Public Health England

Protecting and improving the nation's health

Summary of Results

External Quality Assessment of Water Microbiology

Endoscope Rinse Water Scheme

Distribution Number: EW21 **Sample Numbers: EW21A, EW21B**

Distribution Date:	**January 2019**
Results Due:	**22 February 2019**
Report Date:	**15 March 2019**
Samples prepared and quality control tested by:	**Angela Appea** **Richard Borrill** **Thomas Harper** **Margaret Njenga** **Zak Prior** **Lili Tsegaye** **Vanessa Waite**
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

For further information on the scheme please refer to:

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

Guide to Scoring and Statistics:

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

General guidance for z-scores:
Participants' enumeration results are converted into z-scores using the following formula:

$$Z = \frac{(x_i - X_{pt})}{\sigma_{pt}}$$

x_i = participants' result expressed (expressed as a $\log_{10}$ value)
X_{pt} = assigned value (participants' consensus median (expressed as a $\log_{10}$ value))
σ_{pt} = the fixed standard deviation for the examination (calculated by FEPTU)

The σ_{pt}-value expresses the acceptable difference between the individual participant's result and the participants' consensus median. The σ_{pt}-value used for calculating z-scores for all parameters in the Endoscope Rinse Water Scheme is 0.35. A guide to interpreting z-scores follows, although laboratories must interpret their scores in the context of their own laboratory situation.

z = -1.99 to +1.99	satisfactory
z = -2 to -2.99 or +2 to +2.99	questionable
z= < -3.00 or > + 3.00	unsatisfactory

It is usually recommended that z-scores exceeding +/-2 are investigated to establish the possible cause. As a general rule, PHE recommends that all questionable and unsatisfactory results are investigated.

FEPTU Quality Control: To demonstrate homogeneity of the sample, a minimum of 10 LENTICULE® discs, selected randomly from a batch, are tested in duplicate for enumeration.

To demonstrate stability of the sample, a minimum of six LENTICULE discs, selected randomly from a batch, are examined throughout the distribution period for enumeration.

Public Health England uses methods stipulated in (Health Technical Memorandum 01-06: Decontamination of flexible endoscopes: Part E - Testing methods - March 2016).

The FEPTU results are used for guidance in the preliminary individual results notification, dispatched immediately after every distribution.

Refer to section 17.0 of the Scheme Guide if you have experienced difficulties with any of the examinations.

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

Participants are reminded that reporting an incorrect or false negative results could have serious public health implications.

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	**Email:** **foodeqa@phe.gov.uk**
General comments and complaints	Nita Patel or Zak Prior	FEPTU's website
Scheme consultants	Caroline Willis or Julie E. Russell	
Scheme Co-ordinator	Nita Patel	

Accreditation: PHE Water EQA Scheme for Endoscope Rinse Water is accredited by the United Kingdom Accreditation Service (UKAS) to ISO/IEC 17043:2010.

UKAS PROFICIENCY TESTING
0006

Sample: EW21A

Contents:

Candida tropicalis 36 (wild strain), *Pseudomonas aeruginosa* 27 (wild strain)

Expected Results:

All counts are expressed as colony forming units (cfu) per 100mL.

The fixed standard deviation value (σ_{pt} value) used for calculation of the z-scores is **0.35** for all parameters.

Results	
FEPTU median (MF)*	63
No. results returned	77
Assigned value (Participants median all results)	54
Conclusion based on assigned value**	Risk assessment required
Uncertainty of assigned value	2
Participants mean (all results)	52
Expected Range	30 - 78
Standard deviation***	13
No of outlying counts	11
False positives	N/A
False negatives	0
Your result	
Your conclusion	
Score for performance assessment	
Z-score	

* Membrane filtration

** Reference: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/553303/HTM01-06_PartE.pdf

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

Examination	Expected Result	Your Result	Your Score
P.aeruginosa	Detected		

P.aeruginosa	
Total participants reporting for *P.aeruginosa*	71
Participants reporting correctly the **presence** of *P.aeruginosa*	69 (97%)

Examination	Expected Result	Your Result	Your Score
Yeast/Moulds	Detected		

Yeast/Moulds	
Total participants reporting for Yeast/Moulds	58
Participants reporting correctly the **presence** of Yeast/Moulds	39 (67%)

Total sent samples	82
Not examined	2
Non returns	3

Sample: EW21B

Contents:

Aspergillus niger 10 (wild strain), *Pseudomonas aeruginosa* 21 (wild strain)

Expected Results:

All counts are expressed as colony forming units (cfu) per 100mL.

The fixed standard deviation value (σ_{pt} value) used for calculation of the z-scores is **0.35** for all parameters.

Results	
FEPTU median (MF)*	21
No. results returned	77
Assigned value (Participants median all results)	37
Conclusion based on assigned value**	Risk assessment required
Uncertainty of assigned value	3
Participants mean (all results)	35
Expected Range	1 - 73
Standard deviation***	19
No of outlying counts	12
False positives	N/A
False negatives	2
Your result	
Your conclusion	
Score for performance assessment	
Z-score	

* Membrane filtration

** Reference: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/553303/HTM01-06_PartE.pdf

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

Examination	Expected Result	Your Result	Your Score
P.aeruginosa	Detected		

P.aeruginosa	
Total participants reporting for *P.aeruginosa*	70
Participants reporting correctly the **presence** of *P.aeruginosa*	59 (84%)

Examination	Expected Result	Your Result	Your Score
Yeast/Moulds	Detected		

Yeast/Moulds	
Total participants reporting for Yeast/Moulds	60
Participants reporting correctly the **presence** of Yeast/Moulds	59 (98%)

Total sent samples	82
Not examined	2
Non returns	3

Performance Assessment Sheet

Distribution	Sample	Total Viable Counts 28ºC - 32ºC for 5 days score
EW21	EW21A	
	EW21B	
EW20	EW20A	
	EW20B	
EW19	EW19A	
	EW19B	
Total maximum possible score		
Total percentage		

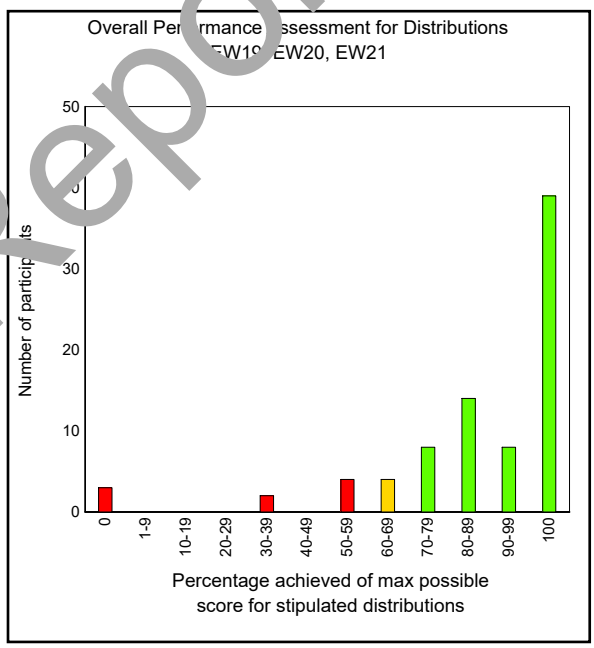
Performance Assessment Comment:

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 alert participants to on-going problems with their examinations and are provided after every distribution. Scores are allocated to results reported for every parameter, for every sample to help assess performance.

Cumulative scores are calculated for the current and previous two distributions for the Endoscope Rinse Water Scheme. Participants' cumulative scores for each of the examinations are compared with the maximum possible scores after every distribution.

Your overall performance with the enumerations in the endoscope rinse water proficiency testing samples for the current and previous two distributions is collated in the chart to the right.



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:

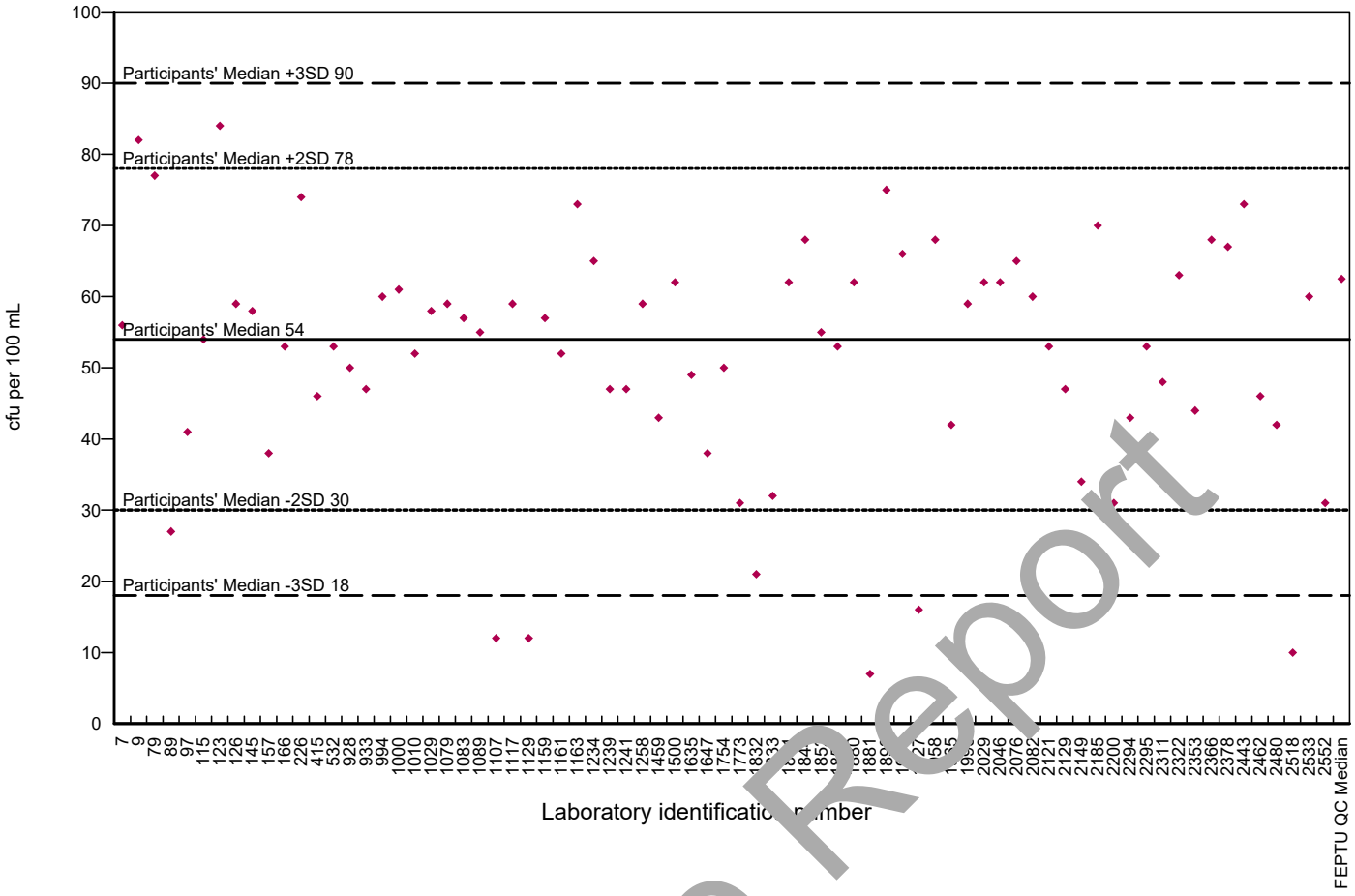
a) refer to the relevant distribution reports for sample-specific comments

b) refer to the website guidance documents:
https://www.gov.uk/government/collections/external-quality-assessment-ega-and-proficiency-testing-pt-for-food-water-and-environmental-microbiology

c) contact the organisers for advice

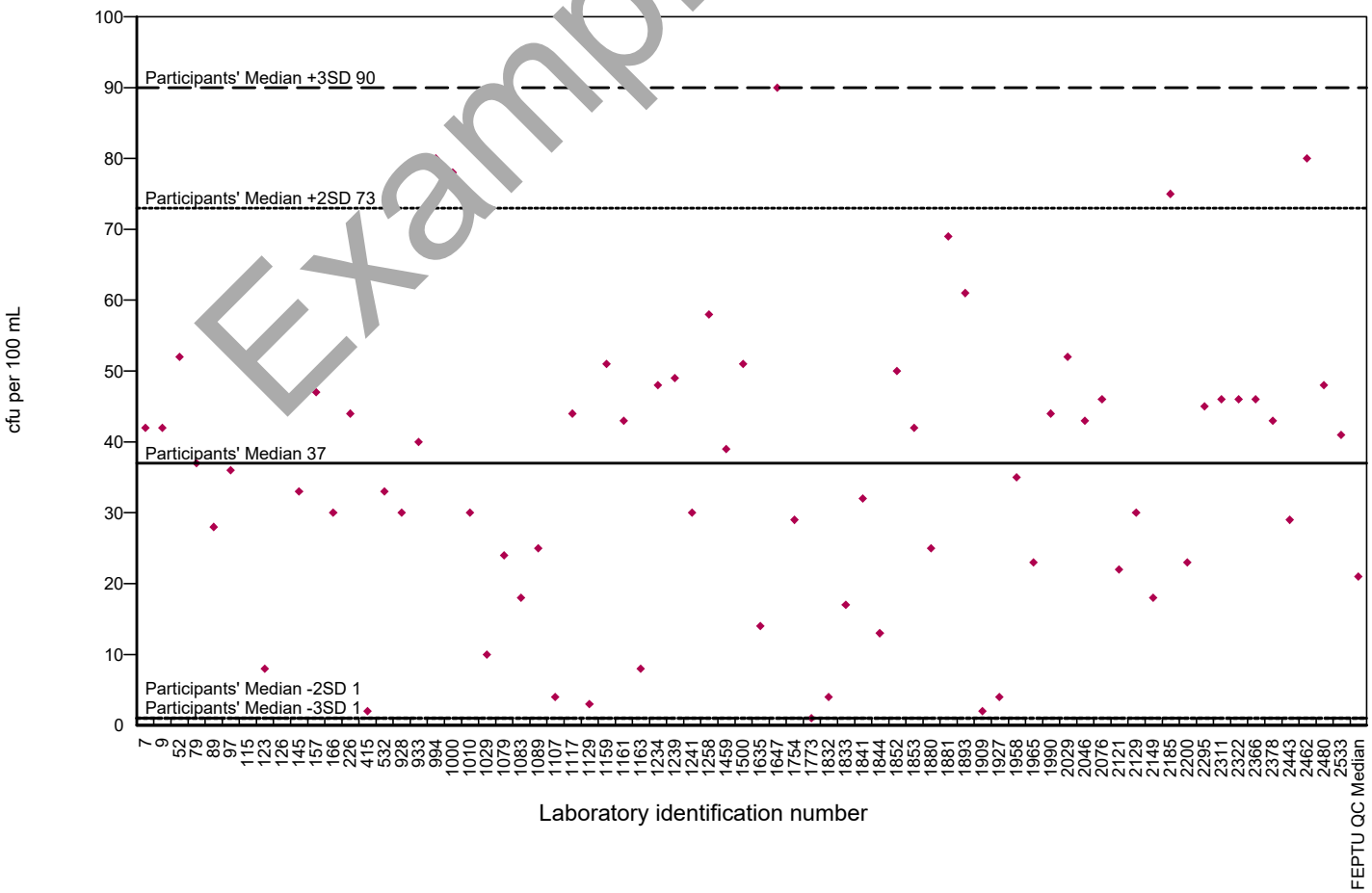
EW21A - Total Viable Counts 28ºC - 32ºC for 5 days

Key: ◆ Reported result



EW21B - Total Viable Counts 28ºC - 32ºC for 5 days

Key: ◆ Reported result



Sample specific comment

EW21A: Yeasts
This sample contained a *Candida tropicalis* at levels of about 36 colony forming unit per 100mL. Of those laboratories reporting a result for yeast, 19/58 (33%) reported a false negative for this examination.

In the FEPTU laboratory the yeast grew as small grey opaque colonies which was confirmed by Gram staining and a wet mount preparation.

Laboratories are reminded that they should only report results for examinations routinely carried out as part of their procedure. Laboratories reporting an incorrect yeast result can request a repeat sample for their own internal investigation.

EW21B: Pseudomonas aeruginosa
This sample contained a *Pseudomonas aeruginosa* at levels of about 21 colony forming units per 100mL. 11/70 (16%) laboratories reported a false negative for this examination. In the FEPTU laboratory the *P. aeruginosa* grew as 2mm blue-green colonies on PCN agar. This strain gave typical results with oxidase, casein hydrolysis and fluorescence which were positive. It is unclear why some laboratories failed to report the presence of this organism.

Laboratories reporting an incorrect *P. aeruginosa* result can request a repeat sample for their own internal investigation

EW21A: 59 laboratories provided an actual conclusion on the results obtained, responses are shown in the tables below:

Colony forming counts reported per 100mL	Conclusion reported by the laboratories (number of laboratories)
Range reported 7 – 31	Acceptable/Satisfactory (3)
Range reported 12 – 84	Risk assessment required (25)
>100	(1)
Range reported 16 – 82	Unsatisfactory/Unacceptable (30)
Range reported 27 – 74	Not routinely reported (17)
>100	(1)

EW21B: 58 laboratories provided an actual conclusion on the results obtained; responses are shown in the tables below:

Colony forming counts reported per 100mL	Conclusion reported by the laboratories (number of laboratories)
Range reported 2 – 4 Reported 0 Reported 400	Acceptable/Satisfactory (4) (2) (1)
Range reported 8 – 80 >100	Risk assessment required (22) (1)
Range reported 4 – 80 >100	Unsatisfactory/unacceptable (27) (1)
Range reported 1 – 90 >100	Not routinely reported (18) (1)

Participants are reminded to only report a conclusion on a test result if this is part of your reporting procedures.

In the UK the interpretation of test results can be found in this document on page 15. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/148561/CFPP_01-06_Testing_methods_Final.pdf. However, the Interpretation/conclusions of microbiological test results in your country may vary to those published in this document.

For EW21A one laboratory was removed from the statistical calculations due to a high count reported.

General comment
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 shall 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