
Total participants reporting for <i>Salmonella</i> spp.	46
Total participants reporting the presence of <i>Salmonella</i> spp.	44 (96%)

Total sent sample	62
Non-returns	1
Not examined	4

Sample: SF0167

Description: Raw shellfish from a new shellfish bed

Contents:

* *Escherichia coli* ($3.1 \times 10^2 - 7.8 \times 10^2$) (wild strain), *Salmonella* Infantis 6,7,14;r;1,5 (2.3×10^2 per disc) (wild strain),
Klebsiella pneumoniae (19) (wild strain), *Staphylococcus epidermidis* (4) (wild strain)

All levels are presented as colony forming units (cfu) per ml reconstituted sample unless otherwise stated

* MPN per 100ml reconstituted sample

Expected Results:

Examination	Expected Result	Your Result		
		Replicate 1	Replicate 2	Score
<i>E.coli</i> (MPN)	$1.0 \times 10^2 - 2.4 \times 10^3$ per 100g			Not Examined
		Comments:		
<i>Salmonella</i> spp.	Detected in 25g			
		Comments:		

E.coli MPN values reported are summarised in Fig.2

<i>E. coli</i>	
Total participants reporting duplicate results for <i>E.coli</i> MPN	57
Participants reporting a single MPN result only	1
Participants reporting MPN results within the expected range for both replicates	54
Participants reporting MPN results outside expected range for both replicates	3
Participants reporting MPN result outside expected range for one replicate only	0
Participants reporting tube combination inconsistent with MPN reported	11
Participants reporting censored values for one replicate	0
Participants reporting censored values for both replicates	0
Assigned value (participants' median MPN result)	4.9×10^2 per 100 g
Participants' mean MPN result	6.3×10^2 per 100 g
Standard deviation (SD) of participants' results	0.50 log ₁₀ unit per 100g
FEPTU QC median MPN result	7.4×10^2 per 100 g

<i>Salmonella</i> spp.	
Total participants reporting for <i>Salmonella</i> spp.	46
Total participants reporting the presence of <i>Salmonella</i> spp.	45 (98%)

Total sent sample	62
Non-returns	1
Not examined	3

Performance Assessment Sheet

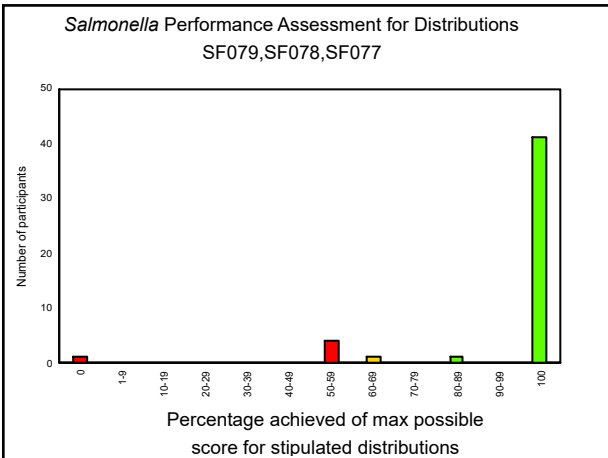
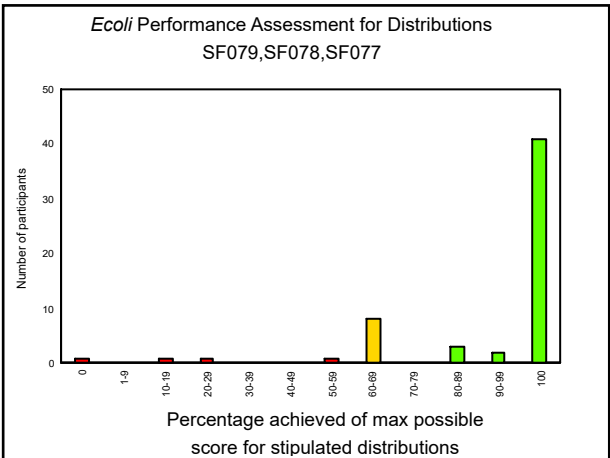
Participants are reminded that to take advantage of the performance assessment overtime tool provided in the reports they need to take part in more than one distribution a year.

Performance assessments are designed to identify laboratories with on-going problems with their examinations and are undertaken after every distribution. Scores are allocated to results reported for every sample to help assess participants' performance.

Cumulative scores are calculated for every participant, for all examination types, for the current and previous two distributions. Participants' cumulative scores for each of the examination types are compared with the maximum possible scores after every distribution.

Your laboratory performed 6 examinations for the last 3 distributions.

Distribution	Sample	<i>E.coli</i> score	Your % per distribution	<i>Salmonella</i> sp. score	Your % per distribution
SF079	SF0166				
	SF0167				
SF078	SF0164				
	SF0165				
SF077	SF0162				
	SF0163				
Total maximum possible score					



Performance Assessment Comment:

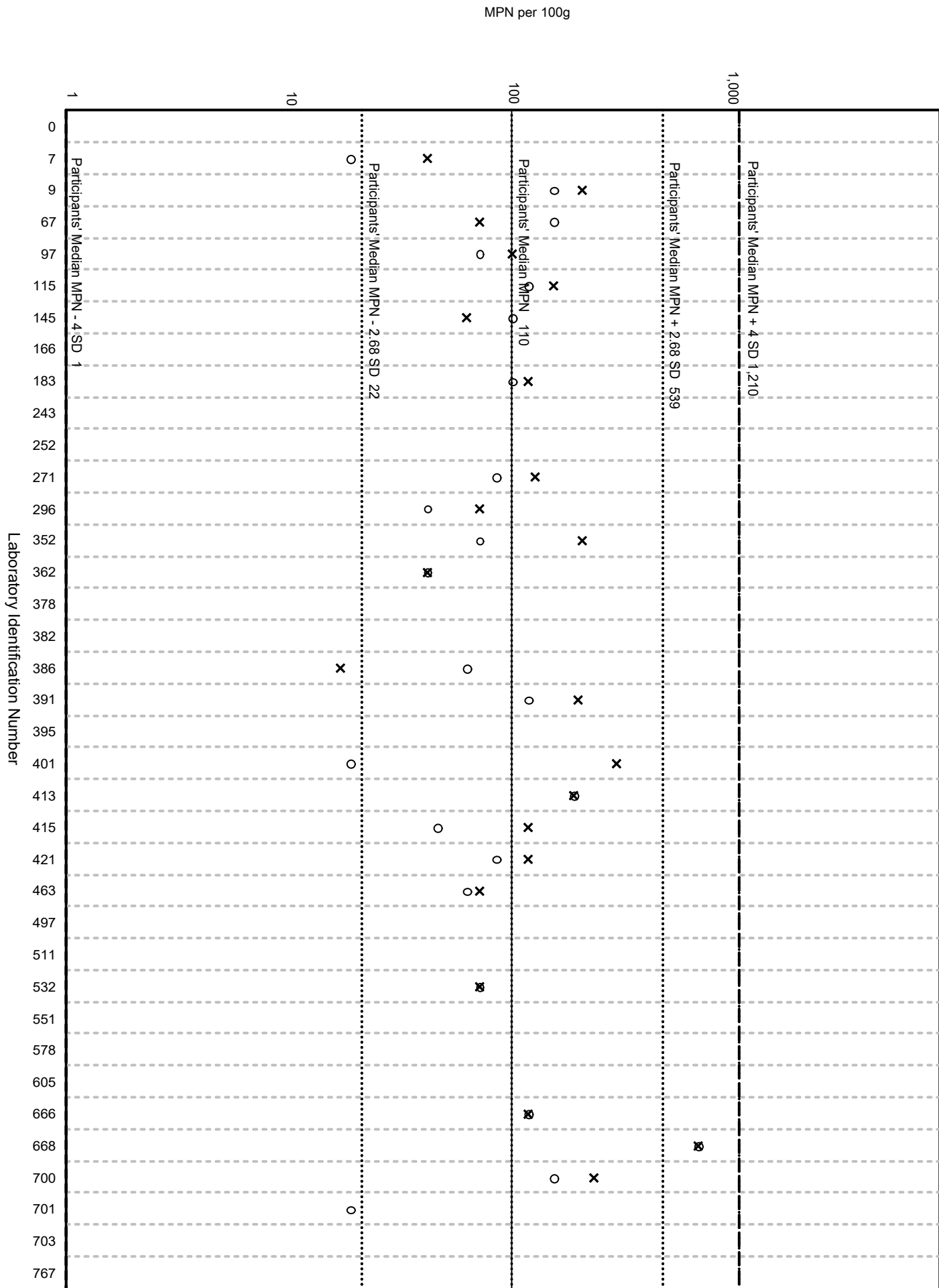
Laboratories that achieve less than 70% of the maximum possible score are likely to be experiencing significant problems with their examinations and are advised to

- a) refer to the relevant sample reports for specific comments
- b) refer to the website guidance documents:
[Scheme Guide - FEPTU](#) and [Scoring - FEPTU](#)
- c) contact the organisers for advice.

10,000

Fig. 1: SF0166 MPN Results

Key: X SF0166 Replicate 1 O SF0166 Replicate 2



10,000

Fig. 1 (cont'd): SF0166 MPN Results

Key: X SF0166 Replicate 1 O SF0166 Replicate 2

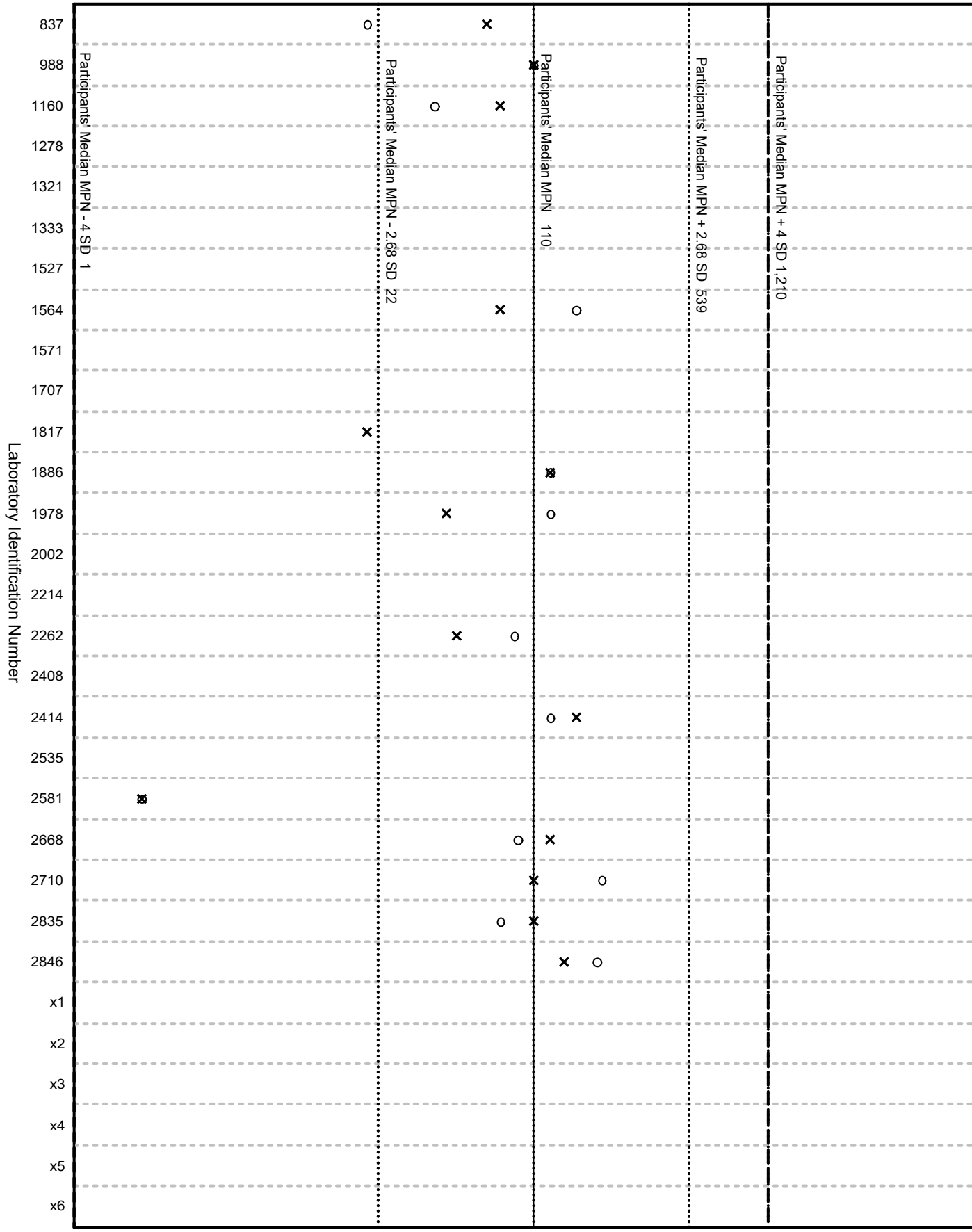
MPN per 100g

1,000

100

10

1

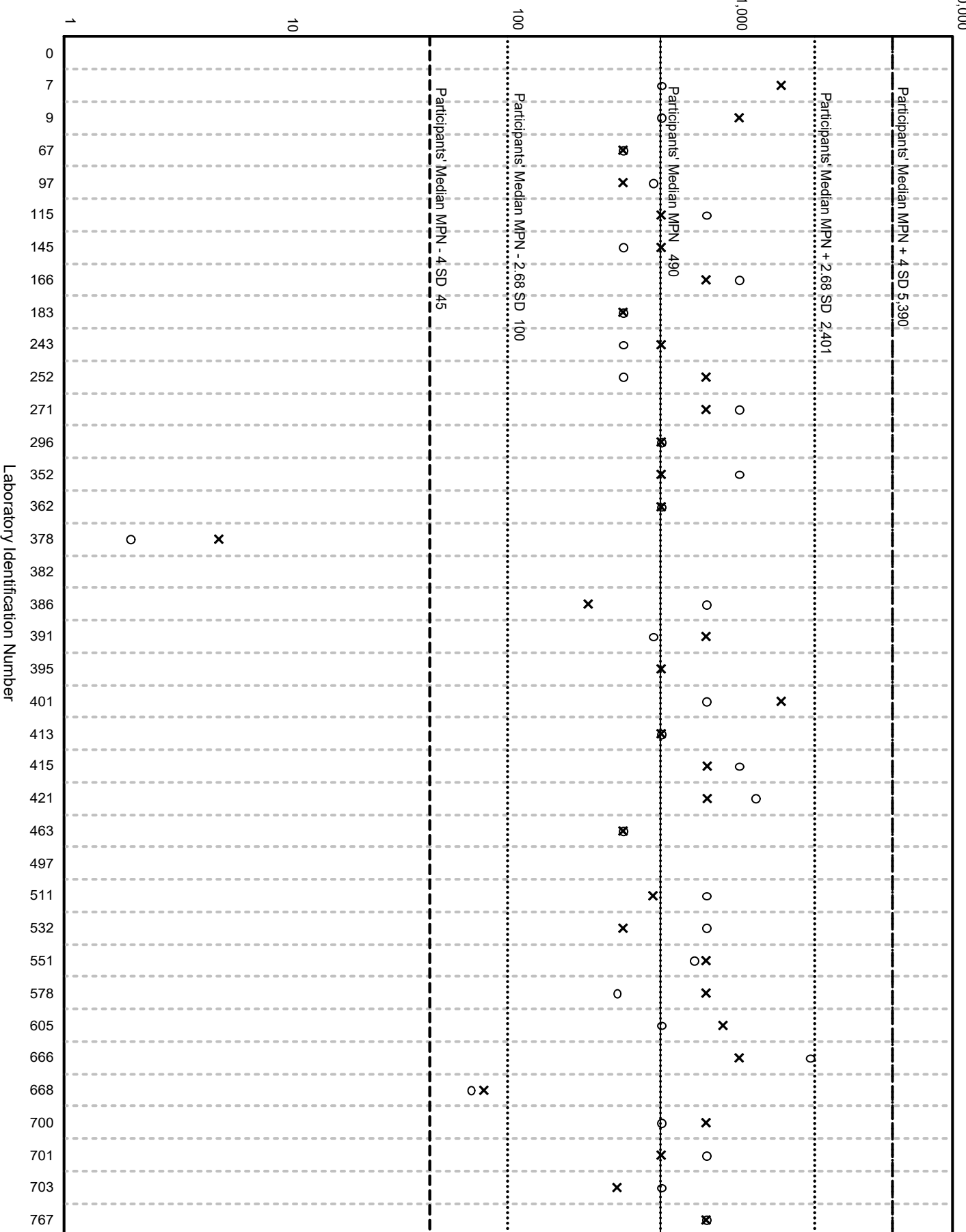


10,000

Fig. 2: SF0167 MPN Results

Key: X SF0167 Replicate 1 O SF0167 Replicate 2

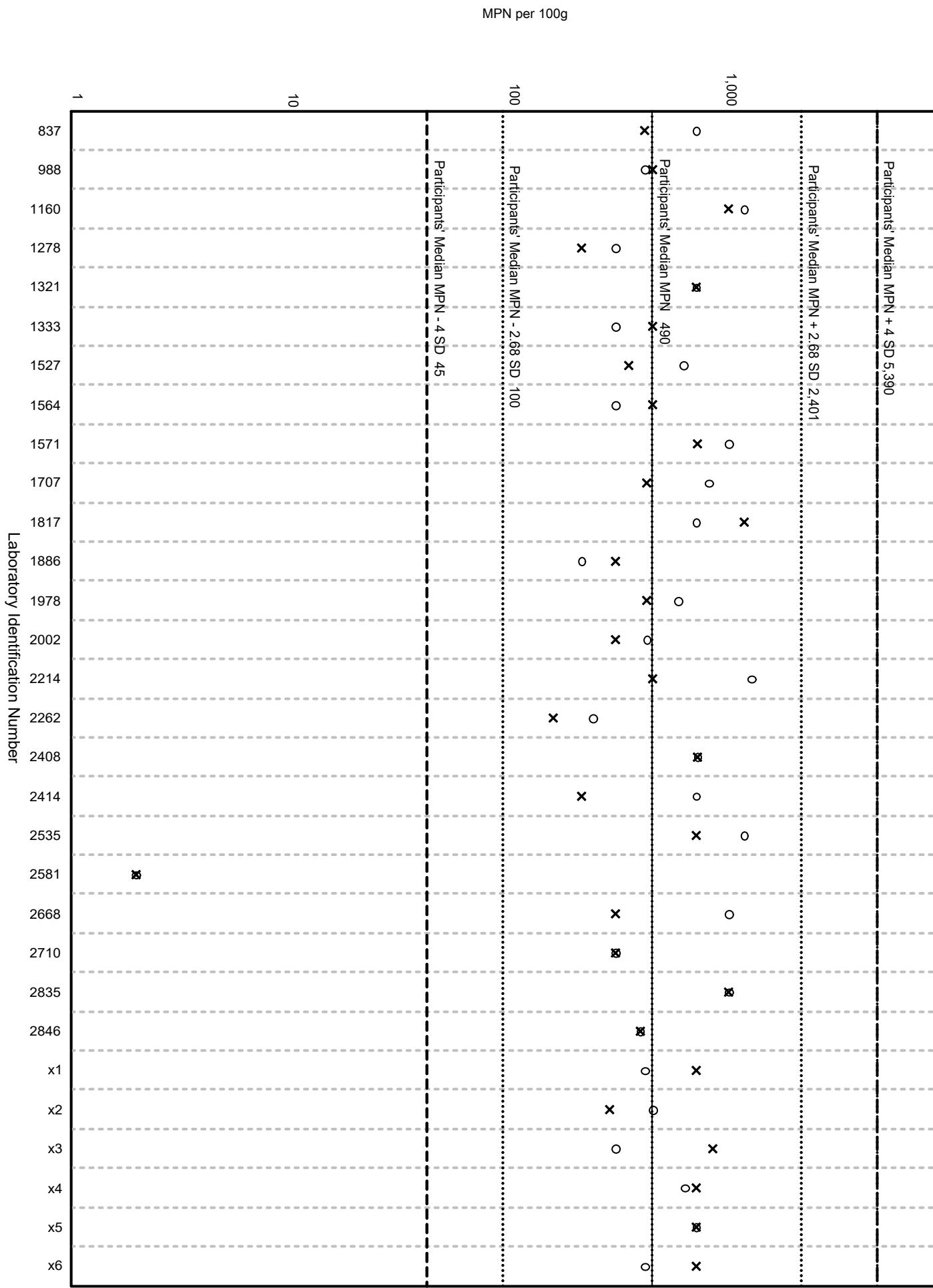
MPN per 100g



10,000

Fig. 2 (cont'd): SF0167 MPN Results

Key: X SF0167 Replicate 1 O SF0167 Replicate 2

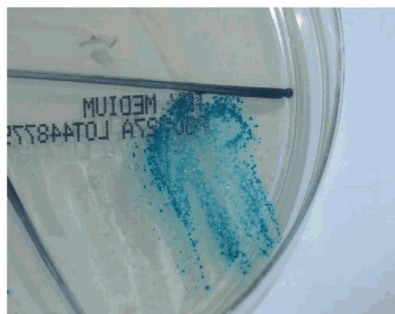


Sample specific comment

We apologise for any inconvenience caused by the delay in closing this distribution (original date 11 April 2025 and closed 12 May 25) and the subsequent publishing of this scheme report, this was due to an extension granted for some countries where there were shipment issues. FEPTU reference number: FPD25-1.

SF0166 – *Escherichia coli*

36/58 (62%) of the laboratories reported a false positive result for the *E. coli* examination when the sample did not contain this organism. The sample contained a strain of *Salmonella* Brandenburg and in the FEPTU laboratory this strain produced acid in the most probable number method. These positive tubes when sub-cultured onto tryptone bile glucuronide medium (TBX) produced tiny blue colonies (image below).



ISO 16649-3:2015 Microbiology of the food chain — Horizontal method for the enumeration of beta-glucuronidase positive *Escherichia coli* — Part 3: Detection and most probable number technique using 5-bromo-4-chloro-3-indolyl- β -D-glucuronide states the below:

9.1.5 Examination of the plates

After the specified period of incubation (9.1.4), examine the plates for the presence of colonies showing any shade of dark or light blue or blue green, indicating the presence of β -glucuronidase positive *E. coli*.

9.1.6 Interpretation

Consider the result as being positive for the presence of β -glucuronidase positive *E. coli* if the plate obtained in 9.1.5 showed the presence of blue or blue green colonies.

It is important that laboratories understand the limitation of method/media used and apply caution when interpreting test results and include further confirmation testing if required.

This examination has not been scored due to this discrepancy and below average performance. Please note the system automatically generates the graphs as shown on page 6 and 7 of this report and therefore should be analysed with caution.

General comments:

Laboratories designated as an Official Labs (OL) within their country must report their MPN results in accordance with ISO 7218:2007/Amd.1:2013. All dilutions examined must be reported; therefore 2 points have been deducted for each replica when this has not been done.

Trend analysis:

Plotting your PT results over a period of time can help to identify potential problems. If you need the latest file, please email us on foodeqa@ukhsa.gov.uk.

If you do not return a result for a distribution, you will not be able to view all the participants' results data in your individualised report. Please contact us if you require this information on foodeqa@ukhsa.gov.uk.

New website

We are pleased to announce the launch of our new website: <https://www.feptu.org.uk/>. Please refer to this website to obtain the latest information for your proficiency testing.

Information of importance

To understand more about the proficiency testing schemes, please use the following links for information on:

1. Report format explained: [Annotated report](#)
2. Performance rating: [Performance-over-time](#) and [Scheme guide](#) (section 16.0)
3. Scoring and statistics used: [Scoring information and stats](#)
4. Homogeneity and stability: [Scheme guide](#) (section 9.0)
5. Complaints and appeal process: [Scheme guide](#) (section 20.0 and 21.0)

For further information about the operation of the service including confidentiality and terms of participation, please refer to the Scheme Guide: [Scheme guide](#)

End of report

