



Summary of Results

External Quality Assessment for Food Microbiology European Food Microbiology Legislation Scheme

Distribution Number: EFL43
Sample Numbers: EFL127, EFL128 & EFL129

Distribution Date:	January 2018
Results Due:	9 February 2018
Report Date:	28 February 2018
Samples prepared and quality control tested by:	Angela Appea Richard Borrill Thomas Harper Zak Prior Judith Spellar Aneta Stranc Lili Tsegaye
Data analysed by:	Manchari Rajkumar Nita Patel
Report compiled by:	Manchari Rajkumar Nita Patel
Authorised by:	Nita Patel

This report must not be reproduced without permission of the organisers.

Public Health England
Food and Environmental Proficiency Testing Unit (FEPTU)
61 Colindale Avenue
London
NW9 5EQ
Tel: +44 (0) 20 8327 7119
Fax: +44 (0) 20 8200 8264
Email: foodeqa@phe.gov.uk

This Scheme provides external quality assessment samples for laboratories that examine foods products in accordance with European legislation specified in Regulation (EC) 2073/2005 Microbiological Criteria for Foodstuffs associated with Regulation (EC) 852/2004 and subsequent amendments

If you require further information about the scheme please refer to:

Scheme Guide: <https://www.gov.uk/government/publications/food-and-water-proficiency-testing-schemes-scheme-guide>

Guide to Scoring:

<https://www.gov.uk/government/publications/food-and-water-proficiency-testing-schemes-scoring-systems-and-statistics>

FEPTU Quality Control:

To demonstrate stability of the sample, a minimum of ten LENTICULE® discs, selected randomly from a batch, are examined throughout the distribution period, either for enumeration or for pathogen 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.

If you experience difficulties with any of the examinations please refer to section 17.0 of the Scheme Guide

<https://www.gov.uk/government/publications/food-and-water-proficiency-testing-schemes-scheme-guide>

All participants are reminded that reporting an incorrect or incomplete 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.

Participants are reminded that the purpose of scoring is to draw attention to incorrect or outlying results. Participants who report outlying results for enumerations on single occasions only should not be alarmed, although they should still assess the reason(s) for the outlying result. The 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 staff for advice and information:

Repeat samples	Carmen Gomes or Kermin Daruwalla	Tel: +44 (0)20 8327 7119
Data analysis	Manchari Rajkumar or Nita Patel	Fax: +44 (0)20 8200 8264
Microbiological advice	Nita Patel or Zak Prior	E-mail: foodeqa@phe.gov.uk
General comments and complaints	Nita Patel or Zak Prior	FEPTU Website
Scheme Consultant	Melody Greenwood, Nicola Elviss and Caroline Willis	
Scheme Co-ordinator	Nita Patel	

Accreditation: PHE European Food Microbiology Legislation Scheme is accredited by the United Kingdom Accreditation Service (UKAS) to ISO/IEC 17043:2010



Total number of participants sent distribution EFL42	28
Number of laboratories not returning a result for EFL42	5
Number of laboratories not examining any samples in EFL42	2

Sample: EFL127

- Sample Details:** Beef tartare made with lemon juice and herbs, product placed on market during shelf-life.
- Sample Request:** Test to determine whether this sample complies with the relevant criteria stipulated in Commission Regulation (EC) No. 2073/2005 as amended
Applicable food categories 1.2 (1.3) and 1.4
- Sample Conclusion:** The batch does not comply with the Food Safety Criteria
- Contents:** *Salmonella* Crewe 11:z:1,5 45 per disc (wild strain)
Listeria monocytogenes 67 (wild strain)
Klebsiella pneumoniae 9.8 x 10³ (wild strain)
Serratia liquefaciens 2.9 x 10³ (wild strain)

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

Required Examinations: *Listeria monocytogenes* and *Salmonella* spp.

Examination 1- *Listeria monocytogenes*:

Examination	Expected Result	Your result	Your score
Applicable food category	1.2 or 1.3		
Name of examination	<i>Listeria monocytogenes</i>		
Stipulated method*	ISO 11290-2*		
Amount of sample examined	-		
No. of samples from a batch required for compliance	5		
Expected range	22 – 2.21 x 10 ²		
Limits for compliance	m=100; M=100; c=0		
Conclusion about this examination from result obtained	Your conclusion has been scored in relation to your reported result		

* The most recent edition of the standard should be used

Comments on Performance:

Number of participants correctly examining for <i>Listeria monocytogenes</i> as part of food category 1.2	15
Number of participants correctly examining for <i>Listeria monocytogenes</i> as part of food category 1.3*	4
Number of participants correctly using ISO 11290-2	17
Number of participants incorrectly using ISO 11290-1	1
Number of participants not stating method used	1

Number of participants not indicating that <i>Listeria monocytogenes</i> test is required for compliance	2
--	---

Assigned value (participants' median)	70 cfu g ⁻¹ (1.85 log ₁₀)
Uncertainty of assigned value ($U(X_{pt}) = \log_{10} \text{cfu g}^{-1}$)	0.07
No. of outlying counts	2 (2 low)
Participants mean	62 cfu g ⁻¹ (1.79 log ₁₀)
Standard deviation of participants results **	0.23 log ₁₀ cfu g ⁻¹
FEPTU QC median	67 cfu g ⁻¹ (1.83 log ₁₀)

*Examination specific comment

Four participants reported that food category 1.3 applies as the steak tartare with lemon juice would reduce the food product to pH ≤ 4.4 and the shelf-life was less than five days. As there was lack of information provided about the product details the testing against food category 1.3 have been accepted as correct.

Sample: EFL127

Examination 2- *Salmonella* spp.:

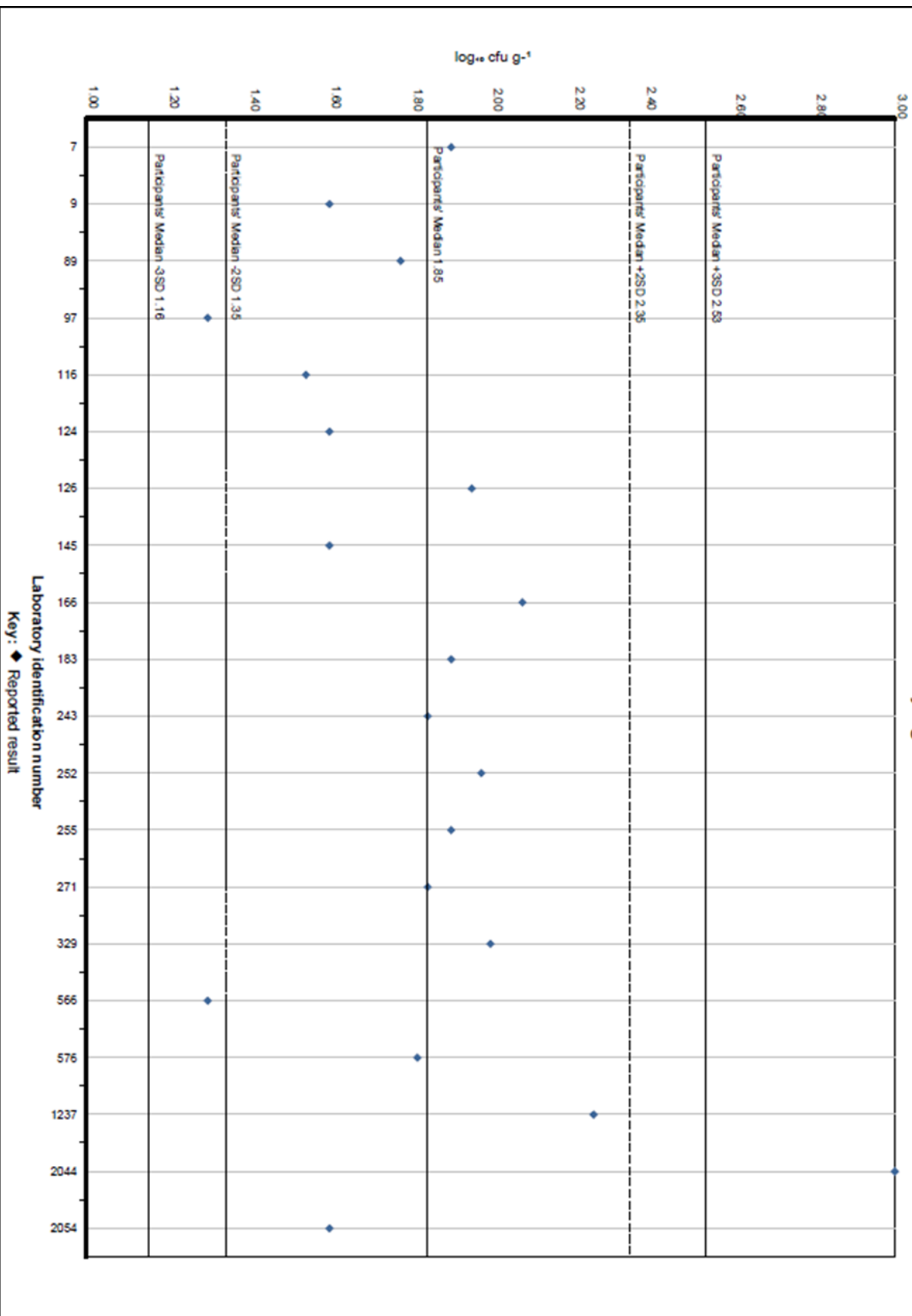
Examination	Expected Result	Your result	Your score
Applicable food category	1.4		
Name of examination	<i>Salmonella</i> spp.		
Stipulated method*	ISO 6579*		
Amount of sample examined	25g		
No. of samples from a batch required for compliance	5		
Expected range	Detected		
Limits for compliance	Absence in 25g; c=0		
Conclusion about this examination from result obtained	Your conclusion has been scored in relation to your reported result		
* The most recent edition of the standard should be used			

Comments on Performance:

Number of participants correctly reporting detected for <i>Salmonella</i> spp. as part of food category 1.4	18
Number of participants incorrectly reporting not detected for <i>Salmonella</i> spp. as part of food category 1.4	1
Number of participants correctly reporting detected for <i>Salmonella</i> spp. as part of incorrect food category 1.6	1
Number of participants correctly reporting detected for <i>Salmonella</i> spp. as part of incorrect food category 1.8	1
Number of participants correctly using ISO 6579	20
Number of participants not stating method used	1

	Your result	Your score
Overall batch conclusion		
Bonus score		

EFL127 - *Listeria monocytogenes* enumeration



Sample: EFL128

Sample Details: Premium raw chicken burger made from minced chicken and herbs from a local butcher, product placed on market during shelf-life.

Sample Request: Test to determine whether this sample complies with the relevant criteria stipulated in Commission Regulation (EC) No. 2073/2005 as amended.

Applicable food category 1.5

Sample Conclusion: The batch does not comply with the Food Safety Criteria

Contents: *Salmonella* Typhimurium 1,4,[5],12: i:1,2 4 per disc (wild strain)
Bacillus pumilus 3.4×10^4 (wild strain)
Escherichia coli 3.8×10^5 (wild strain)
Staphylococcus saprophyticus 4.7×10^5 (wild strain)

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

Required Examination: *Salmonella* spp.

Examination 1- *Salmonella* spp.:

Examination	Expected Result	Your result	Your score
Applicable food category	1.5		
Name of examination	<i>Salmonella</i> spp.		
Stipulated method*	ISO 6579*		
Amount of sample examined	25g		
No. of samples from a batch required for compliance	5		
Expected range	Detected		
Limits for compliance	Absence in 25g; c=0		
Conclusion about this examination from result obtained	Your conclusion has been scored in relation to your reported result		
* The most recent edition of the standard should be used			

Comments on Performance:

Number of participants correctly reporting detected for <i>Salmonella</i> spp. as part of food category 1.5	19
Number of participants incorrectly reporting not detected for <i>Salmonella</i> spp. as part of food category 1.5	1
Number of participants using correctly ISO 6579	19
Number of participants not stating method used	1
Number of participants not examining this sample for <i>Salmonella</i> spp.	1

	Your result	Your score
Overall batch conclusion		
Bonus score		

Sample: EFL129

Sample Details: Mechanically deboned minced turkey, sampled at the end of the manufacturing process.

Sample Request: Test to determine whether this sample complies with the relevant criteria stipulated in Commission Regulation (EC) No. 2073/2005 as amended

Applicable food category 2.1.7

Sample Conclusion: The batch does not comply with the Process Hygiene Criteria

Contents:
Escherichia coli 4.3×10^5 (wild strain)
Citrobacter freundii 8.0×10^2 (wild strain)
Pseudomonas fluorescens 3.3×10^4 (wild strain)
Staphylococcus capitis 9.5×10^5 (wild strain)

All levels are presented as colony forming units (cfu) per g/ml reconstituted sample

Required Examination: Aerobic colony count and *Escherichia coli*

Examination 1- Aerobic colony count:

Examination	Expected Result	Your result	Your score
Applicable food category	2.1.7		
Name of examination	Aerobic colony count		
Stipulated method*	ISO 4833*		
Amount of sample examined	-		
No. of samples from a batch required for compliance	5		
Expected range	$2.82 \times 10^5 - 2.82 \times 10^6$		
Limits for compliance	$m=5 \times 10^5$; $M=5 \times 10^6$; $c=2$		
Conclusion about this examination from result obtained	Your conclusion has been scored in relation to your reported result		

* The most recent edition of the standard should be used

Comments on Performance:

Number of participants correctly examining for Aerobic colony count as part of food category 2.1.7	17
Number of participants correctly examining for Aerobic colony count as part of incorrect food category 2.1.6	4
Number of participants correctly using ISO 4833-1	15
Number of participants correctly using ISO 4833-2	6

Assigned value (participants' median)	9.00×10^5 cfu g ⁻¹ (5.95 log ₁₀)
Uncertainty of assigned value ($U(X_{pt}) = \log_{10}$ cfu g ⁻¹)	0.04
No. of outlying counts	1 (1 low)
Participants mean	9.30×10^5 cfu g ⁻¹ (5.97 log ₁₀)
Standard deviation of participants results **	0.13 log ₁₀ cfu g ⁻¹
FEPTU QC median	1.10×10^6 cfu g ⁻¹ (6.04 log ₁₀)

** Robust S* based on median absolute deviation about the participants' median (MADe)

Sample: EFL129

Examination 2- *Escherichia coli*:

Examination 2	Expected Result	Your result	Your score
Applicable food category	2.1.7		
Name of examination	<i>Escherichia coli</i>		
Stipulated method*	ISO 16649-1 or 2*		
Amount of sample examined	-		
No. of samples from a batch required for compliance	5		
Expected range	$1.38 \times 10^5 - 1.38 \times 10^6$		
Limits for compliance	m=50; M=500; c=2		
Conclusion about this examination from result obtained	Your conclusion has been scored in relation to your reported result		
* The most recent edition of the standard should be used			

Comments on Performance:

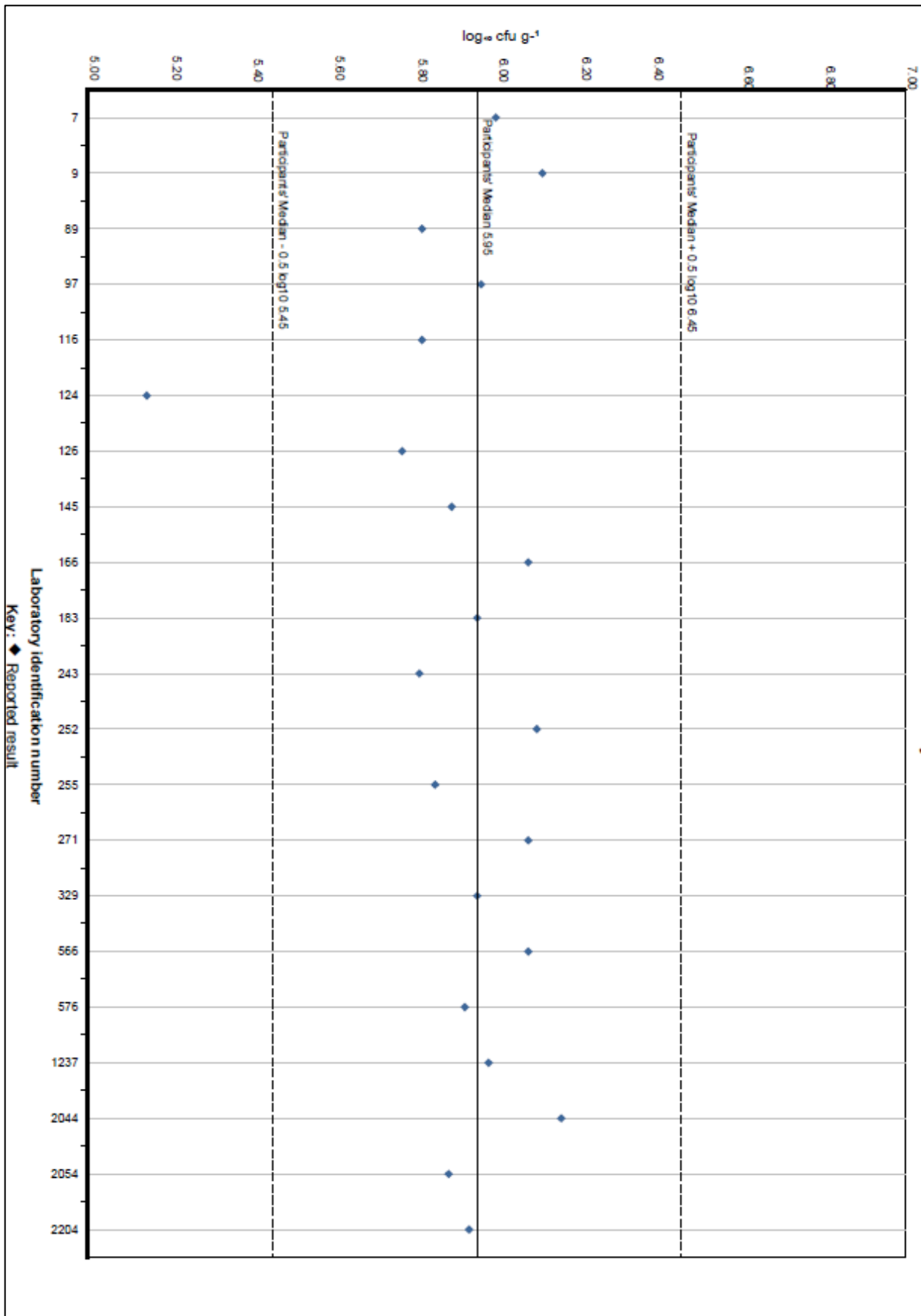
Number of participants correctly examining for <i>Escherichia coli</i> as part of food category 2.1.7	17
Number of participants correctly examining for <i>Escherichia coli</i> as part of incorrect food category 2.1.6	4
Number of participants correctly using ISO 16649-1	4
Number of participants correctly using ISO 16649-2	13
Number of participants correctly using ISO 16649-1 or 2	2
Number of participants incorrectly using ISO 4832	1
Number of participants using an in-house method	1

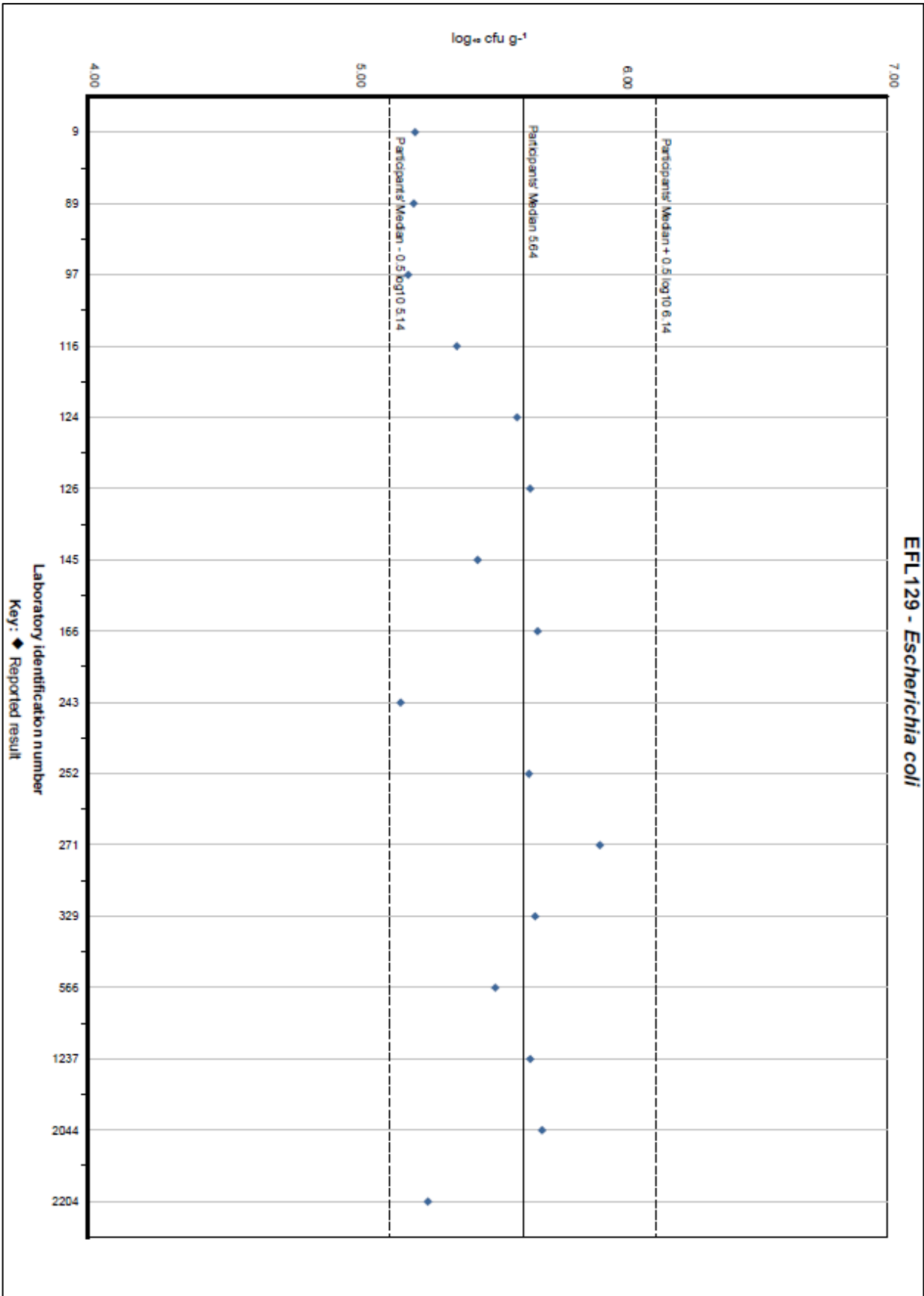
Assigned value (participants' median)	$4.36 \times 10^5 \text{ cfu g}^{-1}$ (5.64 log ₁₀)
Uncertainty of assigned value ($U(X_{pt}) = \log_{10} \text{ cfu g}^{-1}$)	0.05
Participants mean	$3.90 \times 10^5 \text{ cfu g}^{-1}$ (5.59 log ₁₀)
Standard deviation of participants results **	0.15 log ₁₀ cfu g ⁻¹
FEPTU QC median	$4.30 \times 10^5 \text{ cfu g}^{-1}$ (5.63 log ₁₀)

** Robust S* based on median absolute deviation about the participants' median (MADe)

	Your result	Your score
Overall batch conclusion		
Bonus score		

EFL129 - Aerobic colony count





Performance Assessment Sheet

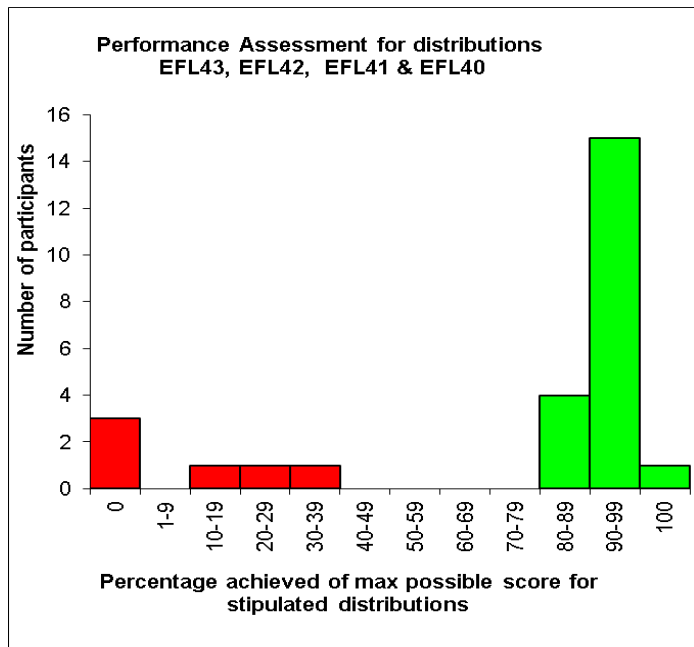
Distribution	Sample	Examination	Your score	Your %
EFL43	EFL127	<i>Listeria monocytogenes</i>		
	EFL127	<i>Salmonella</i> spp.		
	EFL127	Overall Batch Conclusion Score		
	EFL127	Bonus Score		
	EFL128	<i>Salmonella</i> spp.		
	EFL128	Overall Batch Conclusion Score		
	EFL128	Bonus Score		
	EFL129	Aerobic colony count		
	EFL129	<i>Escherichia coli</i>		
	EFL129	Overall Batch Conclusion Score		
	EFL129	Bonus Score		
EFL42	EFL124	<i>Listeria monocytogenes</i>		
	EFL124	<i>Escherichia coli</i> .		
	EFL124	Coagulase positive staphylococci		
	EFL124	Overall Batch Conclusion Score		
	EFL124	Bonus Score		
	EFL125	<i>Listeria monocytogenes</i>		
	EFL125	<i>Cronobacter</i> spp. (<i>Enterobacter sakazakii</i>)		
	EFL125	<i>Enterobacteriaceae</i>		
	EFL125	Presumptive <i>Bacillus cereus</i>		
	EFL125	Overall Batch Conclusion Score		
	EFL125	Bonus Score		
	EFL126	<i>Listeria monocytogenes</i>		
	EFL126	<i>Escherichia coli</i>		
	EFL126	Coagulase positive staphylococci		
	EFL126	Overall Batch Conclusion Score		
	EFL126	Bonus Score		
EFL41	EFL121	<i>Listeria monocytogenes</i>		
	EFL121	<i>Salmonella</i> spp.		
	EFL121	Shiga toxin producing <i>E. coli</i>		
	EFL121	Overall Batch Conclusion Score		
	EFL121	Bonus Score		
	EFL122	<i>Listeria monocytogenes</i>		
	EFL122	Overall Batch Conclusion Score		
	EFL122	Bonus Score		
	EFL123	<i>Listeria monocytogenes</i>		
	EFL123	<i>Salmonella</i> spp.		

	EFL123	Overall Batch Conclusion Score		
	EFL123	Bonus Score		
EFL40	EFL118	<i>Salmonella</i> spp.		
	EFL118	Overall Batch Conclusion Score		
	EFL118	Bonus Score		
	EFL119	<i>Listeria monocytogenes</i>		
	EFL119	<i>Enterobacteriaceae</i>		
	EFL119	Overall Batch Conclusion Score		
	EFL119	Bonus Score		
	EFL120	<i>Listeria monocytogenes</i>		
	EFL120	<i>Salmonella</i> spp.		
	EFL120	<i>Escherichia coli</i>		
	EFL120	Overall Batch Conclusion Score		
	EFL120	Bonus Score		

Performance Assessment Comment:

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



Performance Assessment Comment;

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

- a) refer to the relevant sample reports for specific comments
- b) refer to the website guidance documents:

<https://www.gov.uk/government/collections/external-quality-assessment-eqa-and-proficiency-testing-pt-for-food-water-and-environmental-microbiology>

- c) contact the organisers for advice.

General comment:

Participants are reminded that decisions on appropriate testing should be based on fact, not assumptions.

Please refer to pages 13 and 14 of the guide to scoring document for more information.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/675584/FEPTU562.11.pdf

It is important that when entering your results all fields where a score is applied are correctly completed.

Participants are reminded that if you do not carry out a test that is required for compliance with the legislation to at least complete the applicable food category or the name of the examination. This will demonstrate your understanding of the legislation requirements and for your laboratory to be awarded the bonus scores.

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. Therefore, we will post generic reports on the website, which will be available for 12 months after the distribution has closed, so you can access the missing data.

End of report.