Public Health England

Protecting and improving the nation's health

Summary of Results

External Quality Assessment for Food Microbiology

European Food Microbiology Legislation Scheme

Distribution Number: **EFL46**

Sample Numbers: **EFL136, EFL137 & EFL138**

Distribution Date:	**October 2018**
Results Due:	**2 November 2018**
Report Date:	**21 November 2018**
Samples prepared and quality control tested by:	**Angela Appea** **Richard Borrill** **Thomas Harper** **Margaret Njenga** **Zak Prior** **Lili Tsegaye**
Data analysed by:	**Nita Patel** **Manchari Rajkumar**
Report compiled by:	**Nita Patel** **Manchari Rajkumar**
Authorised by:	**Nita Patel**

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 six 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

UKAS PROFICIENCY TESTING
0006

Total number of participants sent distribution EFL46	**24**
Number of laboratories not returning a result for EFL46	**1**
Number of laboratories not examining any of the samples in EFL46	**1**

Sample: EFL136

Sample Details: Carton of chilled pasteurised liquid egg whites drunk as a body building supplement – shelf-life is 7 days. 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 categories 1.2 and 2.3.1

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

Contents: *Listeria monocytogenes* 1.6 x 10^2 (wild strain)
Pseudomonas putida 1.8 x 10^2 (wild strain)
Salmonella Gallinarum (50 per disc) (wild strain)
Staphylococcus aureus 6.5 x 10^2 (wild strain)

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

Required examinations: *Listeria monocytogenes* and *Enterobacteriaceae*

Examination 1- *Listeria monocytogenes*:

Examination	Expected Result	Your result	Your score
Applicable food category	1.2		
Name of examination	*Listeria monocytogenes*		
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 of

Comments on Performance:

Number of participants correctly reporting detected for *Listeria monocytogenes* as part of food category 1.2	19
Number of participants correctly using ISO 11290-1	17
Number of participants incorrectly using ISO 11290-2	2

Number of participants not indicating that *Listeria monocytogenes* test is required for compliance	3

Examination specific comment

This sample is used by body builders and is considered a ready-to-eat product that requires *L. monocytogenes* testing for compliance.

Sample: EFL136 (continued)

Examination 2 - *Enterobacteriaceae*:

Examination	Expected Result	Your result	Your score
Applicable food category	2.3.1		
Name of examination	*Enterobacteriaceae*		
Stipulated method*	ISO 21528-2*		
Amount of sample examined	-		
No. of samples from a batch required for compliance	5		
Expected range	<10		
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 reporting a correct enumeration value for *Enterobacteriaceae* as part of food category 2.3.1	22
Number of participants using correctly ISO 21528-2	19
Number of participants using incorrectly stating ISO 6759	1
Number of participants using incorrectly stating ISO 22964	1
Number of participants using an alternative method	1

Sample specific comment

Three laboratories additionally examined this sample for *Salmonella* spp. as part of food category 1.14; these tests are not required to determine compliance with the legislation.

The inclusion of *Salmonella* in the sample design for EFL136 was an error. Therefore this parameter has not been scored.

	Your result	Your score
Overall batch conclusion		
Bonus score		

Sample: EFL137

Sample Details: Lemon, garlic and herb salted butter made with unpasteurised milk. 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 1.2 and 1.11

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

Contents: *Salmonella* Stanley 1,4,[5],12,[27]:d:1,2 (83 per disc) (wild strain)
Enterococcus faecalis 2.6 x 10^2 (wild strain)
Penicillium chrysogenum 8.8 x 10^2 (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		
Name of examination	*Listeria monocytogenes*		
Stipulated method*	ISO 11290-2*		
Amount of sample examined	-		
No. of samples from a batch required for compliance	5		
Expected range	<10		
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		Total score out of	

Comments on Performance:

Number of participants reporting a correct enumeration value for *Listeria monocytogenes* as part of food category 1.2	19
Number of participants incorrectly using ISO 11290-1	1
Number of participants correctly using ISO 11290-2	18

Number of participants not indicating that *Listeria monocytogenes* test is required for compliance	3

Examination specific comment

This sample is eaten as a ready-to-eat product and therefore requires *L. monocytogenes* testing for compliance.

Sample: EFL137 (continued)

Examination 2- *Salmonella* spp.:

Examination	Expected Result	Your result	Your score
Applicable food category	1.11		
Name of examination	*Salmonella* 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

Total score out of «EFL137Total_score1»

Comments on Performance:

Number of participants correctly reporting detected for *Salmonella* spp. as part of food category 1.11	21
Number of participants correctly reporting detected for *Salmonella* spp. as part of incorrect food category 1.14	1
Number of participants correctly using ISO 6579	21
Number of participants using an alternative method	1

Sample specific comment

Five laboratories additionally examined this sample for *Escherichia coli* as part of food category 2.2.6; these tests are not required to determine compliance with the legislation.

	Your result	Your score
Overall batch conclusion		
Bonus score		

Sample: EFL138

Sample Details: Cooked frozen seafood paella made with prawns, mussels, monkfish and squid. Product 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 2.4.1.

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

Contents: **Escherichia coli* 9.3 x 10^2 (wild strain)
Staphylococcus aureus 8.1 x 10^2 (wild strain)
Enterococcus faecalis 1.1 x 10^3 (wild strain)
Lactobacillus plantarum 3.0 x 10^2 (wild strain)

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

Required examinations *Escherichia coli* and Coagulase-positive staphylococci

Examination 1- *Escherichia coli*:

Examination	Expected Result	Your result	Your score
Applicable food category	2.4.1		
Name of examination	*Escherichia coli*		
Stipulated method*	ISO 16649-3*		
Amount of sample examined	-		
No. of samples from a batch required for compliance	5		
Expected range	1.4 x 10^2 – 1.4 x 10^3		
Limits for compliance	m=1/g; M=10/g; 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 reporting a MPN value for *Escherichia coli* as part of food category 2.4.1	18
Number of participants incorrectly using ISO 16649-2	3
Number of participants correctly using ISO 16649-3	13
Number of participants using an alternative method	2

Number of participants indicating that *Escherichia coli* test is required for compliance	1
Number of participants not indicating that *Escherichia coli* test is required for compliance	1

Assigned value (participants' median)	4.6 x 10^2 g^{-1} (2.66 $\log_{10}$)
Uncertainty of assigned value ($U(X_{pt})$= $\log_{10}$ g^{-1})	0.08
Participants mean	4.9 x 10^2 g^{-1} (2.69 $\log_{10}$)
Standard deviation of participants results **	0.24 $\log_{10}$ g^{-1}
FEPTU QC median	9.3 x 10^2 g^{-1} (2.97 $\log_{10}$)

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

Sample: EFL138 (continued)

Examination 2- Coagulase-positive staphylococci:

Examination	Expected Result	Your result	Your score
Applicable food category	2.4.1		
Name of examination	Coagulase-positive staphylococci		
Stipulated method*	ISO 6888-1		
Amount of sample examined	-		
No. of samples from a batch required for compliance	5		
Expected range	$2.56 \times 10^2 – 2.56 \times 10^3$		
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 reporting an enumeration value for Coagulase-positive staphylococci as part of food category 2.4.1	20
Number of participants correctly using ISO 6888-1	15
Number of participants correctly using ISO 6888-2	3
Number of participants using an alternative method	1
Number of participants not stating the method used	1

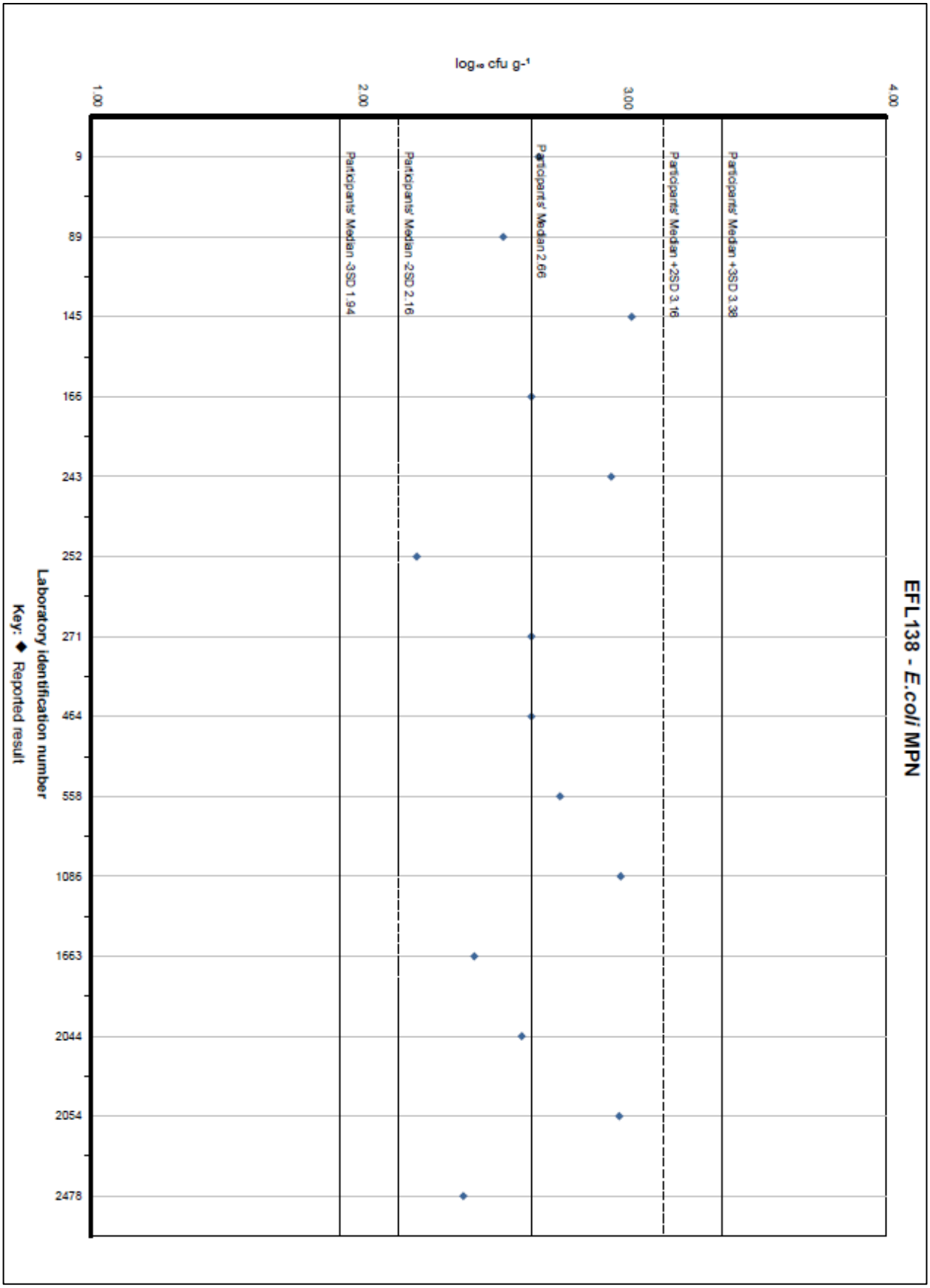
Assigned value (participants' median)	8.1×10^2 cfu g^{-1} (2.91 $\log_{10}$)
Uncertainty of assigned value ($U(X_{pt})$= $\log_{10}$ cfu g^{-1})	0.03
No. of participants reporting a high censored value	1
Participants mean	8.1×10^2 cfu g^{-1} (2.91 $\log_{10}$)
Standard deviation of participants results **	0.12 $\log_{10}$ cfu g^{-1}
FEPTU QC median	8.0×10^2 cfu g^{-1} (2.90 $\log_{10}$)

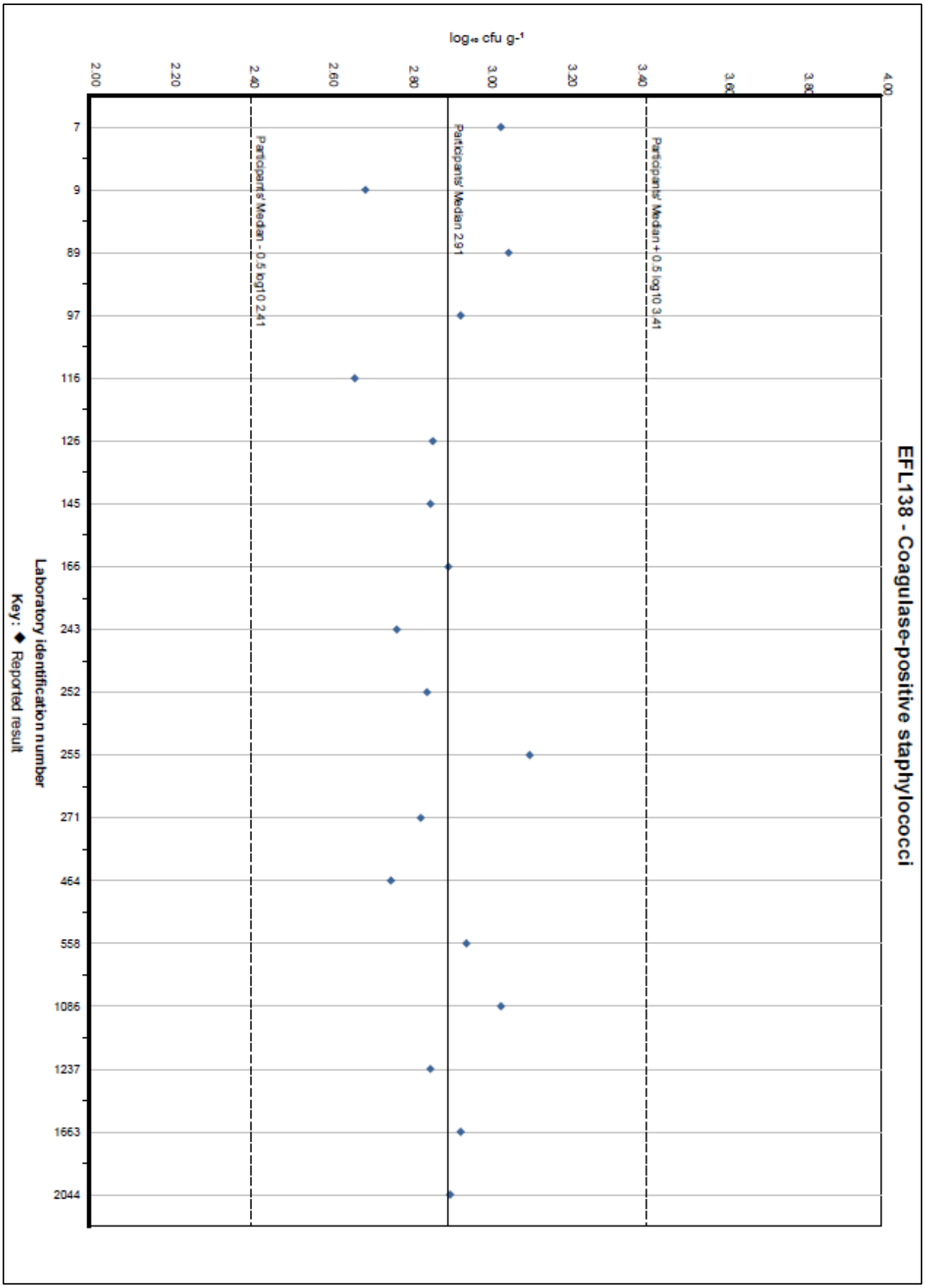
** Robust *S** based on median absolute deviation about the participants' median (*MADe*)

Sample specific comment

Two laboratories indicated that they would not examine this type of sample. Nine laboratories additionally examined this sample for *Listeria monocytogenes* and three laboratories for *Salmonella* spp.; these tests are not required to determine compliance with the legislation. *L. monocytogenes* is not applicable because it is being sampled at the FBO premises in the frozen state, so is unable to grow this organism.

	Your result	Your score
Overall batch conclusion		
Bonus score		


EFL138 - E.coli MPN
log₁₀ cfu g⁻¹
1.00
2.00
3.00
4.00
Participants' Median -3SD 1.94
Participants' Median -2SD 2.16
Participants' Median 2.66
Participants' Median +2SD 3.16
Participants' Median +3SD 3.38
9
89
145
166
243
252
271
464
558
1086
1663
2044
2054
2478
Laboratory identification number
Key: ◆ Reported result


EFL138 - Coagulase-positive staphylococci
log10 cfu g-1
2.00
2.20
2.40
2.60
2.80
3.00
3.20
3.40
3.60
3.80
4.00
Participants' Median - 0.5 log10 2.41
Participants' Median 2.91
Participants' Median + 0.5 log10 3.41
Laboratory identification number
7
9
89
97
116
126
145
166
243
252
255
271
464
558
1086
1237
1663
2044
Key: ◆ Reported result

Performance Assessment Sheet

Distribution	Sample	Examination	Your score	Your %
EFL46	**EFL136**	*Listeria monocytogenes*		
	EFL136	*Enterobacteriaceae*		
	EFL136	Overall Batch Conclusion Score		
	EFL136	Bonus Score		
	EFL137	*Listeria monocytogenes*		
	EFL137	*Salmonella* spp.		
	EFL137	Overall Batch Conclusion Score		
	EFL137	Bonus Score		
	EFL138	*Escherichia coli*		
	EFL138	Coagulase-positive staphylococci		
	EFL138	Overall Batch Conclusion Score		
	EFL138	Bonus Score		
EFL45	**EFL133**	*Listeria monocytogenes*		
	EFL133	Overall Batch Conclusion Score		
	EFL133	Bonus Score		
	EFL134	*Listeria monocytogenes*		
	EFL134	*Escherichia coli*		
	EFL134	Coagulase positive staphylococci		
	EFL134	Overall Batch Conclusion Score		
	EFL134	Bonus Score		
	EFL135	*Listeria monocytogenes*		
	EFL135	*Salmonella* spp.		
	EFL135	Overall Batch Conclusion Score		
	EFL135	Bonus Score		
EFL44	**EFL130**	*Listeria monocytogenes*		
	EFL130	Overall Batch Conclusion Score		
	EFL130	Bonus Score		
	EFL131	*Listeria monocytogenes*		
	EFL131	*Enterobacteriaceae*		
	EFL131	Overall Batch Conclusion Score		
	EFL131	Bonus Score		
	EFL132	*Listeria monocytogenes*		
	EFL132	*Salmonella* spp.		
	EFL132	Overall Batch Conclusion Score		
	EFL132	Bonus Score		
EFL43	**EFL127**	*Listeria monocytogenes*		
	EFL127	*Salmonella* spp.		

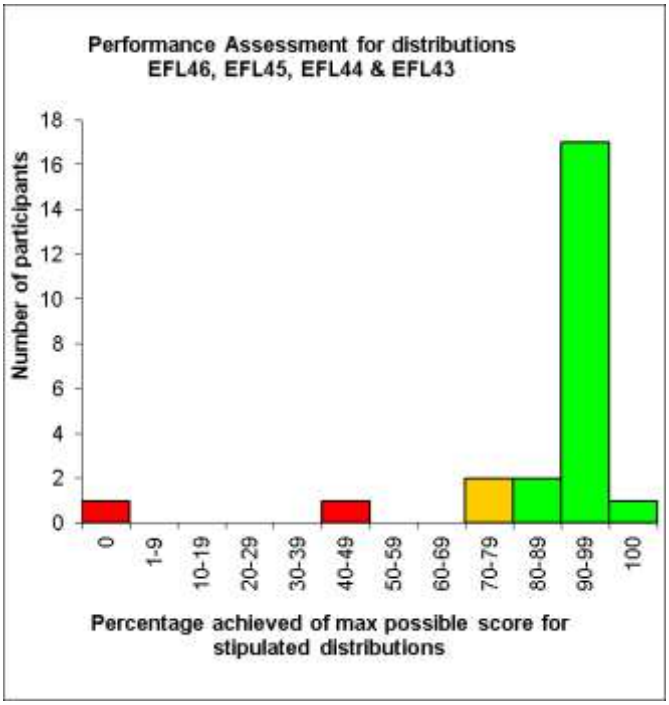
	EFL127	Overall Batch Conclusion Score		
	EFL127	Bonus Score		
	EFL128	*Salmonella spp.*		
	EFL128	Overall Batch Conclusion Score		
	EFL128	Bonus Score		
	EFL129	Aerobic colony count		
	EFL129	*Escherichia coli*		
	EFL129	Overall Batch Conclusion Score		
	EFL129	Bonus Score		

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.

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



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/publications/food-and-water-proficiency-testing-schemes-scoring-systems-and-statistics

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.