



Summary of Results

External Quality Assessment for Food Microbiology European Food Microbiology Legislation Scheme

Distribution Number: EFL45
Sample Numbers: EFL133, EFL134 & EFL135

Distribution Date:	June 2018
Results Due:	6 July 2018
Report Date:	6 September 2018
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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. 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 EFL45	26
Number of laboratories not returning a result for EFL45	1

Sample: EFL133

Sample Details: Spicy tuna sushi roll containing uncooked tuna in a spicy chilli sauce covered in a nori sheet with sushi rice. Sampled before the food has left the business operator

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 1.2

Sample Conclusion: A further four sample units require testing before a conclusion can be drawn for the batch

Contents: *Bacillus subtilis* 13 (wild strain)
Enterococcus faecalis 3.4×10^3 (wild strain)
Klebsiella oxytoca 2.8×10^3 (wild strain)
Staphylococcus epidermidis 4.3×10^3 (wild strain)

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

Required examinations: *Listeria monocytogenes*

Examination 1- *Listeria monocytogenes*:

Examination	Expected Result	Your result	Your score
Applicable food category	1.2		
Name of examination	<i>Listeria monocytogenes</i>		
Stipulated method*	ISO 11290-1*		
Amount of sample examined	25g		
No. of samples from a batch required for compliance	5		
Expected range	Not 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		Total score out of	

Comments on Performance:

Number of participants correctly reporting not detected for <i>Listeria monocytogenes</i> as part of food category 1.2	24
Number of participants correctly reporting not detected for <i>Listeria monocytogenes</i> as part of incorrect food category 1.8	1
Number of participants correctly using ISO 11290-1	23
Number of participants incorrectly using ISO 11290-2	1
Number of participants using an alternative method	1

Examination specific comment

Two laboratories additionally examined this sample for *Salmonella* spp. and five laboratories for *Escherichia coli*; these tests are not required to determine compliance with the legislation.

	Your result	Your score
Overall batch conclusion		
Bonus score		

Sample: EFL134

- Sample Details:** Mascarpone cheese made using pasteurised milk, sampled before the food has left the business operator
- 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 and 2.2.2 and 2.2.5
- Sample Conclusion:** The batch does not comply with the Food Safety Criteria
- Contents:** *Listeria monocytogenes* 63 (wild strain)
Escherichia coli 2.0×10^2 (wild strain)
Staphylococcus aureus 47 (wild strain)
Lactobacillus lactis 8.7×10^2 (wild strain)

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

Required Examination: *Listeria monocytogenes*, *Escherichia coli* and Coagulase positive staphylococci

Examination 1- *Listeria monocytogenes*:

Examination	Expected Result	Your result	Your score
Applicable food category	1.2		
Name of examination	<i>Listeria monocytogenes</i>		
Stipulated method*	ISO 11290-1*		
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		Total score out	

Comments on Performance:

Number of participants correctly reporting detected for <i>Listeria monocytogenes</i> as part of food category 1.2	24
Number of participants using correctly ISO 11290-1	21
Number of participants using incorrectly ISO 11290-2	2
Number of participants using an alternative method	1

Sample: EFL134 (continued)

Examination 2- *Escherichia coli*:

Examination	Expected Result	Your result	Your score
Applicable food category	2.2.2		
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	37 – 5.35 x 10 ²		
Limits for compliance	m=100; M=1000; 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		Total score out of	

Comments on Performance:

Number of participants correctly examining for <i>Escherichia coli</i> as part of food category 2.2.2	21
Number of participants correctly using ISO 16649-1	4
Number of participants correctly using ISO 16649-2	11
Number of participants correctly using ISO 16649-1 or ISO 11290-2	2
Number of participants incorrectly using ISO 16649-3	1
Number of participants incorrectly using ISO 11290-1	1
Number of participants incorrectly using ISO 11290-2	1
Number of participants using an alternative method	1

Assigned value (participants' median)	1.40 x 10 ² cfu g ⁻¹ (2.15 log ₁₀)
Uncertainty of assigned value ($U(X_{pt}) = \log_{10} \text{ cfu g}^{-1}$)	0.08
No. of outlying counts	1 (1 low)
Participants mean	1.47 x 10 ² cfu g ⁻¹ (2.17 log ₁₀)
Standard deviation of participants results **	0.33 log ₁₀ cfu g ⁻¹
FEPTU QC median	91 cfu g ⁻¹ (1.95 log ₁₀)

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

Sample: EFL134 (continued)

Examination 3- Coagulase positive staphylococci:

Examination	Expected Result	Your result	Your score
Applicable food category	2.2.5		
Name of examination	Coagulase positive staphylococci		
Stipulated method*	ISO 6888-1 or 2		
Amount of sample examined	-		
No. of samples from a batch required for compliance	5		
Expected range	14 – 1.42 x 10 ²		
Limits for compliance	m=10; M=100; 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		Total score out of	

Comments on Performance:

Number of participants correctly examining for Coagulase positive staphylococci as part of food category 2.2.5	21
Number of participants correctly examining for Coagulase positive staphylococci as part of incorrect food category 2.2.4	1
Number of participants correctly using ISO 6888-1	16
Number of participants correctly using ISO 6888-2	3
Number of participants correctly using ISO 6888-1 or ISO 6888-2	1
Number of participants using an alternative method	1

Assigned value (participants' median)	45 cfu g ⁻¹ (1.65 log ₁₀)
Uncertainty of assigned value ($U(X_{pt}) = \log_{10} \text{cfu g}^{-1}$)	0.04
Participants mean	45 cfu g ⁻¹ (1.66 log ₁₀)
Standard deviation of participants results **	0.15 log ₁₀ cfu g ⁻¹
FEPTU QC median	60 cfu g ⁻¹ (1.78 log ₁₀)

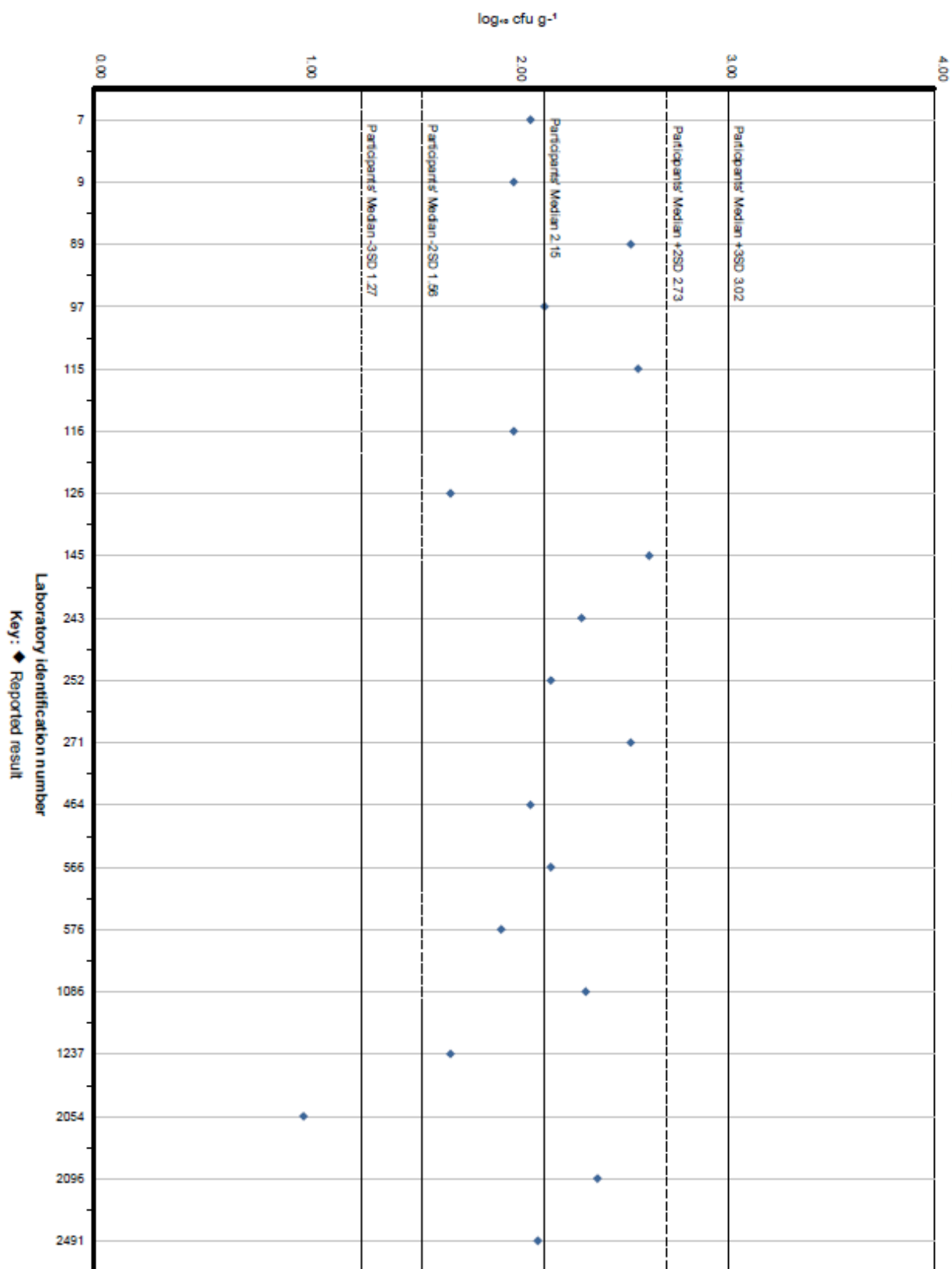
** Robust S* based on median absolute deviation about the participants' median (MADe)

Sample specific comment

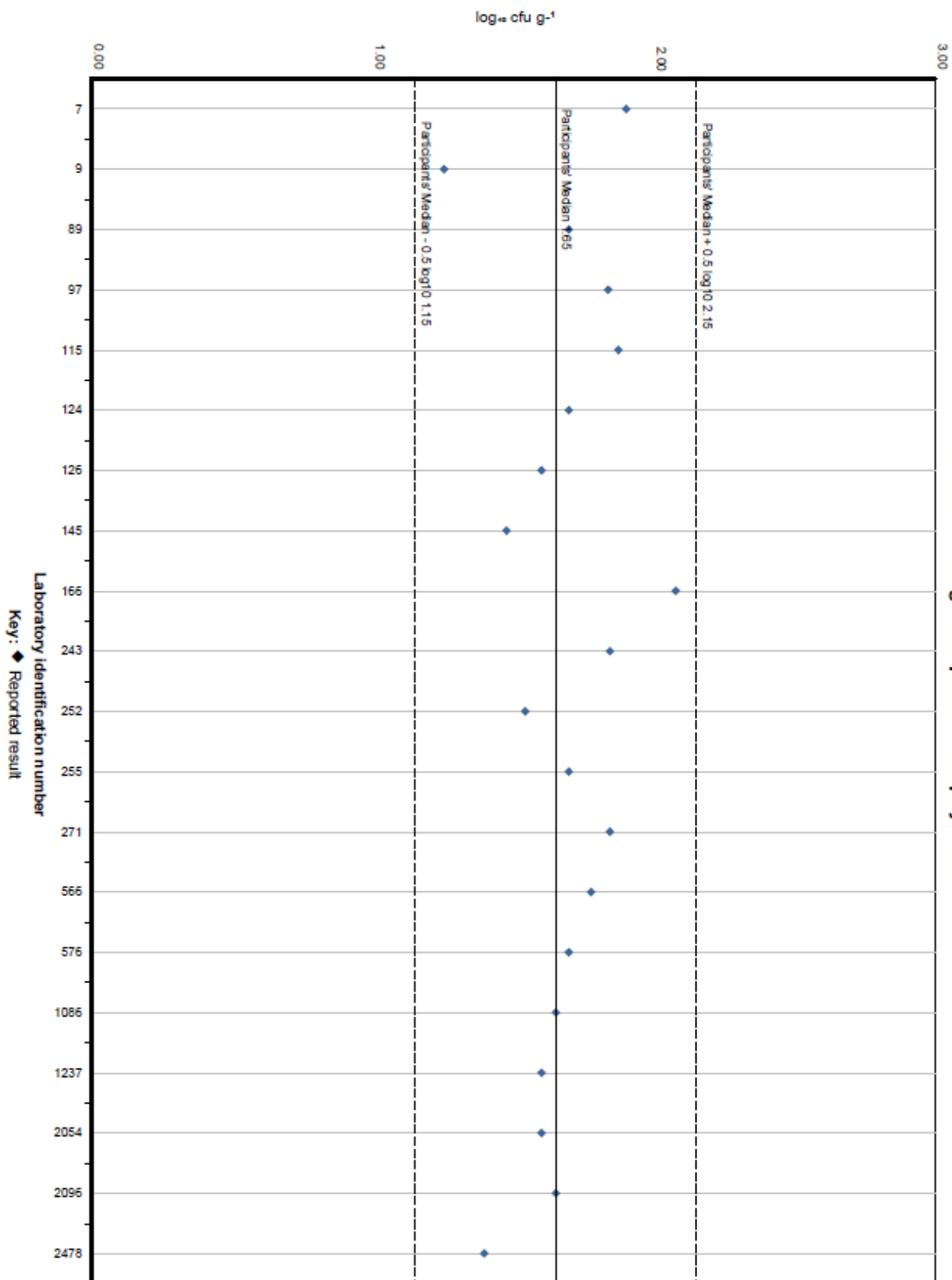
Two laboratories additionally examined this sample for *Salmonella* spp. this test is not required to determine compliance with the legislation.

	Your result	Your score
Overall batch conclusion		
Bonus score		

EFL134 - *Escherichia coli*



EFL134 - Coagulase-positive staphylococci



Sample: EFL135

Sample Details: Freshly cut fruit salad with orange juice - shelf-life of three days. Product placed on the 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 1.3 and 1.13

Sample Conclusion: A further four sample units require testing before a conclusion can be drawn for the batch

Contents:
Listeria monocytogenes 1.6 x 10² (wild strain)
Escherichia coli 1.8 x 10² (wild strain)
Lactobacillus paracasei 3.1 x 10² (wild strain)
Pantoea agglomerans 3.1 x 10² (wild strain)

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

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

Examination 1- *Listeria monocytogenes*:

Examination	Expected Result	Your result	Your score
Applicable food category	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	12 – 1.15 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		
Total score out of			

* 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 1.3	16
Number of participants correctly examining for <i>Listeria monocytogenes</i> as part of incorrect food category 1.2	8
Number of participants correctly using ISO 11290-2	22
Number of participants using an alternative method or not stated a method	2

Number of participants not indicating that <i>Listeria monocytogenes</i> test is required for compliance	1
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Assigned value (participants' median)	36 cfu g ⁻¹ (1.56 log ₁₀)
Uncertainty of assigned value ($U(X_{pt}) = \log_{10} \text{ cfu g}^{-1}$)	0.07
No. of outlying counts	4 (2 low / 2 high)
No. of censored values reported	2
Participants mean	35 cfu g ⁻¹ (1.55 log ₁₀)
Standard deviation of participants results **	0.25 log ₁₀ cfu g ⁻¹
FEPTU QC median	39 cfu g ⁻¹ (1.6 log ₁₀)

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

Examination specific comment

Eight participants reported that food category 1.2 applies for this sample type. This sample had a shelf-life of <5 days therefore would not be able to support the growth of *L. monocytogenes*. Footnote 8 states that 'products with a shelf-life of less than five days shall be automatically considered to belong to this category'. While the testing requirements are the same for food categories 1.2 and 1.3 participants are reminded that they must refer to the footnote of the legislation to ensure that the correct food category is selected.

Sample: EFL135 (continued)

Examination 2- *Salmonella* spp.:

Examination 2	Expected Result	Your result	Your score
Applicable food category	1.19		
Name of examination	<i>Salmonella</i> spp.		
Stipulated method*	ISO 6579*		
Amount of sample examined	25		
No. of samples from a batch required for compliance	5		
Expected range	Not 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		Total score out of	

Comments on Performance:

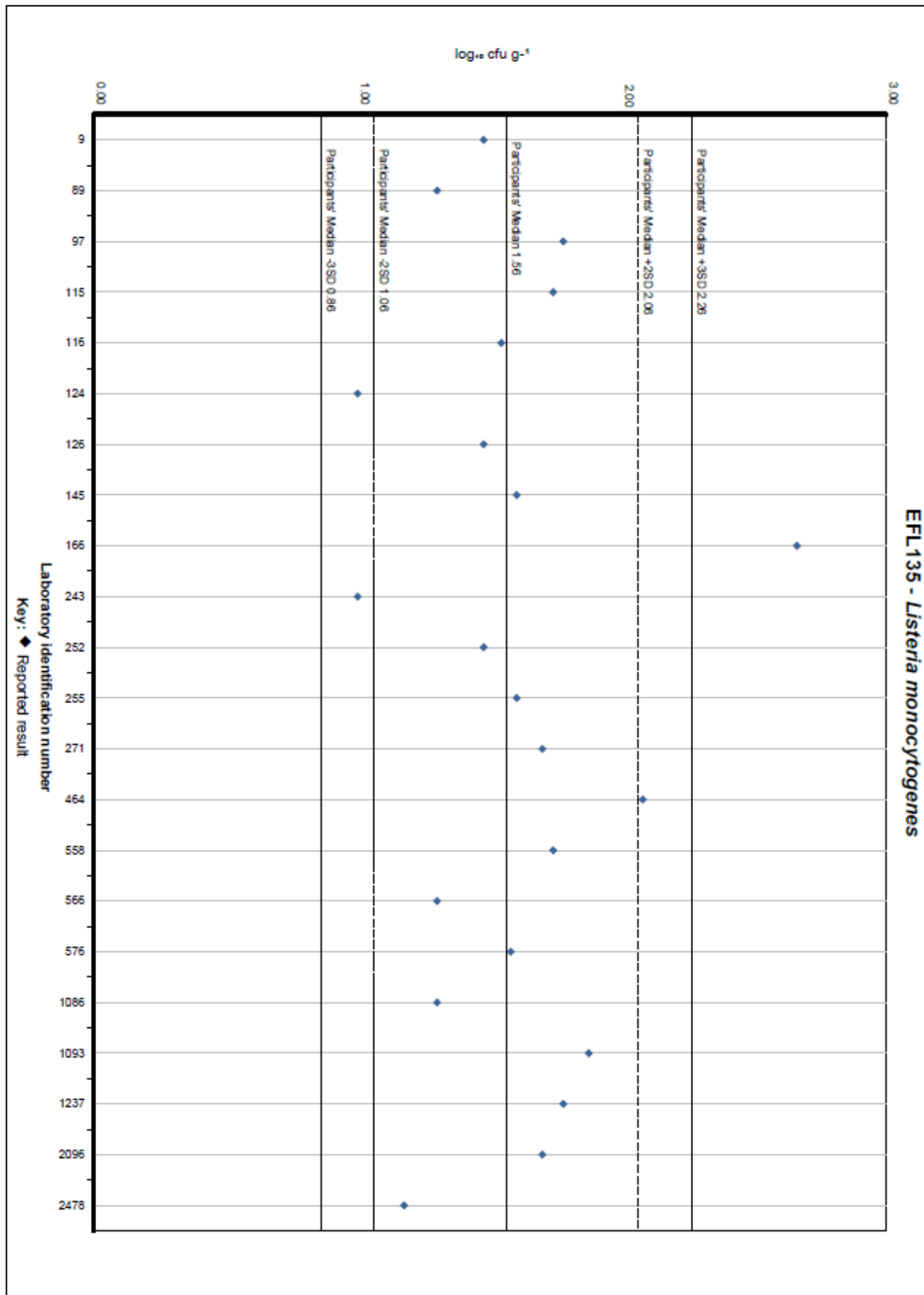
Number of participants correctly reporting not detected for <i>Salmonella</i> spp. as part of food category 1.19	23
Number of participants correctly using ISO 6579	23
Number of participants using an alternative method	1

Number of participants indicating that <i>Salmonella</i> spp. test is required for compliance as part of food category 1.19	1
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Sample specific comment

Seven laboratories additionally examined this sample for *Escherichia coli* and one for *Staphylococcus aureus*; these tests are not required to determine compliance with the legislation.

	Your result	Your score
Overall batch conclusion		
Bonus score		



Performance Assessment Sheet

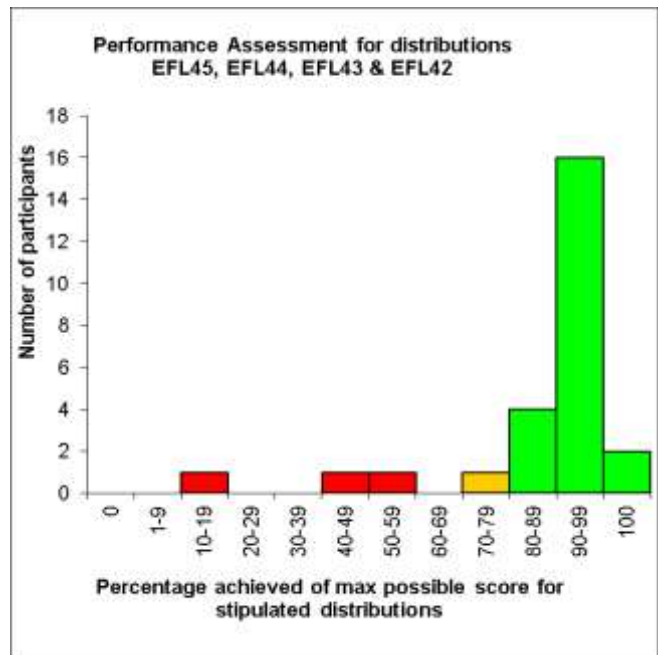
Distribution	Sample	Examination	Your score	Your %
EFL45	EFL133	<i>Listeria monocytogenes</i>		
	EFL133	Overall Batch Conclusion Score		
	EFL133	Bonus Score		
	EFL134	<i>Listeria monocytogenes</i>		
	EFL134	<i>Escherichia coli</i>		
	EFL134	Coagulase positive staphylococci		
	EFL134	Overall Batch Conclusion Score		
	EFL134	Bonus Score		
	EFL135	<i>Listeria monocytogenes</i>		
	EFL135	<i>Salmonella</i> spp.		
	EFL135	Overall Batch Conclusion Score		
	EFL135	Bonus Score		
EFL44	EFL130	<i>Listeria monocytogenes</i>		
	EFL130	Overall Batch Conclusion Score		
	EFL130	Bonus Score		
	EFL131	<i>Listeria monocytogenes</i>		
	EFL131	<i>Enterobacteriaceae</i>		
	EFL131	Overall Batch Conclusion Score		
	EFL131	Bonus Score		
	EFL132	<i>Listeria monocytogenes</i>		
	EFL132	<i>Salmonella</i> spp.		
	EFL132	Overall Batch Conclusion Score		
	EFL132	Bonus Score		
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		

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 every sample to help assess participants' performance.



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.