QMS

Quality in Microbiology Scheme

Scheme Description

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Record of issue status and modifications

ISSUE	ISSUE DATE	DETAILS	AUTHORISED BY
13	July 2017	Added Sample 25 in skimmed milk powder matrix as well as oatmeal	T.Noblett
14	Sept 2017	Added two new multi-analyte samples - 36 Quantitative package and 37 Qualitative package. Added new sample 38 for the detection of *Clostridium perfringens* and coagulase-positive Staphylococci. Added new sample 39 for Bactoscan count. Added new analytes: Clostridium spores to sample 15; thermophilic aerobic plate count to sample 11.	T.Noblett
15	May 2018	Sample 32 SDPA set as 0.5 Added trial sample 40 Salmonella P/A in 375g SMP Added Pseudomonas species P/A to sample 26 Added Cronobacter species P/A in 10g to sample 04 Added Yersinia species P/A to sample 14 Changed format of range and units columns	K.Jones
16	July 2018	Added sample 41 for indicator and spoilage organisms in ready meal. Added enumeration of yeast and mould to sample 29. Added HHR-TSC to sample 11.	T.Noblett
17	Sept 2018	Removed individual method listings. Updated methods paragraph.	K.Jones
18	Aug 2019	Added detection of *C.perfringens* and enumeration of *Clostridium* species to sample 10. Added oatmeal matrix for 04. Added samples 42, 43, (low level Cronobacter) 44 (pathogens in ready-to-eat snack foods) Changed matrix quantity in samples 36, 37 & 40 to minimum quantity rather than pre-weighed to exact amount.	L.Chesters T.Noblett
19	June 2020	Added samples for Detection of Salmonella in egg powder, vegetables, sesame seeds, cheese. Updated UKAS logo	T.Noblett A McCarthy
20	Sep 2020	Added samples for detection of Listeria in vegetables and cheese. Added sample 45 thermophilic acidophilic bacteria in fruit.	L. Chesters
21	Sep 2020	Added additional samples in herbs and spice matrix	T Noblett
22	July 2021	Reformatted numbering for Salmonella by changing 28 to 06T, 30 to 06H and 31 to 06S. Added additional samples 06CF and 46EG Updated email address and UKAS logo	T.Noblett A Collins
23	Feb 2022	Added combined analyte for sample 27. Added Enterobacteriaceae analyte for sample 41.	C Taylor

Notes:
Where this document has been translated, the English version shall remain the definitive version.

Scheme Aims and Organisation

The primary aim of the Quality In Microbiology (QMS) is to enable laboratories performing the microbiological analysis of food and dairy products to monitor their performance and compare it with that of their peers. QMS also aims to provide information to participants on technical issues and methodologies relating to testing of food and dairy products.

The QMS scheme year operates from January to December. Further information about QMS, including test material availability, round despatch dates and reporting deadlines, are available on the current QMS application form.

Test Materials

Details of test materials available in QMS are given in Appendix A. The test parameters are continually reviewed to ensure they meet the needs of current laboratory testing and regulatory requirements.

Test material batches are tested for homogeneity for at least one test parameter where deemed appropriate. Details of homogeneity tests performed and results are given in the QMS Scheme Reports.

Some aspects of the scheme, such as test material production, homogeneity testing and stability assessment, can from time to time be subcontracted. When subcontracting occurs, it is placed with a competent subcontractor and LGC is responsible for this work. The planning of the scheme, the evaluation of performance and the authorisation of the final report will never be subcontracted.

Statistical Analysis

Information on the statistics used in QMS can be found in the General Protocol and in the Scheme Report. Methods for determining assigned values and the values for SDPA used for individual samples are given in Appendix A

Methods

Methods are listed in PORTAL. Please select the most appropriate method from the list. If none of the methods are appropriate, then please report your method as 'Other' and record a brief description in the Comments Section in PORTAL.

Results and Reports

QMS results are returned through our electronic reporting software, PORTAL, full instructions for which are provided by email.

QMS reports will be available on the website within 10 working days of round closure. Participants will be emailed a link to the report when it is available.

APPENDIX A - Description of abbreviations used

Assigned Value (AV)
The assigned value may be derived in the following ways:

- From the robust mean (RMean). This is the median of participant results after the removal of test results that are inappropriate for statistical evaluation, e.g. miscalculations, transpositions and other gross errors. Generally, the assigned value will be set using results from all methods, unless the measurement is considered method-dependant, in which case the assigned value will be set by method as illustrated in the report tables.
For some analytes, where there is a recognised reference method for that type of measurement, this may be used as the assigned value for a particular analyte i.e. it would be applied to results obtained by any method.

  Traceability: Assigned values which are derived from the participant results, or a sub-set of the results are not traceable to an international measurement standard. The uncertainty of assigned values derived in this way is estimated from the participant results, according to ISO 13528.

- From a formulation value (Formulation). This denotes the use of an assigned value derived from sample preparation details, where known and exact quantities of analyte have been used to prepare the sample.

  Traceability: Assigned values calculated from the formulation of the test sample are traceable, via an unbroken metrological traceability chain, to an international measurement standard. The measurement uncertainty of the assigned value is calculated using the contributions from each calibration in the traceability chain.

- From a qualitative formulation (Qual Form). This applies to qualitative tests where the assigned value is simply based on the presence/absence of the analyte in the test material.

  Traceability: Assigned values calculated from the qualitative formulation of the test sample are traceable to a certified reference standard or a microbiological reference strain.

- From expert labs (Expert). The assigned value for the analyte is provided by an 'expert' laboratory.

  Traceability: Assigned values provided by an 'expert' laboratory may be traceable to an international measurement standard, according to the laboratory and the method used. The uncertainty of measurement for an assigned value produced in this way will be provided by the laboratory undertaking the analysis. Details of traceability and the associated uncertainty will be provided in the report for the scheme/round.

Range
This indicates the concentration range at which the analyte may be present in the test material.

SDPA
The SDPA represents the 'standard deviation for proficiency assessment' which is used to assess participant performance for the measurement of each analyte. This may be a fixed value (as stated), a percentage (%) of the assigned value or based on the robust standard deviation of the participant measurement results, either across all methods or by method depending on whether the measurement made is method dependent (see assigned value).

Units
This indicates the units used for the assessment of data and in which participants should report their results. For some analytes in some schemes participants may have a choice of which units to report their results, however, the units stipulated in this scheme description are the default units to which any results reported using allowable alternative results will be converted to.

DP
This indicates the number of decimal places to which participants should report their measurement results.

APPENDIX A

Sample PT-MC-03　　　　　**Enumeration of Salmonella species**
Supplied as:　　　　　　　　1 x 10g skimmed milk powder

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of *Salmonella* species	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-04　　　　　**Detection of Cronobacter species**
Supplied as:　　　　　　　　1 x 25g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *Cronobacter* species	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 25g^{-1}	NA

Sample PT-MC-05　　　　　**Enumeration of osmophilic yeast and mould (ISO 21527-2)**
Supplied as:　　　　　　　　1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of osmophilic yeast Enumeration of osmophilic mould	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-06　　　　　**Detection of Salmonella species**
Supplied as:　　　　　　　　**06F** – Salmonella in generic food product - 25g oatmeal
　　　　　　　　　　　　　　　　06D – Salmonella in dairy/milk product - 25g skimmed milk powder
　　　　　　　　　　　　　　　　06EG – Salmonella in egg products - 25g egg powder
　　　　　　　　　　　　　　　　06CF - Salmonella in chicken faeces – 25g dried chicken faeces
　　　　　　　　　　　　　　　　06VG – Salmonella in salads and vegetables - 25g dried mixed vegetables
　　　　　　　　　　　　　　　　06CH – Salmonella in cheese - 25g cheese + 10ml vial
　　　　　　　　　　　　　　　　06NS – Salmonella in seeds and nuts - 25g sesame seeds + 10ml vial
　　　　　　　　　　　　　　　　06TE – Salmonella in tea – 25g tea + 10ml vial
　　　　　　　　　　　　　　　　06HB – Salmonella in herbs – 25g dried herb + 10ml vial
　　　　　　　　　　　　　　　　06SP – Salmonella in spices – 25g pepper or spice + 10ml vial

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *Salmonella* species	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 25g^{-1}	NA

Sample PT-MC-07
Supplied as:

Detection of Listeria species
07F – Listeria in food - 25g oatmeal
07D – Listeria in dairy/milk - 25g skimmed milk powder
07VG – Listeria in salads and vegetables - 25g dried mixed vegetables
07CH – Listeria in cheese - 25g cheese + 10ml vial
07HB – Listeria in herbs - 25g herb + 10ml vial

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *Listeria* species Detection of *L.monocytogenes*	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 25g^{-1}	NA

Sample PT-MC-08
Supplied as:

Enumeration of Listeria species
1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of *Listeria* species Enumeration of *L.monocytogenes*	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-09
Supplied as:

Enumeration of Enterococci
1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of Enterococci	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-10
Supplied as:

Enumeration of Clostridium species
1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *Clostridium* species	ALL	Qual Form	0 to 100,000	NA	Detected/Not detected 10g^{-1}	NA
Detection of *C.perfringens*	ALL	Qual Form	0 to 100,000	NA	Detected/Not detected 10g^{-1}	NA
Enumeration of *C.perfringens*	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of *Clostridium* species	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-11 **Spore counts**
Supplied as: 1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of mesophilic aerobic spores	ALL	RMean	0 to 100,000	log$_{10}$ 0.50	cfu g^{-1}	0
Thermophilic aerobic plate count	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of thermophilic aerobic spores	Heated for 10 min @ 80°C Heated for 12 min @ 100°C	RMean	0 to 100,000	log$_{10}$ 0.50	cfu g^{-1}	0
Enumeration of highly heat resistant thermophilic aerobic spores	Heated for 30 min @ 100°C	RMean	0 to 100,000	log$_{10}$ 0.50	cfu g^{-1}	0

Sample PT-MC-12 **Detection of Shigella species**
Supplied as: 1 x 25g oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *Shigella* species	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 25g^{-1}	NA

Sample PT-MC-13 **Detection of Vibrio species**
Supplied as: 1 x 25g oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *Vibrio* species Detection of *V. parahaemolyticus*	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 25g^{-1}	NA

Sample PT-MC-14 **Detection of Yersinia species**
Supplied as: 1 x 25g skimmed milk powder

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *Yersinia* species Detection of *Y.enterocolitica*	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 25g^{-1}	NA

Sample PT-MC-15   **Anaerobes**
Supplied as: 1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Total anaerobic mesophilic count	ALL	RMean	0 to 100,000	$\log_{10}$ 0.35	cfu g^{-1}	0
Enumeration of anaerobic sulphite-reducing bacteria	ALL	RMean	0 to 100,000	$\log_{10}$ 0.35	cfu g^{-1}	0
Enumeration of mesophilic anaerobic spores	ALL	RMean	0 to 100,000	$\log_{10}$ 0.50	cfu g^{-1}	0
Enumeration of sulphite-reducing Clostridium spores	ALL	RMean	0 to 100,000	$\log_{10}$ 0.50	cfu g^{-1}	0

Sample PT-MC-16   **TVC/indicator organisms**
Supplied as: 1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Total aerobic mesophilic count	ALL	RMean	0 to 100,000	$\log_{10}$ 0.35	cfu g^{-1}	0
Enumeration of coliforms	ALL	RMean	0 to 100,000	$\log_{10}$ 0.35	cfu g^{-1}	0
Enumeration of Enterobacteriaceae	ALL	RMean	0 to 100,000	$\log_{10}$ 0.35	cfu g^{-1}	0
Enumeration of *E. coli*	ALL	RMean	0 to 100,000	$\log_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-17   **Enumeration of Staphylococcus and Bacillus species**
Supplied as: 1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of *Staphylococcus* species Enumeration of coagulase positive Staphylococci	ALL	RMean	0 to 100,000	$\log_{10}$ 0.35	cfu g^{-1}	0
Enumeration of *Bacillus* species Enumeration of *B.cereus*	ALL	RMean	0 to 100,000	$\log_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-18   **Low-level indicator organisms**
Supplied as: 1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *E.coli*	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 10g^{-1}	NA
Detection of Enterobacteriaceae	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 10g^{-1}	NA
Detection of coliforms	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 10g^{-1}	NA
Enumeration of *E.coli*	ALL	RMean	0 to 1,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of Enterobacteriaceae	ALL	RMean	0 to 1,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of coliforms	ALL	RMean	0 to 1,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-20   **Enumeration of thermotolerant coliforms**
Supplied as: 1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of *E. coli*	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of thermotolerant coliforms	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-21   **Detection of Campylobacter species**
Supplied as: 1 x 10ml vial to represent 25g sample

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *Campylobacter* species	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 25g^{-1}	NA

Sample PT-MC-22   **Detection of E.coli O157**
Supplied as: 1 x 25g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *E.coli* O157	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 25g^{-1}	NA

Sample PT-MC-23   **Enumeration of yeast and mould (ISO 21527-1)**
Supplied as: 1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of yeast and/or mould	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-24   **Enumeration of Lactic acid bacteria**
Supplied as: **024F** – Lactic acid bacteria in food - 10g oatmeal
                             024D – Lactic acid bacteria in dairy/milk - 10g skimmed milk powder
                             024HB – Lactic acid bacteria in herb - 10g dried herb + 10ml vial
                             024SP – Lactic acid bacteria in spice- 10g pepper or spice + 10ml vial

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of lactic acid bacteria	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-25   **Psychrotrophs**
Supplied as: 1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of aerobic psychrotrophs	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-26   **Pseudomonas species**
Supplied as: 1 x 10g skimmed milk powder or oatmeal

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of *Pseudomonas* species	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *Pseudomonas* species	ALL	Qual Form	0 to 100,000	NA	Detected/Not detected 10g^{-1}	NA

Sample PT-MC-27   **Enumeration of probiotic bacteria**
Supplied as: 1 x 10ml vial to represent 10g sample (once reconstituted in 10ml diluent)

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of *Bifidobacterium* species	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of *Lactobacillus* species	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Combined enumeration of *Lactobacillus* species and *Bifidobacterium* species	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-29   **Indicator organisms in tea**
Supplied as: 1 x 10ml vial plus 10g tea matrix

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Total aerobic mesophilic count	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of coliforms	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of coagulase positive Staphylococci	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of yeast and/or mould	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-32   **Enumeration of Campylobacter species**
Supplied as: 1 x 10ml vial to represent 10g sample (once reconstituted in 10ml diluent)

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of *Campylobacter* species	ALL	RMean	0 to 100,000	log$_{10}$ 0.50	cfu g^{-1}	0

Sample PT-MC-33 **Identification Test (non-pathogen)**
Supplied as: Participants will be provided with a vial of freeze-dried material containing a single organism which will need to be cultured on non-selective agar before test. The sample may contain biosafety level 1 or 2 organisms, including Staphylococcus, Bacillus and Clostridium, but will not contain the recognised food pathogens such as Salmonella, Listeria, Campylobacter or toxigenic *E.coli*. The organism may be identified to family, genus or species level.

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Identification of unknown organism	ALL	Formulation	NA	NA	NA	NA

Sample PT-MC-34 **Salmonella identification**
Supplied as: Participants will be provided with a vial of freeze-dried material containing a strain of Salmonella which will need to be cultured on non-selective agar before test. The organisms should be identified to correct group or serovar

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Salmonella identification	ALL	Formulation	NA	NA	NA	NA

Sample PT-MC-35 **Paper exercise**
Supplied as: Participants will be provided with a photograph and a scenario in order to count the number of colonies and calculate the number of microorganisms in the original sample.

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Counting of colonies and calculation of number of microorganisms	Visual count only	Formulation	NA	Greater of robust SD or log 0.05	cfu g^{-1}	NA

Sample PT-MC-36 (A & B)   **Quantitative Package**
Supplied as: **36D –**Quantitative in dairy/milk - 2 x 10ml vial plus minimum 20g skimmed milk powder matrix
                                                    36HB – Quantitative in herbs – 2 x 10ml vial plus minimum 20g herb matrix
                                                    36SP – Quantitative in spice – 2 x 10ml vial plus minimum 20g pepper or spice matrix

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Total aerobic mesophilic count	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of coliforms	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of Enterobacteriaceae	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of *E. coli*	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of *B.cereus*	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of coagulase positive Staphylococci	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Detection of coagulase positive Staphylococci	ALL	QualForm	0 to 100,000	NA	Detected/Not detected 10g^{-1}	NA
Enumeration of yeast and/or mould	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-37 (A & B)   **Qualitative Package**
Supplied as: **37D -** 2 x 10ml vial plus minimum 200g skimmed milk powder matrix

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *E. coli* O157	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 25g^{-1}	NA
Detection of *Listeria* species Detection of *Listeria monocytogenes*	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 25g^{-1}	NA
Identification of *Listeria* species	ALL	Formulation	NA	NA	NA	NA
Detection of *Salmonella* species	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected 25g^{-1}	NA

Sample PT-MC-38   **Detection of Clostridium species and Staphylococcus species in milk**
Supplied as: 1 x 10ml vial plus minimum 20g skimmed milk powder matrix

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *Clostridium perfringens*	ALL	Qual Form	0 to 100	NA	Detected/Not detected 10g^{-1}	NA
Detection of coagulase positive Staphylococci	ALL	Qual Form	0 to 100	NA	Detected/Not detected 10g^{-1}	NA

Sample PT-MC-39   **Bacterial count in milk**
Supplied as: 1 x 10g skimmed milk powder matrix

Analyte	Method	AV	Range cfu ml^{-1}	SDPA	Reporting units	DP
Bacterial level by Bactoscan	Bactoscan	RMean	ALL	TBC	Bacteria ml^{-1}	NA
Bacterial level by colony count	ALL	RMean	ALL	TBC	cfu ml^{-1}	NA

Sample PT-MC-40   **Detection of Salmonella species in pooled sample**
Supplied as: 1 x 10ml vial plus minimum 375g skimmed milk powder matrix

Analyte	Method	AV	Range cfu 375g^{-1}	SDPA	Reporting units	DP
Detection of *Salmonella* species	ALL	Qual Form	0 to 100	NA	Detected/Not detected 375g^{-}	NA

Sample PT-MC-41   **Indicator and spoilage organisms in 'ready meal'**
Supplied as: 1 x 10ml vial plus 1 x 10g dried food matrix

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Total aerobic mesophilic count	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of coliforms	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of Enterobacteriaceae	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of coagulase positive Staphylococci	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0
Enumeration of yeast and/or mould	ALL	RMean	0 to 100,000	log$_{10}$ 0.35	cfu g^{-1}	0

Sample PT-MC-42   **Detection of Cronobacter species at low-level**
Supplied as: 1 x 10ml vial plus 1 x 25g skimmed milk powder matrix

Analyte	Method	AV	Range cfu $25g^{-1}$	SDPA	Reporting units	DP
Detection of *Cronobacter* species	ALL	Qual Form	0 to 50	NA	Detected/Not detected $25g^{-1}$	NA

Sample PT-MC-43   **Detection of Cronobacter species in 375g**
Supplied as: 1 x 10ml vial plus minimum 375g skimmed milk powder matrix

Analyte	Method	AV	Range cfu $375g^{-1}$	SDPA	Reporting units	DP
Detection of *Cronobacter* species	ALL	Qual Form	0 to 50	NA	Detected/Not detected $375g^{-}$	NA

Sample PT-MC-44   **Pathogens in 'ready-to-eat' food**
Supplied as: 1 x 10ml vial plus minimum 100g dried processed food e.g. crisps, cakes, biscuits, confectionary, cereal and other snacks.

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Detection of *E. coli* O157	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected $25g^{-1}$	NA
Detection of *Listeria* species Detection of *Listeria monocytogenes*	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected $25g^{-1}$	NA
Identification of *Listeria* species	ALL	Formulation	NA	NA	NA	NA
Detection of *Salmonella* species	ALL	Qual Form	0 to 1,000	NA	Detected/Not detected $25g^{-1}$	NA

Sample PT-MC-45   **Thermophilic acidophilic bacteria**
Supplied as: 1 x 10ml vial plus 10g fruit matrix

Analyte	Method	AV	Range cfu g^{-1}	SDPA	Reporting units	DP
Enumeration of thermophilic acidophilic bacteria	MF BAT AGAR	RMean	0 to 1,000	log_{10} 0.35	cfu g^{-1}	0
Detection of guaiacol producing thermophilic acidophilic bacteria	MF BAT AGAR	Qual Form	0 to 1,000	NA	Detected/Not detected $10g^{-1}$	NA

Sample PT-MC-46 **Detection of Salmonella Typhimurium and/or Enteritidis in Egg powder**
Supplied as: 46EG – Egg products – 2 x 25g egg powder

Analyte	Method	Range cfu g^{-1}	AV	SDPA	Report Units	DP
Detection of *Salmonella* Typhimurium	All	0 to 1,000	Qual Form	N/A	cfu 25g^{-1}	N/A
Detection of *Salmonella* Enteritidis	All	0 to 1,000	Qual Form	N/A	cfu 25g^{-1}	N/A