

Summary of Results

External Quality Assessment of Food Microbiology Non-Pathogen Scheme

Distribution Number: NP079

Sample Numbers: NP0213, NP0214,

Distribution Date:	January 2025
Results Due:	14 March 2025
Report Date:	20 March 2025
Samples prepared and quality control tested by:	Divya George Afifa Halim Nafeesa Hussain Sabine Naujokat Zak Prior Jake Videlefsky
Data analysed by:	Joanna Donn Nita Patel
Report compiled by:	Joanna Donn Nita Patel
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For general information about 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 and Statistics: <https://www.feptu.org.uk/schemes/scoring/>

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 as a log₁₀ value)
 X_{pt} = assigned value (participants' consensus median (expressed as a log₁₀ 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 Non-Pathogen 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, UKHSA recommends that all questionable and unsatisfactory results are investigated.

FEPTU Quality control: To demonstrate homogeneity of the sample, a minimum of 10 freeze-dried vials, selected randomly from a batch, are tested in duplicate for parameters requiring enumeration

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

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.

The FEPTU results are used for guidance in the preliminary intended results notification, 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 identification of pathogen 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.

Please contact FEPTU 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	Melody Greenwood	
Scheme Co-ordinator	Nita Patel	

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



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Sample: NP0213

Contents:

Pseudomonas aeruginosa (5.1x10⁴) (NCTC 10332), *Enterobacter cloacae* (4.1x10⁴) (NCTC 10005),
Escherichia coli (1.8x10⁴) (wild strain), *Providencia rettgeri* (8.0x10³) (NCTC 7475), *Enterococcus faecalis* (7.4x10³) (wild strain)

Expected Results:

All counts are expressed as log₁₀ colony forming units (cfu) per mL reconstituted sample.
The fixed standard deviation value (*Opt* value) used for calculation of the z-scores is **0.35** for all parameters.

Parameter	<i>Pseudomonas</i> spp.	Yeasts	Moulds	Coliforms	<i>Enterobacteriaceae</i>	<i>Escherichia coli</i>	Enterococci	Lactic acid bacteria	Colony count 30°C
FEPTU median	5.1x10 ⁴ (4.71 log ₁₀)	0	0	5.8x10 ⁴ (4.76 log ₁₀)	6.2x10 ⁴ (4.79 log ₁₀)	1.7x10 ⁴ (4.23 log ₁₀)	7.3x10 ³ (3.86 log ₁₀)	1.2x10 ⁴ (4.06 log ₁₀)	1.3x10 ⁵ (5.1 log ₁₀)
No. results returned	29	54	55	30	41	39	18	28	45
Assigned value (Participants' median)	4.4x10 ³ (3.64 log ₁₀)	0	0	3.1x10 ⁴ (4.49 log ₁₀)	4.3x10 ⁴ (4.63 log ₁₀)	1.2x10 ⁴ (4.09 log ₁₀)	6.6x10 ³ (3.82 log ₁₀)	6.4x10 ³ (3.81 log ₁₀)	7.9x10 ⁴ (4.9 log ₁₀)
Uncertainty of assigned value (Ux)	0.07	N/A	N/A	0.04	0.04	0.04	0.06	0.03	0.03
Standard deviation*	0.3	N/A	N/A	0.17	0.21	0.23	0.2	0.15	0.16
Expected Range	1.1x10 ³ - 1.7x10 ⁴	N/A	N/A	9.7x10 ³ - 9.7x10 ⁴	1.4x10 ⁴ - 1.4x10 ⁵	3.9x10 ³ - 3.9x10 ⁴	2.1x10 ³ - 2.1x10 ⁴	2.0x10 ³ - 2.0x10 ⁴	2.5x10 ⁴ - 2.5x10 ⁵
Participants' mean	4.4x10 ³ (3.64 log ₁₀)	N/A	N/A	3.2x10 ⁴ (4.5 log ₁₀)	4.2x10 ⁴ (4.62 log ₁₀)	1.2x10 ⁴ (4.09 log ₁₀)	5.9x10 ³ (3.77 log ₁₀)	6.6x10 ³ (3.82 log ₁₀)	7.5x10 ⁴ (4.87 log ₁₀)
No of outlying counts	6	N/A	N/A	2	4	5	2	6	4
False positives		4	0						
False negatives	2			1	0	0	1	3	0
Your result									
Score for performance assessment									
Z-score									
Analyst 2 Result									
Analyst 2 Z-score									
Analyst 3 Result									
Analyst 3 Z-score									

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

Total sent samples	76
Not examined	15
Non returns	0

Sample: NP0214

Contents:

Pseudomonas fluorescens (4.7x10⁴) (wild strain), *Penicillium* sp. (1.3x10³) (wild strain), *Citrobacter freundii* (1.0x10⁴) (NCIMB 4143), *Aeromonas* sp. (1.0x10³) (wild strain), *Escherichia coli* (9.0x10³) (wild strain), *Enterococcus casseliflavus* (8.6x10³) (wild strain), *Lactobacillus paracasei* (5.5x10⁵) (wild strain)

Expected Results:

All counts are expressed as log₁₀ colony forming units (cfu) per mL reconstituted sample.
The fixed standard deviation value (*Opt* value) used for calculation of the z-scores is **0.35** for all parameters.

Parameter	<i>Pseudomonas</i> spp.	Yeasts	Moulds	Coliforms	<i>Enterobacteriaceae</i>	<i>Escherichia coli</i>	Enterococci	Lactic acid bacteria	Colony count 30°C
FEPTU median	4.6x10 ⁴ (4.66 log ₁₀)	0	1.3x10 ³ (3.1 log ₁₀)	1.9x10 ⁴ (4.28 log ₁₀)	7.8x10 ⁴ (4.89 log ₁₀)	9.4x10 ³ (3.97 log ₁₀)	9.0x10 ³ (3.95 log ₁₀)	5.7x10 ⁵ (5.76 log ₁₀)	5.1x10 ⁵ (5.71 log ₁₀)
No. results returned	36	65	68	30	40	38	18	32	44
Assigned value (Participants' median)	1.7x10 ⁴ (4.23 log ₁₀)	0	1.5x10 ³ (3.17 log ₁₀)	1.8x10 ⁴ (4.24 log ₁₀)	2.4x10 ⁴ (4.39 log ₁₀)	7.2x10 ³ (3.85 log ₁₀)	6.9x10 ³ (3.84 log ₁₀)	5.3x10 ⁵ (5.72 log ₁₀)	5.8x10 ⁵ (5.76 log ₁₀)
Uncertainty of assigned value (Ux)	0.05	N/A	0.02	0.06	0.08	0.04	0.03	0.04	0.03
Standard deviation*	0.23	N/A	0.12	0.32	0.39	0.23	0.14	0.18	0.16
Expected Range	5.4x10 ³ - 5.4x10 ⁴	N/A	4.7x10 ² - 4.7x10 ³	4.1x10 ³ - 7.5x10 ⁴	4.0x10 ³ - 1.5x10 ⁵	2.3x10 ³ - 2.3x10 ⁴	2.2x10 ³ - 2.2x10 ⁴	1.7x10 ⁵ - 1.7x10 ⁶	1.8x10 ⁵ - 1.8x10 ⁶
Participants' mean	1.7x10 ⁴ (4.23 log ₁₀)	N/A	1.5x10 ³ (3.16 log ₁₀)	1.7x10 ⁴ (4.23 log ₁₀)	2.3x10 ⁴ (4.36 log ₁₀)	6.8x10 ³ (3.84 log ₁₀)	6.7x10 ³ (3.82 log ₁₀)	5.2x10 ⁵ (5.71 log ₁₀)	5.3x10 ⁵ (5.73 log ₁₀)
No of outlying counts	4	N/A	3	3	3	5	2	4	9
False positives		7							
False negatives	1		6	1	0	0	1	0	0
Your result									
Score for performance assessment									
Z-score									
Analyst 2 Result									
Analyst 2 Z-score									
Analyst 3 Result									
Analyst 3 Z-score									

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

Total sent samples	76
Not examined	3
Non returns	0

Performance Assessment Sheet

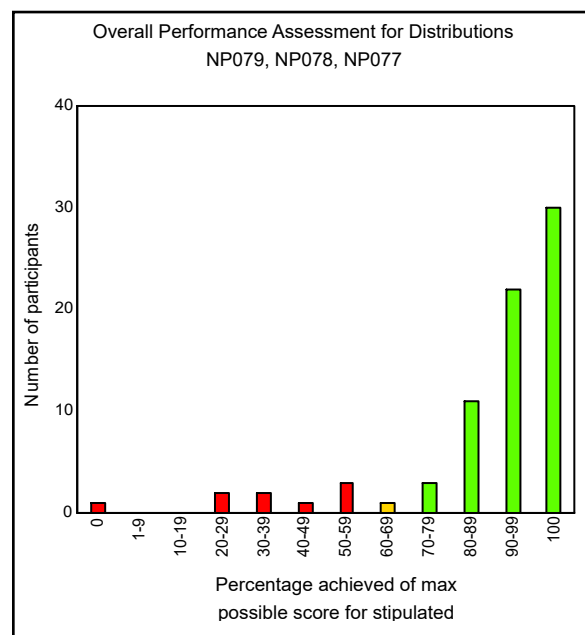
Distribution	Sample	Presumptive <i>Pseudomonas</i> spp. score	Yeasts score	Moulds score	Coliform score	Enterobacteriaceae score	<i>Escherichia coli</i> score	Enterococci score	Lactic acid bacteria score	Aerobic Colony Count (30°C) score
NP079	NP0213									
	NP0214									
NP078	NP0211									
	NP0212									
NP077	NP0209									
	NP0210									
Total maximum possible score										
Total percentage										

Performance Assessment Comment:

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 Non Pathogen 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 non pathogen proficiency testing samples for the current and last two distributions is collated in the chart to the right.



Performance Assessment Comment:

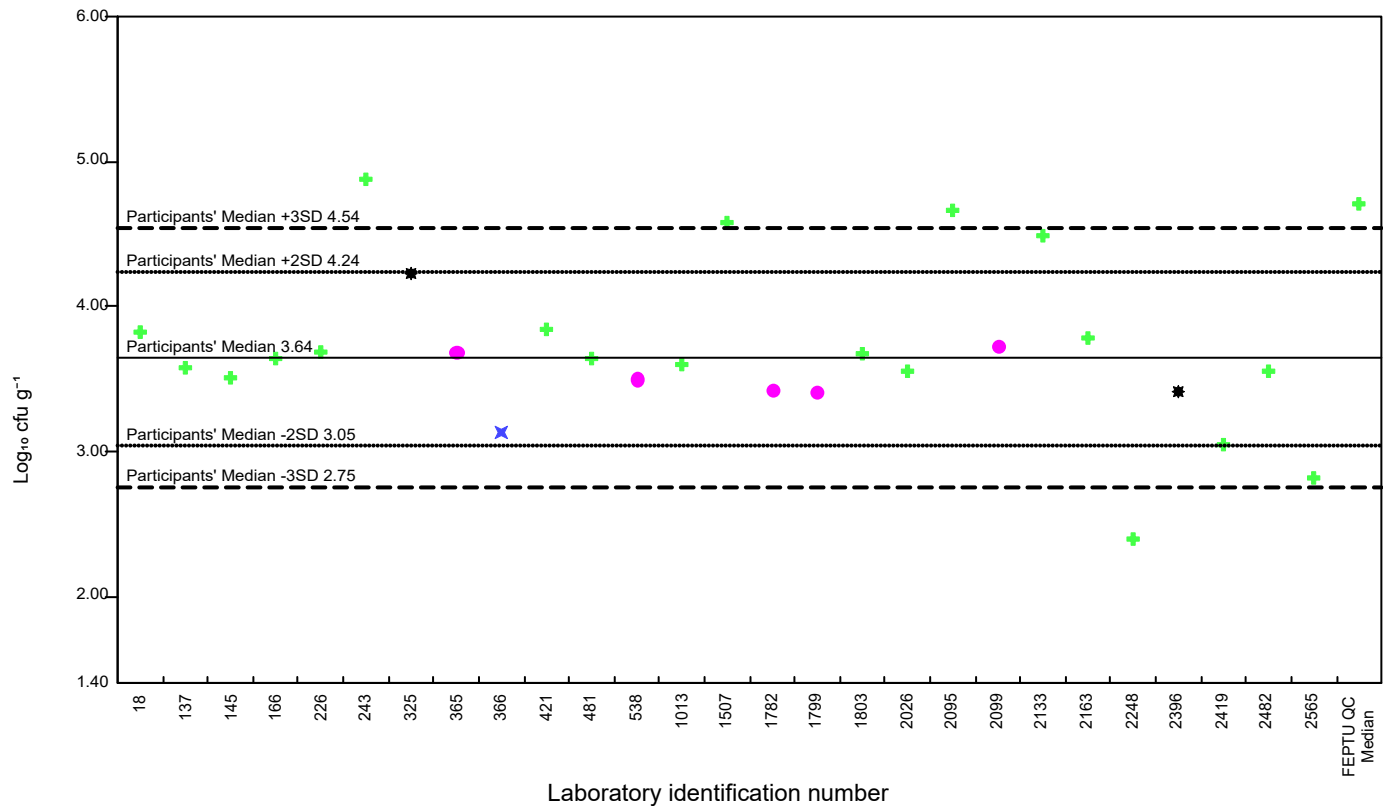
Laboratories that achieve less than 70% of the maximum possible score are likely to be experiencing significant problems with their examinations and are advised to:

- refer to the relevant distribution reports for sample-specific comments
- refer to the website guidance documents:

[Scheme Guide - FEPTU](#) and [Scoring - FEPTU](#)

- contact the organisers for advice

NP0213 - Presumptive *Pseudomonas* spp.



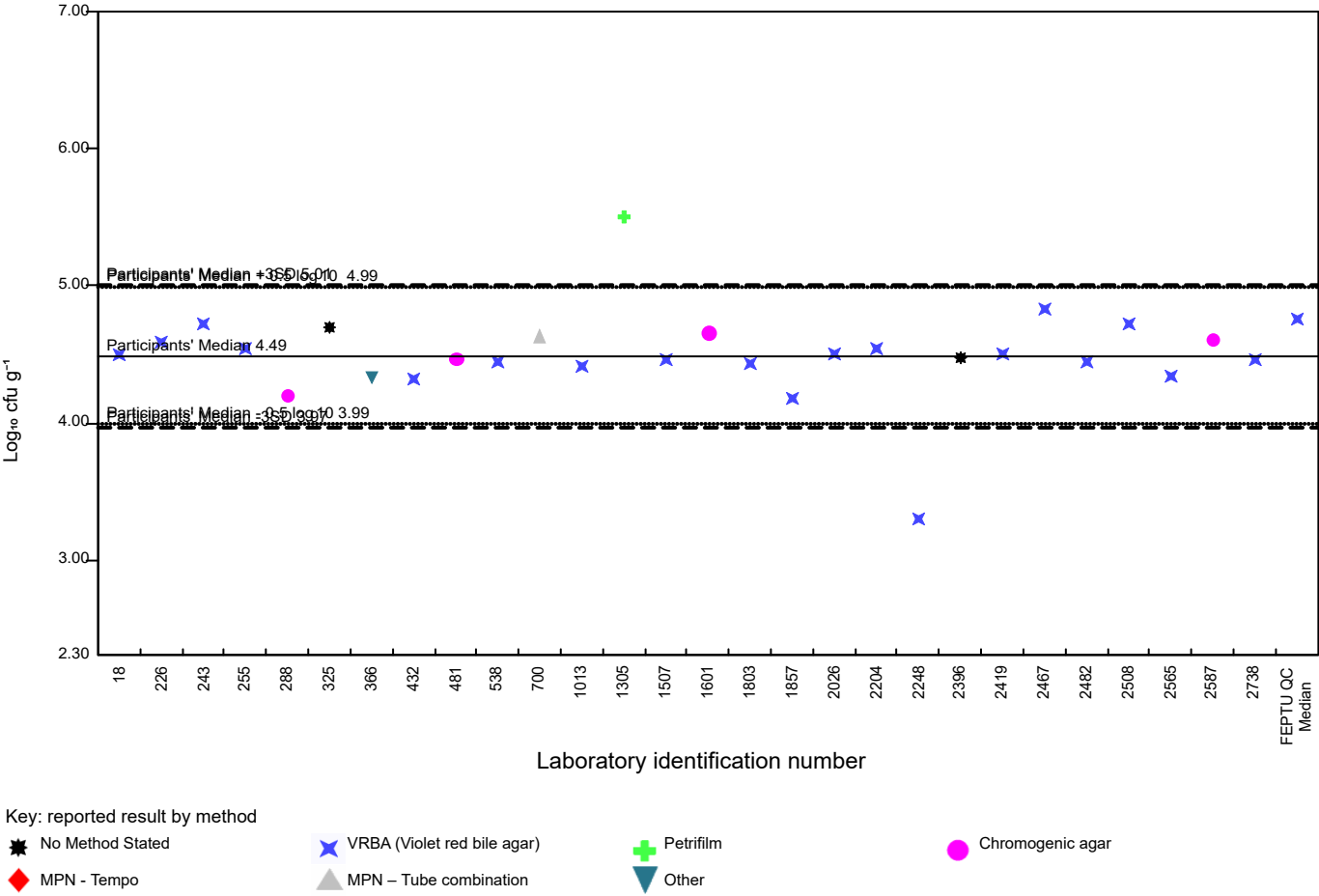
NP0213 - Yeasts

No data for graph

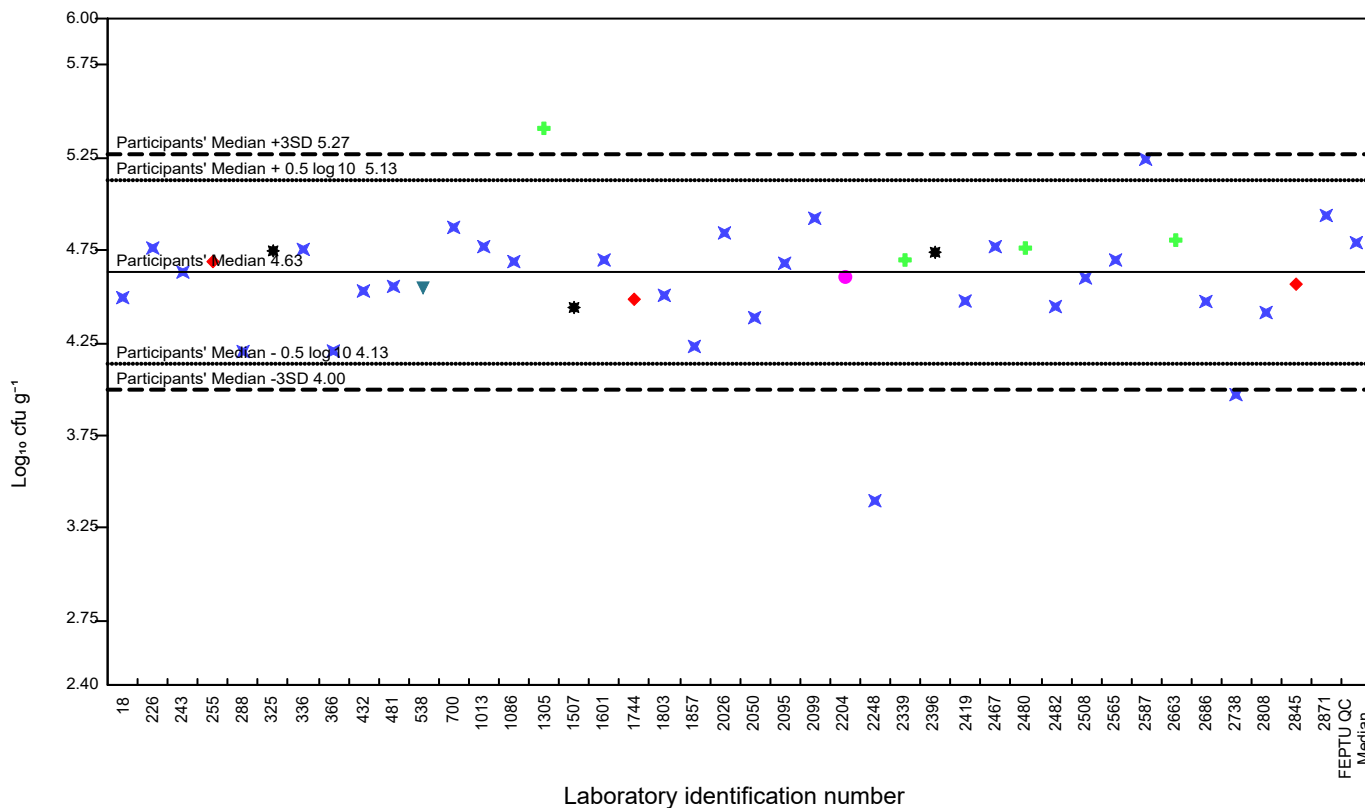
NP0213 - Moulds

No data for graph

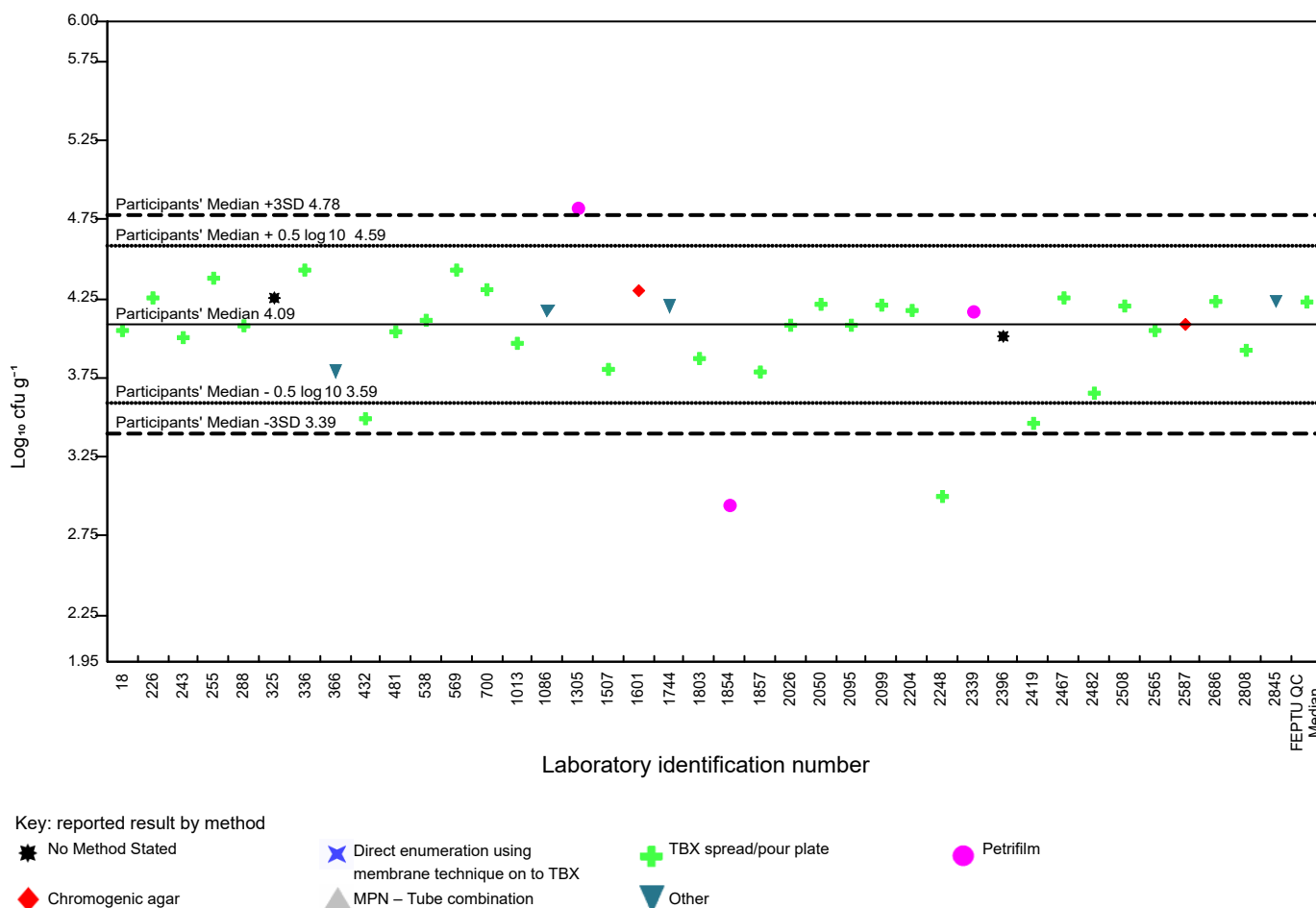
NP0213 - Coliform



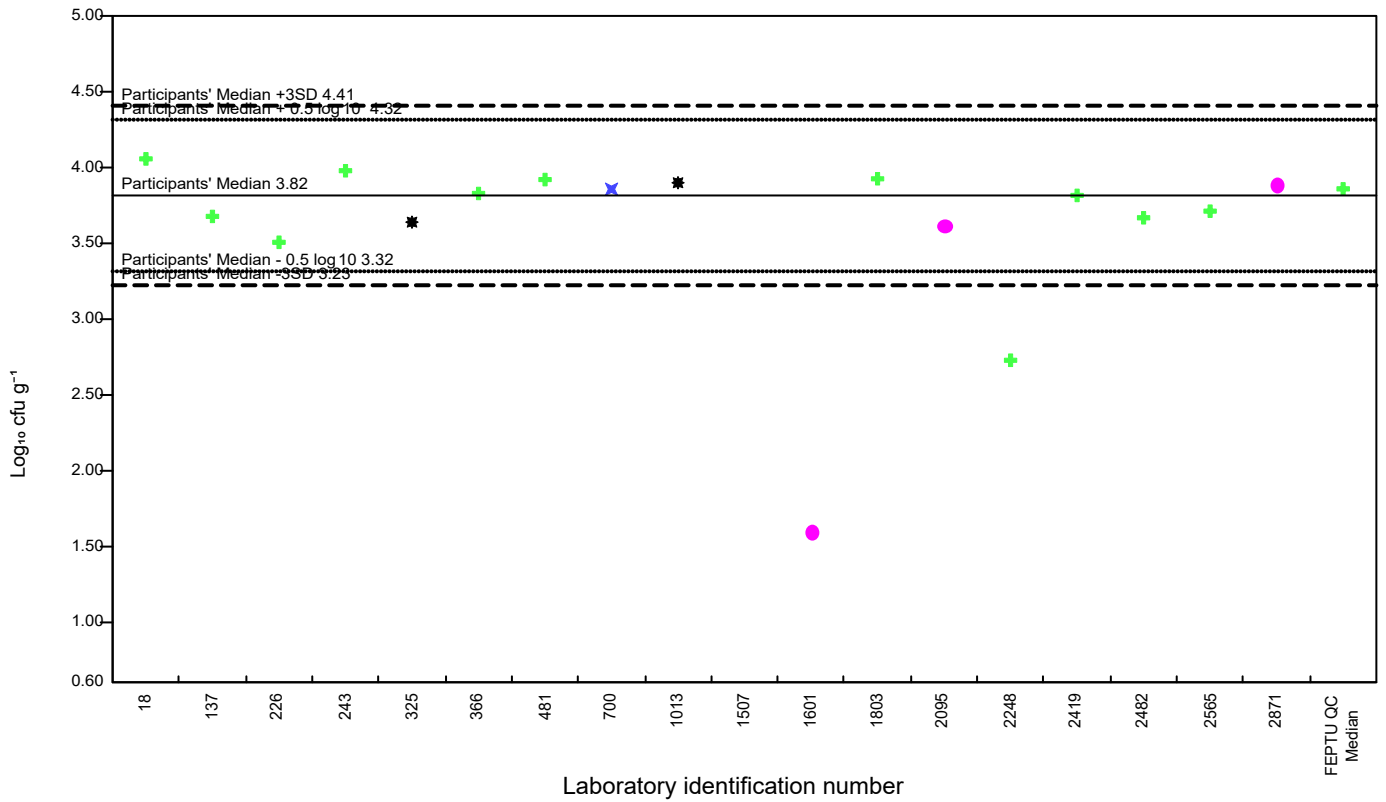
NP0213 - *Enterobacteriaceae*



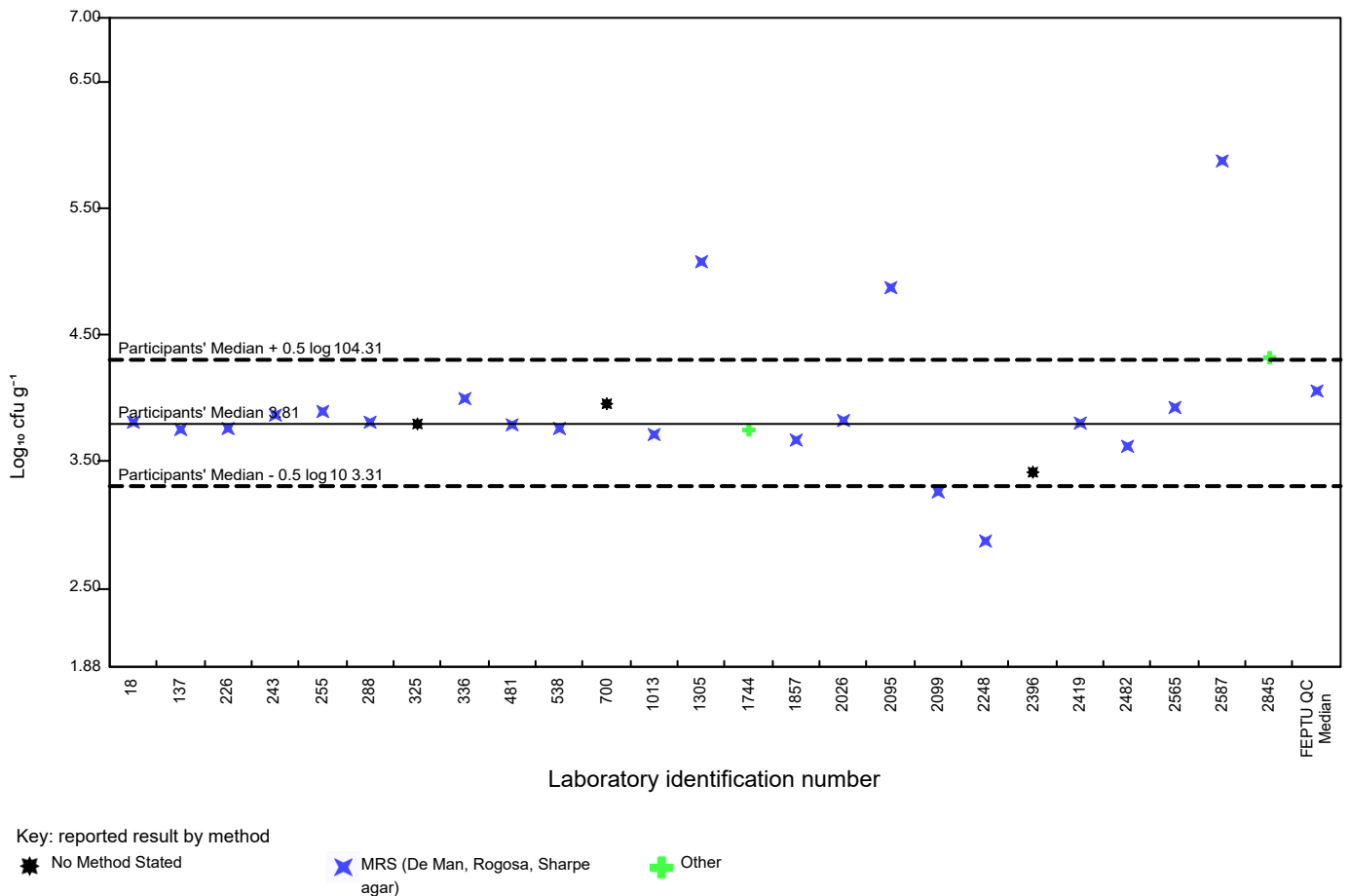
NP0213 - *Escherichia coli*



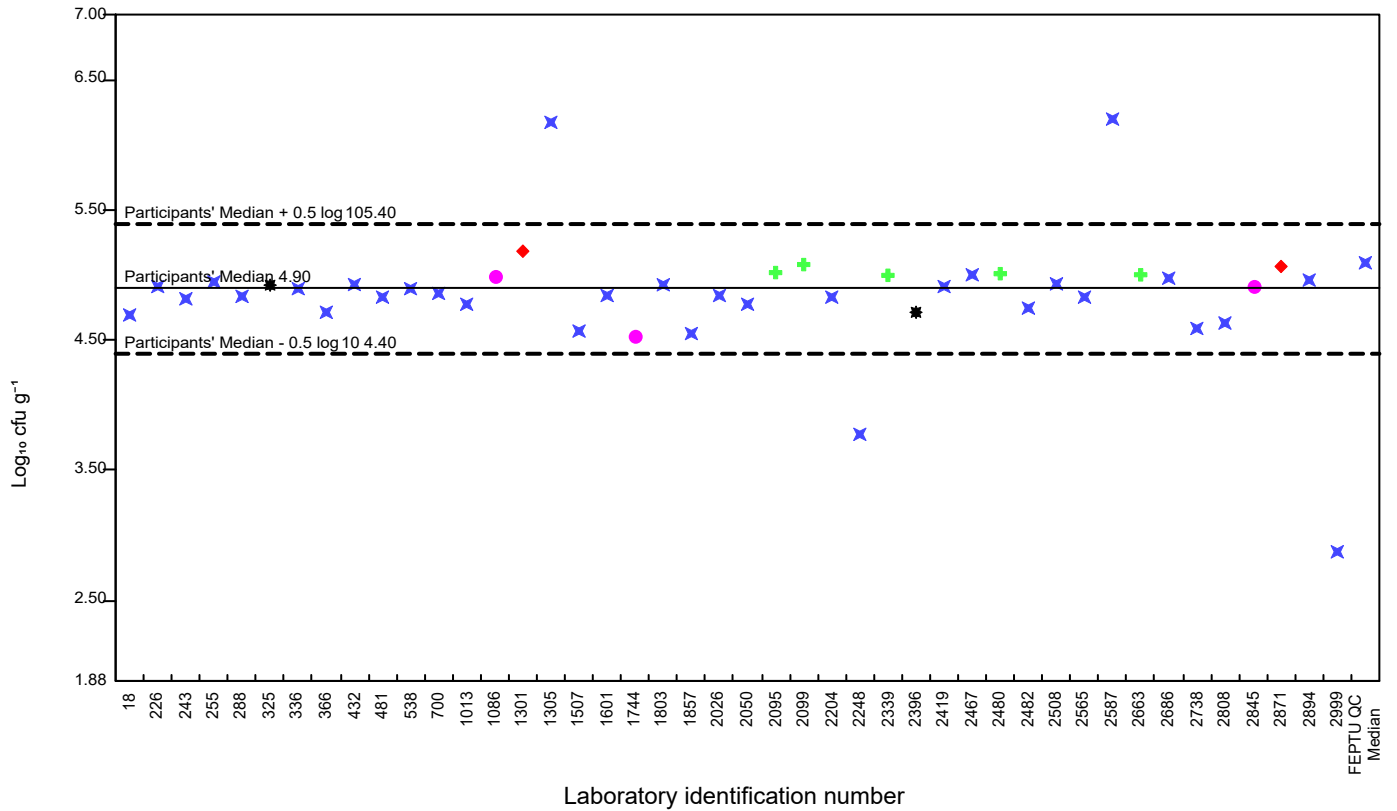
NP0213 - Enterococci



NP0213 - Lactic acid bacteria



NP0213 - Aerobic Colony Count (30°C)



Key: reported result by method

★ No Method Stated

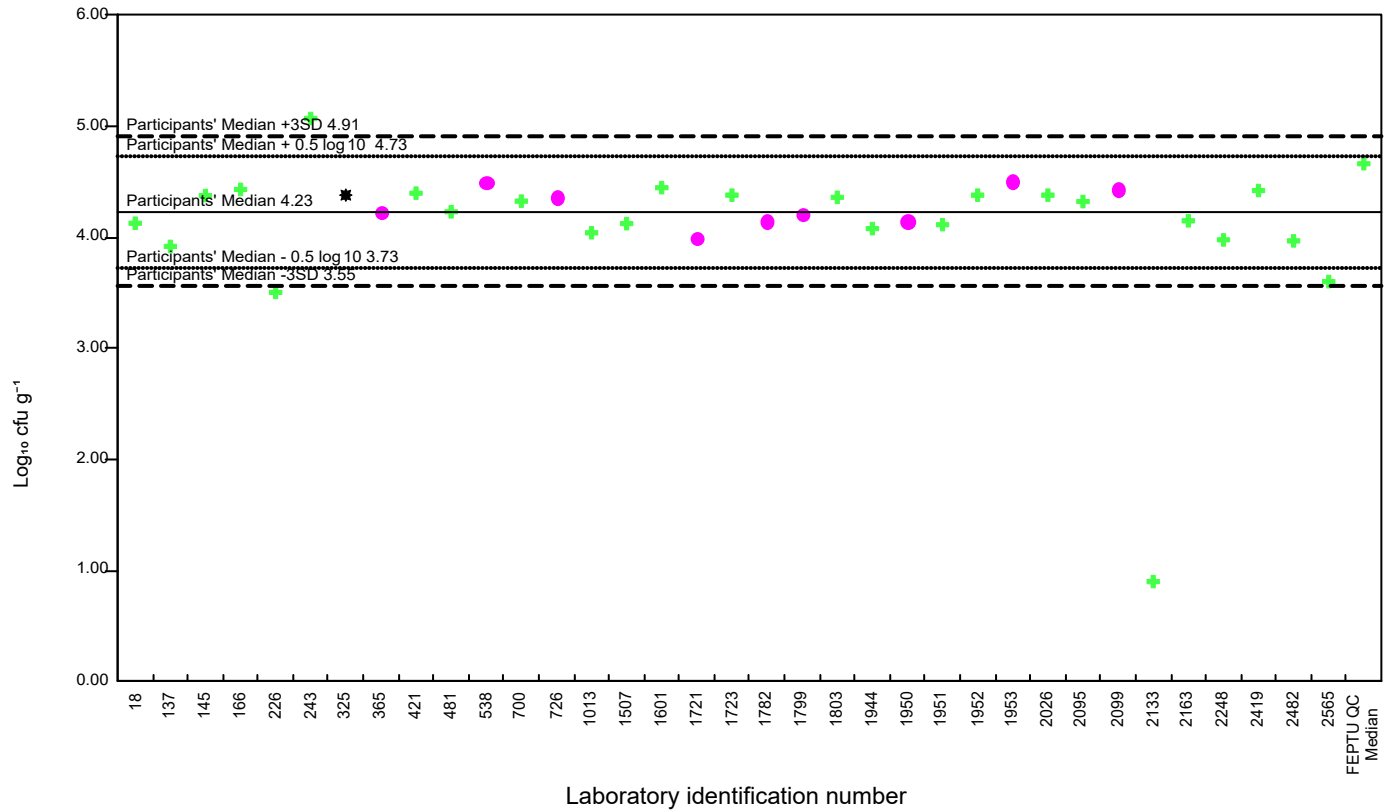
✕ Plate count agar

✚ Petrifilm

● MPN - Tempo

◆ Other

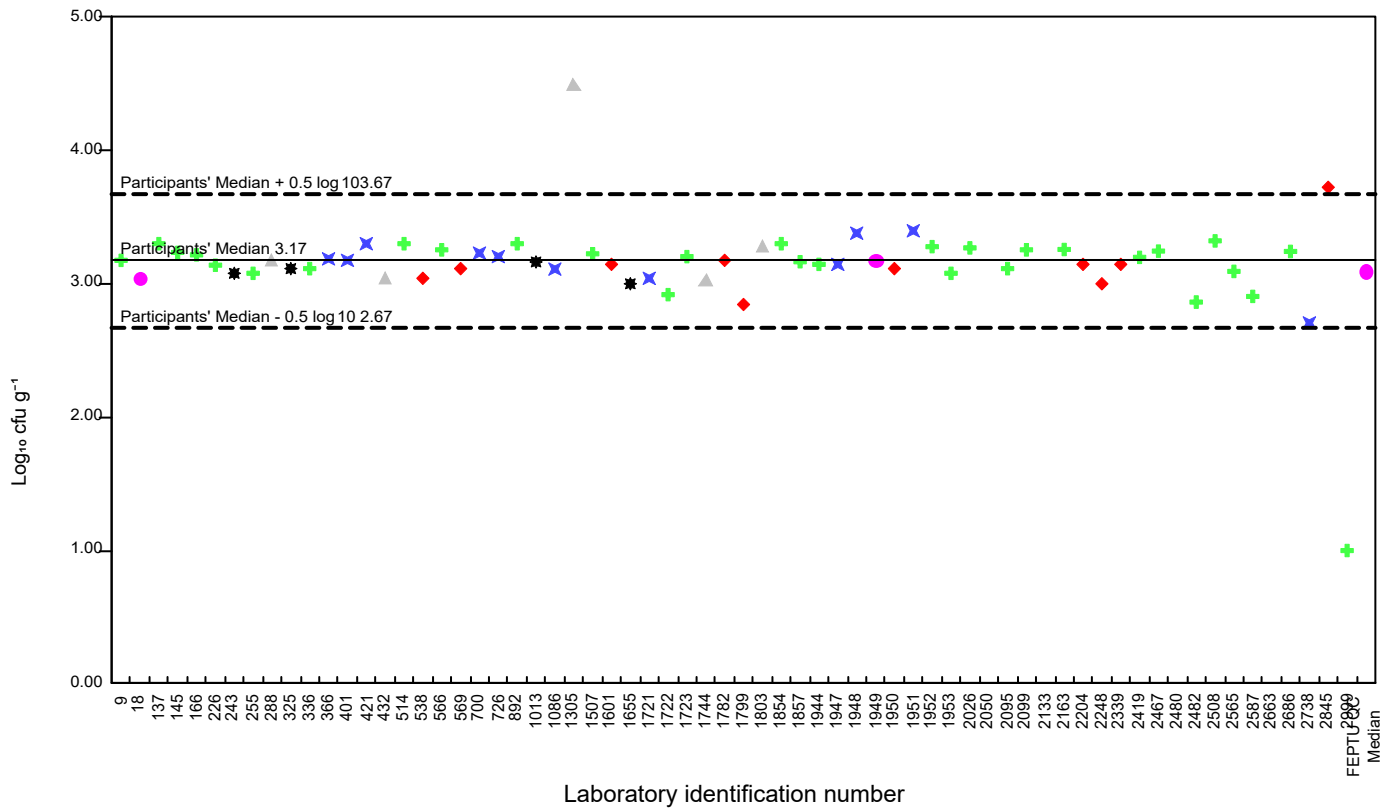
NP0214 - Presumptive *Pseudomonas* spp.



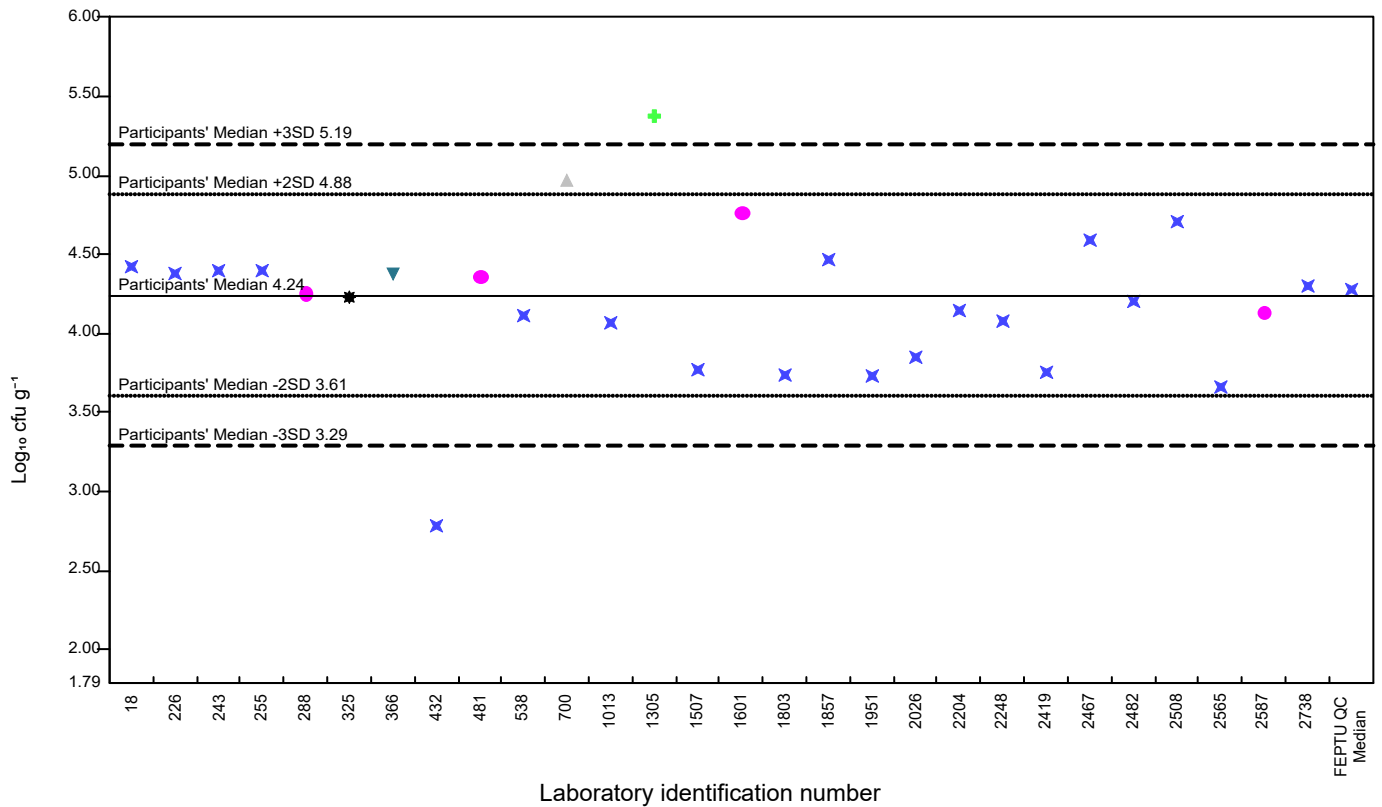
NP0214 - Yeasts

No data for graph

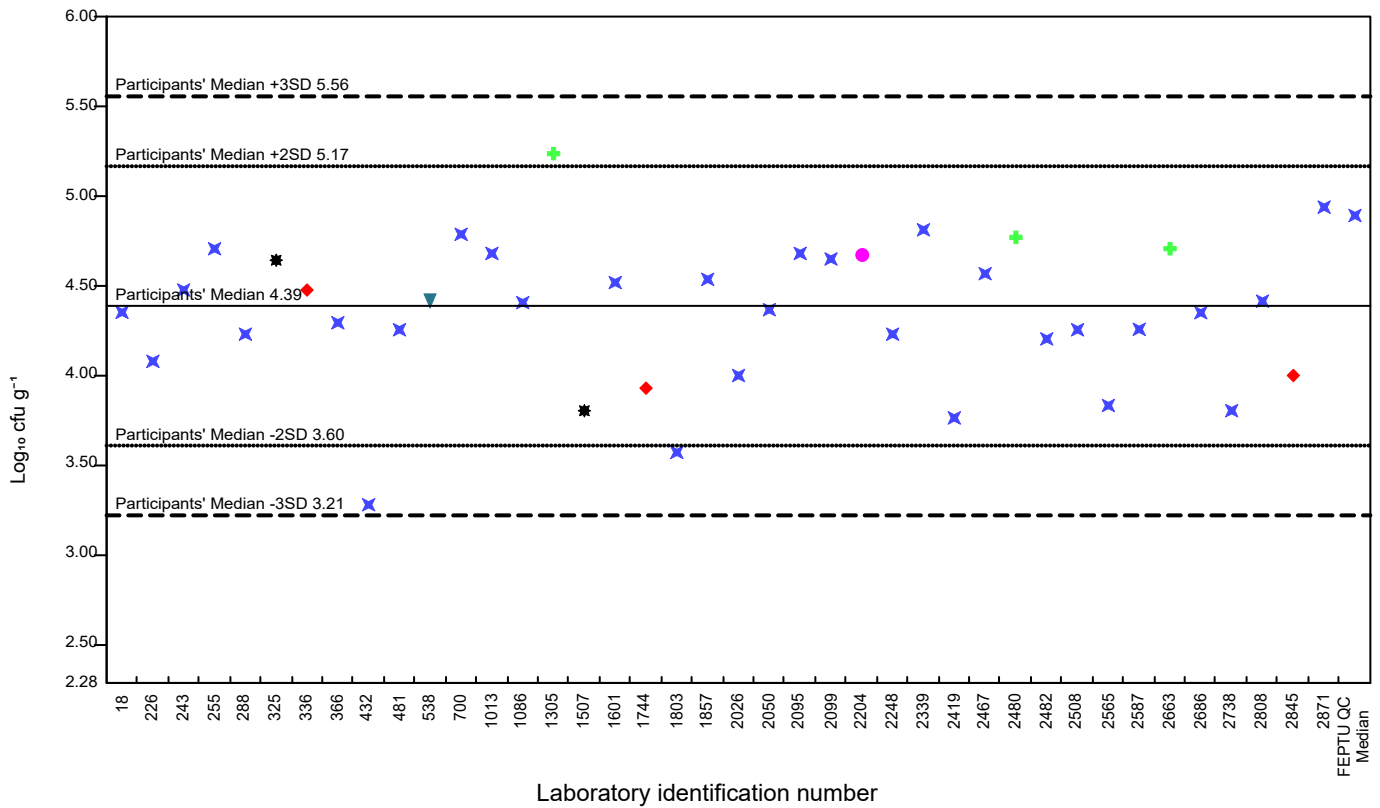
NP0214 - Moulds



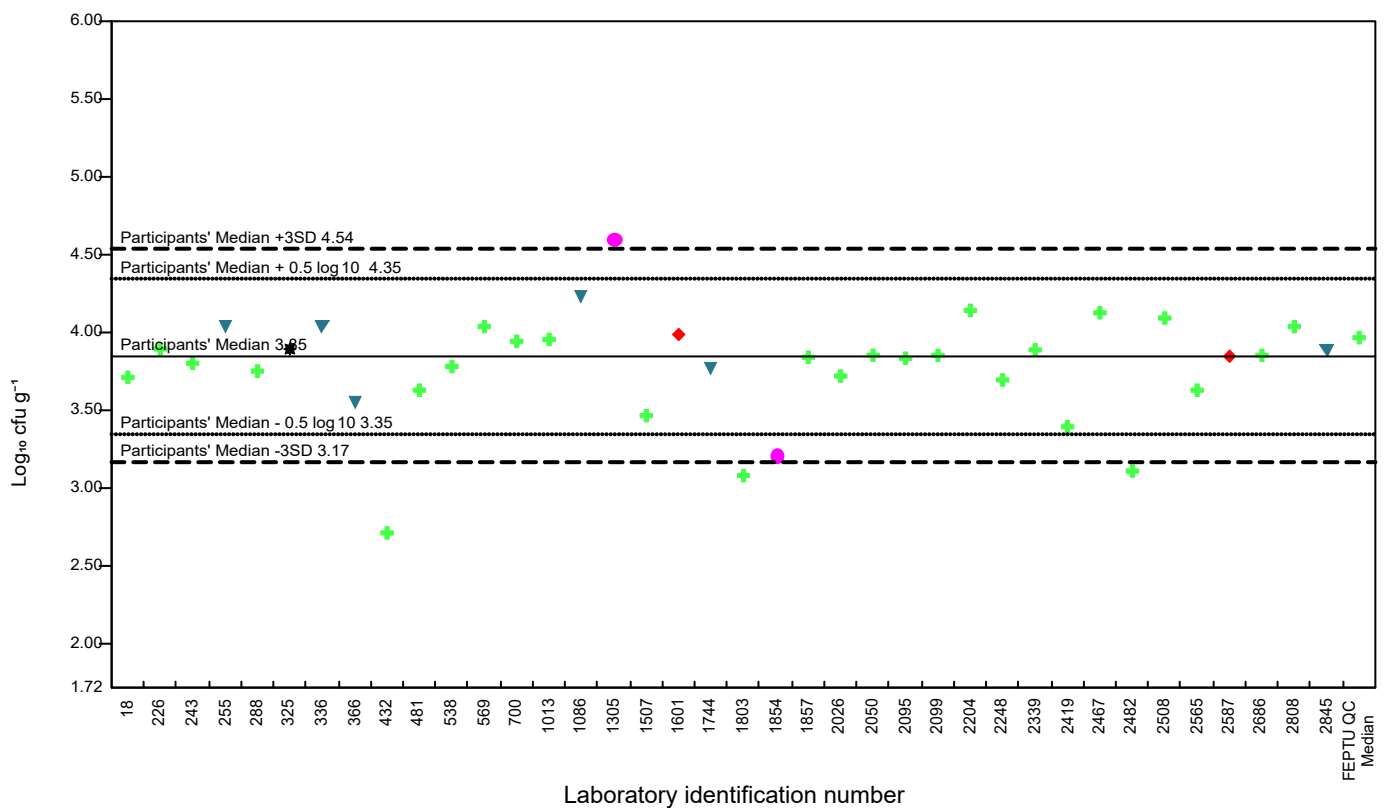
NP0214 - Coliform



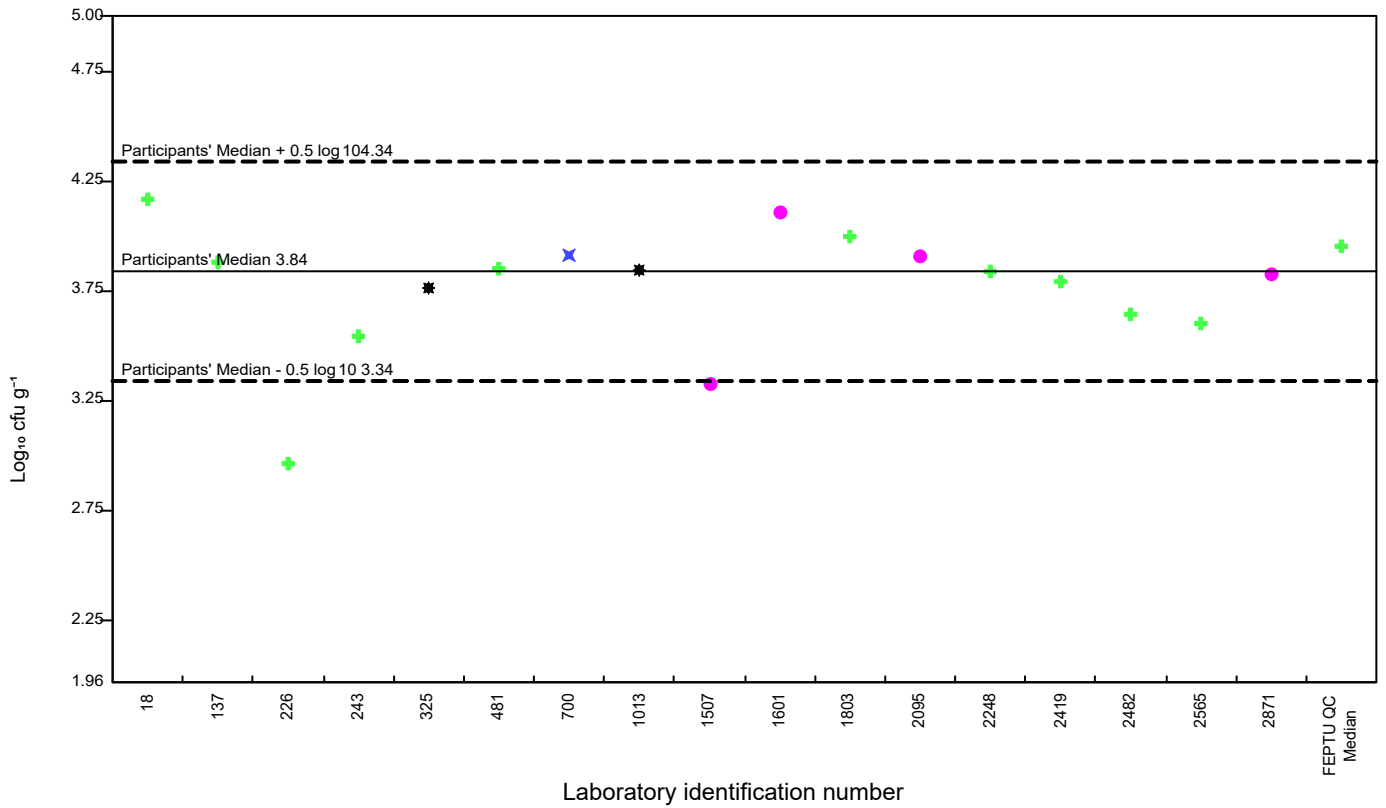
NP0214 - *Enterobacteriaceae*



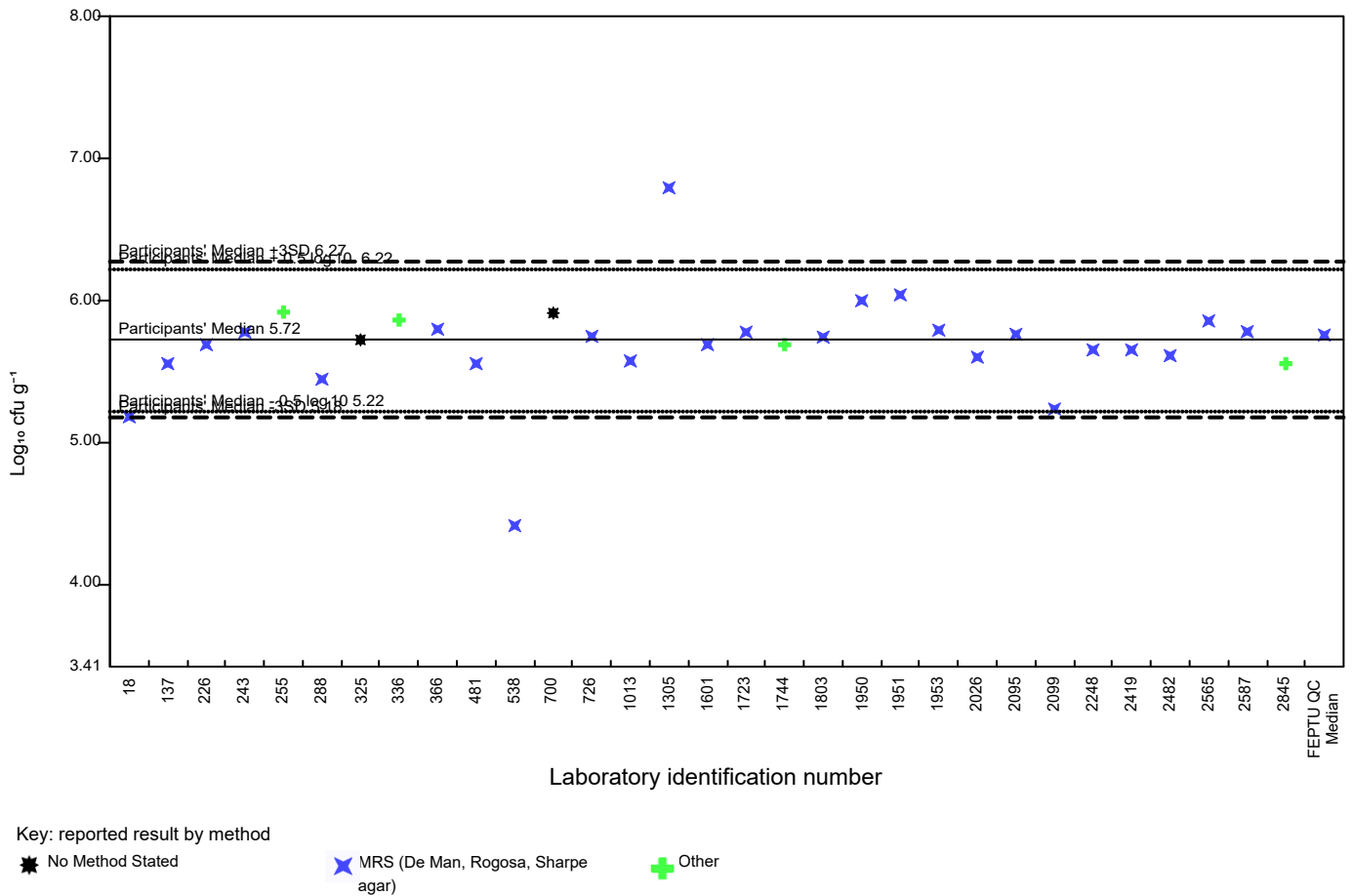
NP0214 - *Escherichia coli*



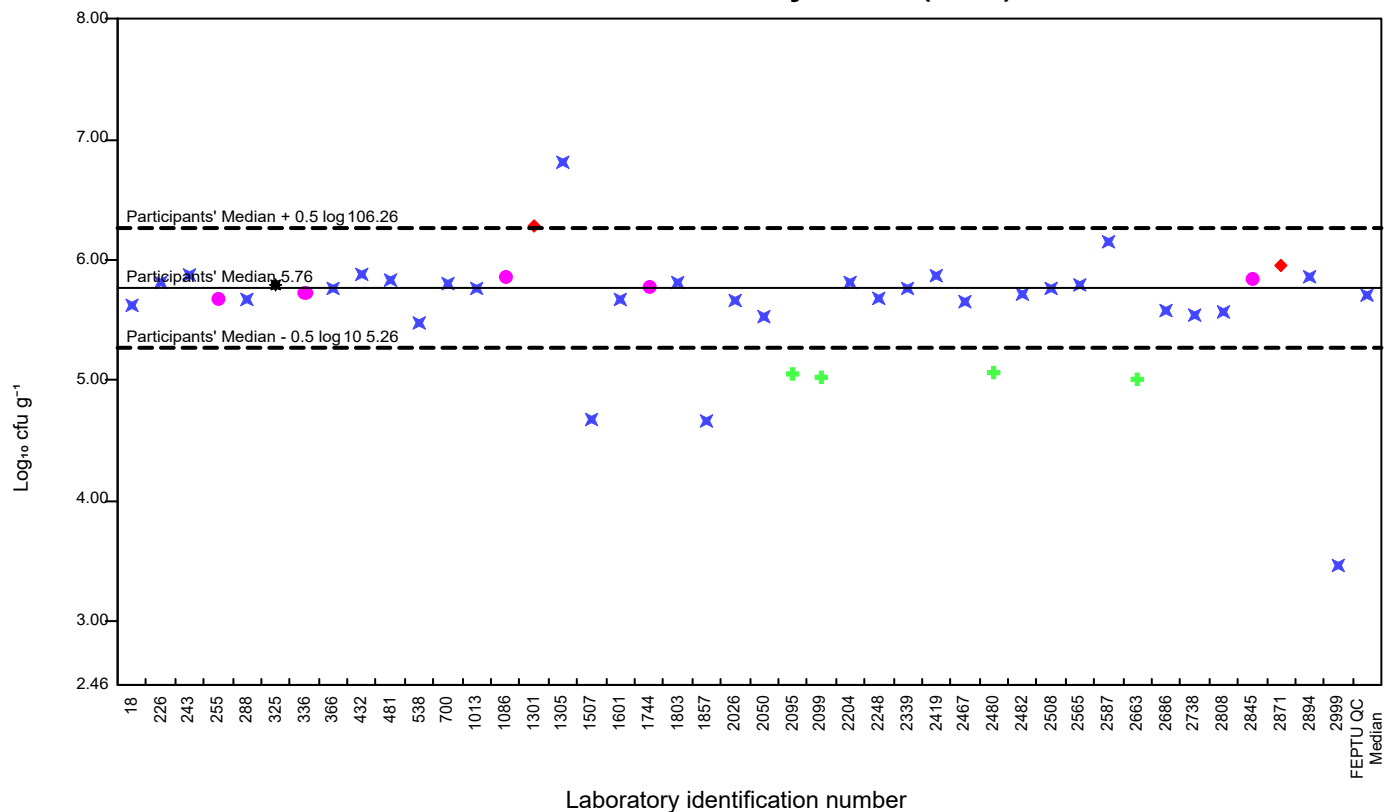
NP0214 - Enterococci



NP0214 - Lactic acid bacteria



NP0214 - Aerobic Colony Count (30°C)



Key: reported result by method

★ No Method Stated

✕ Plate count agar

✚ Petrifilm

● MPN - Tempo

◆ Other

Sample specific comment:

False positive yeasts:

Four laboratories reported a false positive result for the yeast examination for both samples when this organism was not present. All laboratories reporting an incorrect result should review their confirmation test/s as a microscopic wet preparation would have confirmed that the colonies growing on the media were not yeasts.

General comment:

Participants are advised to note that while this scheme report shows method-based presentation of results, the data presented in this way have some limitations and seek to identify trends in the results rather than assess specific method details.

Please ensure that you note on the electronic report form where results are presumptive as this has an impact on the scores allocated.

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 foodega@ukhsa.gov.uk.

Statistical evaluation

Participants are advised that for a robust statistical evaluation at least 20 reported results are required for a parameter. When statistical calculation is based on 10 – 19 result, they should be interpreted with caution as they may be overly influenced by outlying results. This is the reason why the standard deviation of the enumeration results reported can be wide.

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 foodega@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.

