Method Comparison Study Report for the ISO 16140-2:2016 validation of Compact Dry SL, for the detection of *Salmonella* spp. in three defined categories (Ready to eat and ready to reheat meat and poultry products, eggs and egg products and environmental samples)

MicroVal study number: 2022LR110

Method/Kit name: Compact Dry *Salmonella* (CDSL)

Report version: Summary report, 24/11/23

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Foreword

This report is prepared in accordance with ISO 16140-2:2016 and MicroVal technical committee interpretation of ISO 16140-2 v.1.0

Company: Shimadzu Diagnostics Corporation

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Method/Kit name: Shimadzu Compact Dry Salmonella (CDSL)

Validation standard: Microbiology of the food chain— Method validation

Part 1: Vocabulary (ISO 16140-1:2016) and

Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method (ISO 16140-2:2016)

Reference method: Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of *Salmonella* Part 1: Detection of *Salmonella* spp. (ISO 6579-1:2017+A1:2020)

Scope of validation:

- Ready to eat and ready to reheat meat and poultry products
- Eggs and egg products
- Environmental samples

Certification orgnization: Lloyd's Register

List of abbreviations

A(lt)	Alternative method
AL	Acceptability Limit
Art. Cont.	artificial contamination
CFU	Colony Forming Units
EL	Expert Laboratory
FP	False Positive
FPR	False Positive Ratio
g	Gram
h	Hour
ILS	Interlaboratory Study
LOD	Level of Detection
MCS	Method Comparison Study
min	minute
ml	millilitre
MVTC	MicroVal Technical Committee
NA	Negative Agreement
na	not applicable
ND	Negative Deviation
neg (-)	negative/no growth/no reaction/target not detected
NS	Non-Suspect growth
nt	not tested
PA	Positive Agreement
PD	Positive Deviation
pos (+)	positive/growth/target detected
PPNA	Presumptive Positive Negative Argreement (belongs to the False Positive results)
PPND	Presumptive Positive Negative Deviation (belongs to the False Positive results)
R(ef)	Reference method
RLOD	Relative Level of Detection
RT	Relative Trueness
S	Suspect growth
SE	Relative Sensitivity
SP	Relative Specificity
TP	True Positive

For Salmonella studies

BGA	Brilliant Green Agar
BPW	Buffered Peptone Water
MKTTn	Muller-Kauffmann Tetrathionate-novobiocin broth
MSRV	Modified Semi-solid Rappaport Vassiliadis medium
RVS	Rappaport-Vassiliadis Soya broth
XLD	Xylose Lysine Deoxycholate agar
XR	XLD streaked from RVS
BR	BGA streaked from RVS
XM	XLD streaked from MKTTn
BM	BGA streaked from MKTTn

Contents

1 Introduction

In this project a MicroVal validation study, based on ISO 16140-2:2016, of alternative method for the detection of ISO 16140-2:2016, in three different categories was carried out by Campden BRI as the MicroVal Expert Laboratory.

The alternative method used is:

The alternative method used is: Compact Dry Salmonella (CDSL)

This is a rehydratable plate method that contains selective ingredients to allow the detection of *Salmonella spp.* The detection of *Salmonella* is determined through lysine decarboxylase activitiy which changes medium colour from blue-purple to yellow as a resulting of medium alkalization.

Three additional characterisitcs of *Salmonella* are also indicated by the mediuim however these are informative only:

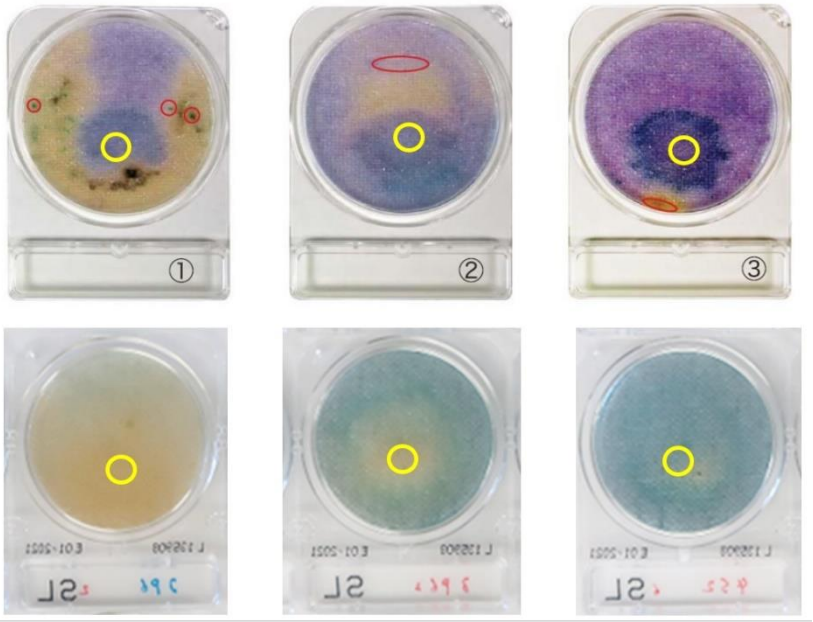
1) Decomposition of chromogenic substrate with specific enzyme on *Salmonella* Green colonies.

2) Hydrogen sulphide production leading to black colonies.

3) Detection of *Salmonella* motility.

These three characteristics were recorded in the study, although a positive result was determined by a yellow colouring anywhere on the plate.

Examples of positive reactions of *Salmonella* spp.isolated on CDSL are shown below:



Key:

Negative reactions

There are two stages to the CD SL method:

Initially a primary enrichment of food samples (25g) diluted 1 in 10 in BPW is incubated for 22±2h at 36±1°C. Environmental samples were diluted in BPW as defined in ISO 6887 series or ISO 18593 (2018). The shortest time of 20h was used for this study.

After primary enrichment, a 0.1ml aliquot of the BPW is added to the top of a CDSL plate and a 1ml volume of sterile distilled water is added and allowed to diffuse. The plates are then incubated at 41.5°C ±1°C for 20-24h. The shortest time of 20h was used for this study.

The reference method used is: Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of *Salmonella*. Part 1: Detection of *Salmonella* spp. (ISO 6579-1:2017+A1:2020).

Scope of the validation study is 3 named categories listed within (ISO 16140-2:2016)

Categories are:

- Ready to eat and ready to reheat meat and poultry products
- Eggs and egg products
- Environmental samples

Criteria evaluated during the study have been:

- Method Comparison Study (MCS)
  - Sensitivity study
  - Relative level of detection study
  - Inclusivity and exclusivity study
- Interlaboratory Study (ILS)

2 Method protocols

The Method Comparison Study was carried out using 25 gram test portions of sample material.

As the reference and the alternative method share the initial (pre)-enrichment step the same test portion was used for the two methods. All resulting data were treated as paired data (EN-ISO 16140-2).

2.1 Reference method

See the flow diagram in Annex A for food samples, and Annex B for environmental samples.

Sample preparations used in the reference method and the alternative method were done according to ISO 6887-series and ISO 6579-1 for all sample matricies in this report.

2.2 Alternative method

See the flow diagram of the alternative method in Annex A for food samples, and Annex B for environmental samples.

See the CD SL kit insert in Annex C.

The alternative method principle is based on isolation of target organism on rehydratable plates containig chromagenic and selective agents.

During the validation study, the following was recorded: growth (+/-), colour of inoculation point, colour of surrounding areas, and number of colonies if present. A positive result was determined as a yellow colouring anywhere on the plate.

2.3 Study design

As the reference and the alternative method share the initial (pre)-enrichment step the same test portion was used for the two methods. All resulting data were treated as **paired** data (EN-ISO 16140-2).

3 Method comparison study

3.1 Sensitivity Study

The sensitivity study (SE) is the ability of the method selected to detect the analyte by either the reference or the alternative method.

3.1.1 Categories and sample types
A total of 3 Categories were included in this validation study.

A minimum of 60 Items for each Category were tested by both the reference method and the alternative method in the sensitivity study, with a minimum of 30 positive samples per Category.

Each Category was made up of 3 Types, with at least 20 Items representative for that Type.

The categories, the types and the number of samples analyzed are presented in Table 1.

Table 1 - Categories, types and number of samples analyzed

Categories	Types	Items (examples)	No of samples
1) Ready to eat and ready to reheat meat and poultry products	Cooked products	Cooked sliced ham, pate, cooked sliced chicken	20
	Fermented or dried	Salami, chicken sausage	20
	Raw cured smoked	Dry cured ham, smoked turkey fillet	20
2) Eggs and egg products	Eggs unprocessed	Shell eggs ; organic, barn eggs, freerange hen eggs, duck eggs	20
	Eggs processed	Egg yolk, egg white, whole liquid egg, powders	20
	RTE/RTRH Egg products	Quiche, omlette, egg custard	20
3) Environmental	Dust and residues	Dust wipes manfacturing environments	20
	Cleaning and process waters	Wash water, process water	20
	Surface samples	Equipment, floors, walls	20

180 samples were analyzed. The distribution of positive and negative samples per tested category and type is given respectively in Table 2.

Table 2 - Distribution per tested category and type

Categories	**Types**	**Positive samples***	**Negative samples**	**Total**
1) Ready to eat and ready to reheat meat and poultry products	A) Cooked products	10	10	20
	B) Fermented or dried	10	10	20
	C) Raw cured smoked	10	10	20
	Total	**30**	**30**	**60**
2) Eggs and egg products	A) Eggs unprocessed	10	10	20
	B) Eggs processed	10	10	20
	C) RTE/RTRH Egg products	10	10	20
	Total	**30**	**30**	**60**
3) Environmental	A) Dust and residues	10	10	20
	B) Cleaning and process waters	10	10	20
	C) Surface samples	10	10	20
	Total	**30**	**30**	**60**
Grand total		**90**	**90**	**180**

*Positive by at least one of the methods

3.1.2 Test sample preparation

No naturally contaminated samples were found in pre-screening studies. It was therefore necessary to use artificial contamination procedures samples using a range of seeding protocols and strains in order to examine a wide range of different conditions.

Artificial contaminations were done by spiking or seeding protocols.

When spiking the strains were stressed using various injury protocols. The injury efficiency was evaluated by comparing enumeration results onto selective and non-selective agars (respectively NA and XLD). Details of the artificial contamination protocols are presented in Annex D for reference.

Naturally contaminated samples were preferentially analyzed. If necessary, artificial contaminations were obtained by:

- Spiking with contaminated injured cells (heat treatment)

- Seeding with strains isolated from the same samples type, before storage for 48 h to 72h at 4°C or at -20°C for 2 weeks.

Surface samples were taken from a food manufacturing environment and inoculated with 2-5 cfu/swab *Salmonella*.

Further details of the artificial inoculation used in the studies is given in the Table 3 below.

Table 3 – details of artificial inoculation

Sample type	Procedure for artificial contamination
Eggs unprocessed	Seeding and storage of samples post inoculation for 48h ±2h at 2-8°C to chill stress the cells
Ready to eat foods (Combined category RTE/RTRH meat and poultry), Cooked meat and poultry products Heat treated eggs and egg products	Spiked with heat stressed cultures with a minimum of 0.5log injury.

The same strain was not used to inoculate more than 5 samples.

50 samples were artificially contaminated by spiking, using 11 different strains and 2 injury protocols. All 50 spiked test portions gave a positive result. Most of the spiking inoculations, after injury protocols on the inoculum, were lower or equal to 5 CFU/sample. The maximum level of contamination used in the study was 6cfu per portion.

40 samples were artificially contaminated by seeding, using 8 different strains and one seeding protocol. All 40 test portions that were inoculated by seeding gave a positive result. Most of the seeding inoculations were lower or equal to 5 CFU/sample. The maximum level of contamination used in the study was 6cfu per portion.

3.1.3 Confirmation protocols
ISO 6579-1:2017+A1:2020

Presumptive positive colonies isolated on XLD and BGA were confirmed using the Bruker Biotyper MALDI-ToF.

Alternative method: CD SL

Following a presumptive positive result, CD SL was streaked onto XLD and BGA and typical colonies were recorded. Up to 5 typical colonies were confirmed using the Bruker Biotyper MALDI-ToF.

3.1.4 Sensitivity study results

All raw data on the sensitivity study are given in Annex E. Sample numbers in **bold** indicate artificial inoculation of the sample (see Annex D for details on artificial inoculation).

Table 4 shows the summary of results of the reference method and the alternative methods for **all Categories**.

Table 5 shows the Interpretation of sample results between the reference and alternative method (based on the confirmed alternative method).

Table 4 - Summary of sensitivity study results – all categories

	Reference method positive (R+)	**Reference method negative (R-)**
Alternative method positive (A+)	Positive agreement (R+/A+) **PA = 87**	Positive deviation (R-/A+) **PD = 0**
Alternative method negative (A-)	Negative deviation (R+/A-) **ND = 3**	Negative agreement (R-/A-) **NA = 90**

Table 5 – Interpretation of sample results between the reference and alternative method (based on the confirmed alternative method)

Category	**Type**		**PA**	**NA[1]**	**PD**	**ND[2]**	**PPNA**	**PPND**
Ready to eat and ready to reheat meat and poultry products	a	Cooked products	9	10	0	1	0	0
	b	Fermented or dried	10	10	0	0	1	0
	c	Raw cured smoked	10	10	0	0	0	0
	Total		**29**	**30**	**0**	**1**	**1**	**0**
Eggs and egg products	a	Eggs unprocessed	10	10	0	0	0	0
	b	Eggs processed	9	10	0	1	0	0
	c	RTE/RTRH Egg products	9	10	0	1	0	0
	Total		**28**	**30**	**0**	**2**	**0**	**0**
Environmental	a	Dust and residues	10	10	0	0	0	0
	b	Cleaning and process waters	10	10	0	0	0	0
	c	Surface samples	10	10	0	0	0	0
	Total		**30**	**30**	**0**	**0**	**0**	**0**
Grand Total			**87**	**90**	**0**	**3**	**1**	**0**

[1] NA: including PPNA, [2] ND: including PPND

3.1.5 Sensitivity study calculations

The sensitivity study parameters as specified in Table 6 were calculated for all Categories and Types, and the overview is given in Table 7.

Table 6 – Formula to calculate the sensitivity parameters

Sensitivity for the alternative method	$SE_{alt} = \frac{(PA + PD)}{(PA + ND + PD)} \times 100\%$
Sensitivity for the reference method	$SE_{ref} = \frac{(PA + ND)}{(PA + ND + PD)} \times 100\%$
Relative trueness	$RT = \frac{(PA + NA)}{N} \times 100\%$
False positive ratio for the alternative method	$FPR = \frac{(FP)}{NA} \times 100\%$

Table 7 - Overview calculated sensitivity parameters per Category and Type

Category	Type		PA	NA [1]	PD	ND [2]	FP [3]	SE alt	SE ref	RT	FPR
Ready to eat and ready to reheat meat and poultry products	a	Cooked products	9	10	0	1	0	90.0	100.0	95.0	0.0
	b	Fermented or dried	10	10	0	0	1	100.0	100.0	90.9	10.0
	c	Raw cured smoked	10	10	0	0	0	100.0	100.0	100.0	0.0
	Total		**29**	**30**	**0**	**1**	1	96.7	100.0	95.2	3.3
Eggs and egg products	a	Eggs unprocessed	10	10	0	0	0	100.0	100.0	100.0	0.0
	b	Eggs processed	9	10	0	1	0	90.0	100.0	95.0	0.0
	c	RTE/RTRH Egg products	9	10	0	1	0	90.0	100.0	95.0	0.0
	Total		**28**	**30**	**0**	**2**	0	93.3	100.0	96.7	0.0
Environmental	a	Dust and residues	10	10	0	0	0	100.0	100.0	100.0	0.0
	b	Cleaning and process waters	10	10	0	0	0	100.0	100.0	100.0	0.0
	c	Surface samples	10	10	0	0	0	100.0	100.0	100.0	0.0
	Total		**30**	**30**	**0**	**0**	0	100.0	100.0	100.0	0.0
Grand Total			**87**	**90**	**0**	**3**	**1**	**96.7**	**100.0**	**97.3**	**1.1**

[1] NA: including PPNA, [2] ND: including PPND, [3]FP = PPNA + PPND

3.1.6 Discordant results

Negative deviations are listed in Table 8.

Table 8 - Negative deviations

Category/Type	Sample nº	Alternative method results	Confirmatory test results	Inoculation (CFU/Sample)
Ready to eat and ready to reheat meat and poultry products – cooked produc	M6	Presumptive negative	+ve on XLD and BGA, confirmed as *Salmonella s*	*Salmonella california* (4.8)
Eggs and egg products – eggs processed	E29	Presumptive negative	+ve on XLD and BGA, confirmed as *Salmonella s*	*Salmonella muenchen* (4.0)
Eggs and egg products – and RTRH egg products	E44	Presumptive negative	-ve on XLD and BGA,	*Salmonella oranienburg* (4.3)

Analysis of the discrepant results revealed that there was no bias of food type or inoculating strain on the negative deviations obtained in the study.

The analysis of discordant results according to ISO 16140-2:2016 for a paired study is given in Table 9.

Table 9 - Interpretation of the sensitivity study results (paired study)

Category	Negative Deviations (ND[1])	Positive deviations (PD)	ND-PD	Acceptability Limit (AL)	ND+PD	Acceptability Limit (AL)
Ready to eat and ready to reheat meat and poultry products	1	0	1	3	1	6
Eggs and egg products	2	0	2	3	2	6
Environmental	0	0	0	3	0	6
Total	**3**	**0**	**3**	**5**	**3**	**10**

[1] ND: including PPND

3.1.7 Conclusion sensitivity study
The observed values for ND-PD and ND+PD for the individual categories and for all categories meet the acceptability limits (observed values ≤ AL).

3.2 Relative level of detection study

The relative level of detection is the level of detection at P = 0,50 (LOD_{50}) of the alternative method divided by the level of detection at P = 0,50 (LOD_{50}) of the reference method.

3.2.1 Categories, sample types and strains
One sample type and one relevant target micro-organism for this sample type was chosen for each of the Categories in this validation study, as shown in Table 10.

Table 10 - List of selected types and strains per category, as tested within the relative level of detection study.

Category	Food item	Strain	Reference number	Strain origin	Pre-test storage of samples
Ready to eat and ready to reheat meat and poultry products	Cooked meat product	*S.* Stanley	CRA 1057	Boiled ham	Heat stressed e.g at 50°C for 10 minutes
Eggs and egg products	Liquid pasteurised egg	*S.* Anatum	CRA 1060	Egg	Heat stressed e.g at 50°C for 10 minutes
Environmental	Process water	*S.* Albuquerque	CRA 1276	Irrigation water	Held at 2-8°C for 48-72 Hours

3.2.2 Test sample preparations
Three levels of artificial contamination were prepared for each type:

- Negative control level: One non-inoculated in order to get 5 test portions,
- Low level: One inoculated between 0.2 and 2 CFU/sample in order to get 20 test portions providing fractional recovery,
- Higher level: One inoculated between 2 and 5 CFU/sample in order to get 5 test portions contaminated at a higher level.

After inoculation, the matrices were stored as described in Table 11.

3.2.3 RLOD study results
The tabulated raw data on the RLOD study are given in Annex G.

The RLOD calculations were performed using the Excel spread sheet (version 15-08-2015) of the international standard as described in ISO 16140-2: 2016.

The RLOD per Category is given in Table 11.

Table 11 – Presentation of RLOD before and after confirmation of the alternative method results

Type (Category)	RLOD using the alternative method results	RLOD using the confirmed alternative method results
Eggs and Egg containing products	1.161	1.161
RTE and RTRH meat and poultry	1.000	1.000
Environmental	1.000	1.000
Combined	**1.047**	**1.047**

The RLOD values (using the confirmed alternative method results) meet the acceptability limit, which is 1.5 for paired studies for all categories tested.

In addition, LOD50 values were calculated using the equations quoted in Wilrich and Wilrich (2009) Journal of AOAC International 92 (6) 1763-1772 downloaded from

www.wiwiss.fu-berlin.de/fachbereich/vwl/iso/ehemalige/wilrich.index.html

The LOD50 per Category is given in Table 12

Table 12 – Presentation of LOD50 after confirmation of the alternative method results

Type (Category)	LOD50 cfu per portion	Lower confidence limit cfu per portion	Upper confidence limit cfu per portion
Alternative method - CD SL			
Eggs and Egg containing products	0.918	0.543	1.551
RTE and RTRH meat and poultry	0.399	0.211	0.754
Environmental	0.200	0.114	0.350
Combined	**0.492**	**0.339**	**0.715**
Reference method ISO 6579-1:2017			
Eggs and Egg containing products	0.800	0.471	1.361
RTE and RTRH meat and poultry	0.399	0.211	0.754
Environmental	0.200	0.114	0.350

Type (Category)	LOD50 cfu per portion	Lower confidence limit cfu per portion	Upper confidence limit cfu per portion
Combined	**0.451**	**0.310**	**0.656**

3.2.4 Conclusion RLOD study

The RLOD values (using the confirmed alternative method results) meet the acceptability limit, which is 1.5 for paired studies for all categories tested.

3.3 Inclusivity/exclusivity study

Inclusivity is the ability of the alternative method to detect the target analyte from a wide range of strains.

Exclusivity is the lack of interference from a relevant range of non-target strains of the alternative method.

3.3.1 Protocols
Inclusivity: 100 strains were freshly cultured in nutrient broth at 37°C overnight. Dilutions of each isolate were made in order to inoculate 10 -100 CFU/225 ml BPW. The BPW broth was incubated for 20h at 36±1°C. The alternative method protocol was then performed (no sample material was added).

Exclusivity: 30 strains were freshly cultured in appropriate broth at 37°C. Dilutions were made in order to inoculate about 10^5 CFU/ 225 ml non-selective BPW. The BPW broth was incubated for 20h at 36±1°C. The alternative method was then performed (no sample material was added).

3.3.2 Results inclusivity and exclusivity study
All raw data on inclusivity and exclusivity are given in Annex F.

A total of 100 strains were tested for **inclusivity**. 100 of these strains showed the expected positive result.

A total of 30 strains were tested for **exclusivity**. 28 of the 30 strains showed the expected negative result. 2 strains analyzed showed a positive result. The two isolates were *Citrobacter freundii* CRA 7455 and *Hafnia alvei* CRA 1561.

Citrobacter freundii CRA 7455 was presumptive positive on CDSL and gave typical colonies on streaking onto XLD + BGAM (first part of confirmation step). Analysis of the typical colonies using MALDI-ToF identified the colony as *Citrobacter freundii*, therefore confirmed negative.

Hafnia alvei CRA 1561, was presumptive positive on CD SL, however failed to give typical colonies on isolation on XLD and BGAm. This isolate was therefore confirmed as negative

<u>Conclusion inclusivity and exclusivity study</u>

The alternative CD SL detection method is selective and specific.

4 Conclusions Method Comparison Study

Overall, the conclusions for the Method Comparison Study are:

The observed values for ND-PD and ND+PD for the individual categories and for all categories meet the acceptability limits (observed values ≤ AL).

The RLOD values (using the confirmed alternative method results) meet the acceptability limit, which is 1.5 for paired studies, for all categories tested.

The alternative CD SL detection method is selective and specific.

5 Interlaboratory study

The inter-laboratory study is a study performed by multiple laboratories testing identical samples at the same time, the results of which are used to estimate alternative-method performance parameters.

5.1 Study organisation

Collaborators number

Samples were sent to 10 laboratories; 14 collaborators were involved in the study. Laboratories from four countries were involved in the study: England, Wales, Northern Ireland and Poland.

Matrix and strain used

Cooked sliced ham samples were inoculated with *Salmonella* Stanley strain Campden ref 1057, isolated from boiled ham.

Samples

Samples were prepared and inoculated on 24/7/23, as described below:

- 24 blind coded samples were prepared for analysis by the Compact Dry CD SL method and by the reference method: Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of *Salmonella*. Part 1: Detection of *Salmonella* spp. (ISO 6579-1:2017+A1:2020).
- 1 non inoculated cooked sliced ham was included for aerobic meophilic flora enumeration by ISO 4833-1:2013+A1:2022
- 1 water flask labelled “Temperature Control” which was frozen with the samples to check that the temperature conditions during transit did not defrost the samples

All the samples were pre-weighed in stomacher bags in 25g amounts and individually inoculated at the required level.

The samples were stored frozen at ≤-18°C and defrosted prior to analysis as recommended in ISO 6887-1. Sample analysis was started on Monday 31st July 2023. Stability studies had been previously conducted to show that the required level of target organisms would be present after 7 and 9 days frozen storage. The expert lab analysed a set of samples on Monday 31st July 2023.

Inoculation
The target inoculation levels were:

- Level 0: 0 CFU/25 g,
- Level 1: 1.6 CFU/25 g,
- Level 2: 6.7 CFU/25 g

The actual inoculation levels were:

- Level 0: 0 CFU/25 g,
- Level 1: 0.5 CFU/25 g,
- Level 2: 2.5 CFU/25 g

Each laboratory received 24 samples of 25 g, i.e. 8 samples per inoculation level and method plus a sample for analysis of mesophilic aerobic count.

Labelling and shipping

Blind coded samples were placed in isothermal boxes, which contained cooling blocks, and express-shipped to the different laboratories.

A temperature control flask containing a sensor was added to the package in order to register the temperature profile during the transport, the package delivery and storage until analyses.

Samples were shipped in 24h to 48h to the involved laboratories. The temperature conditions had to stay lower or equal to 8°C during transport and in the labs.

Analyses

Collaborative study laboratories and the expert laboratory carried out the analyses on Monday 31st July 2023 with the alternative and reference methods. The analyses by the reference method and the alternative method were performed on the same day.

5.2 Experimental parameters controls

5.2.1 Detection of Salmonella in the matrix before inoculation

In order to detect the presence of *Salmonella*, the reference method was performed on six portions (25 g) before the inoculation. All the results were negative.

5.2.2 Strain stability during transport

Duplicate samples inoculated at low level (1.8 cfu per 25g) and high level (4.7 cfu per 25g) were tested by reference and alternative methods after 7 days and 9 days storage at <-18°C, the results are shown in Table 13.

Table 13 – Salmonella stability in the matrix

Day	Reference method (detection)				Alternative method (detection)			
	Low 1	Low 2	High 1	High 2	Low 1	Low 2	High 1	High 2
Day 0	detected	detected	detected	detected	detected	detected	detected	detected
Day 7	detected	detected	detected	detected	detected	detected	detected	detected
Day 9	not detected	detected	detected	detected	not detected	detected	detected	detected

5.2.3 Contamination levels

The samples were prepared for the ILS were inoculated as follows.

A culture of *Salmonella* Stanley (Campden ref 1057) was grown overnight in Nutrient Broth and incubated at 37°C. The levels in the culture were checked by plating out on count agar and the *Salmonella* Stanley was chilled prior to use in inoculating samples on 24th July 2023.

The overnight culture was diluted such that L1 samples were inoculated at a level of 0.5 cfu/25g portion and L2 were inoculated with a level of 2.5 cfu/25g portion on 24th July 2023. These values were used so that the cells would follow the stabilisation pattern shown in the stability trials (Table 13).

5.2.4 Logistic conditions

The temperatures measured at reception by the collaborators, the temperatures registered by the thermo-probe, and the receipt dates are given in Table 14.

Table 14 - Sample temperatures at receipt

Collaborator	Temperature measured by the probe at receipt (°C)	Water blank temperature measured at receipt (°C)	Receipt date and time	State of the package and samples at the receipt	Analysis date
1	-1.8°C	N/A – water blank still remains frozen	27/7/2023 12:30	Acceptable	31/7/2023
2	6.9°C	8.9°C	28/07/2023 13:40	Samples damaged	31/7/2023
3	Not provided	-0.1°C	25/7/2023 10:00	Acceptable	31/7/2023
4	-3.1°C	N/A – water blank still frozen	26/7/2023 10:44	Acceptable	31/7/2023
5	-1.5°C	N/A – water blank still frozen	26/7/2023 10:44	Acceptable	31/7/2023
6	2.0°C	2.6°C	27/7/2023 11:00	Acceptable	31/7/2023
7	-2.0°C	-0.5°C	27/7/2023 10:53	Acceptable	31/7/2023
8	1.0°C	9.3°C	26/7/2023 13:30	Intact	31/7/2023
9	0°C	5.9°C	27/7/2023 10:00	Acceptable	31/7/2023
10	3.5°C	8.7°C	27/7/2023 10:00	Acceptable	31/7/2023

Collaborator	Temperature measured by the probe at receipt (°C)	Water blank temperature measured at receipt (°C)	Receipt date and time	State of the package and samples at the receipt	Analysis date
11	Not provided	7.4°C	28/7/2023 12:45	Undamaged	31/7/2023
12	2°C	2.8°C	28/7/2023 9:00	Acceptable	31/7/2023
13	3.1°C	3.5°C	28/7/2023 12:35	Acceptable	31/7/2023
14	-1.2°C	N/A still frozen	28/7/2023 8:00	Acceptable	31/7/2023

No problem was encountered during the transport or at receipt for the 13 out of 14 collaborators. All the samples were delivered on time and in appropriate conditions to 13 laboratories. The samples were damaged for Laboratory 2, and so the results were excluded due to potential issues with cross contamination. To determine whether the transport conditions were acceptable (samples below <8°C during transit and at receipt), the temperature measured by the temperature probe at sample receipt was assessed. If the temperature probe data was not provided, then the water blank temperature was assessed. Temperatures during shipment and at receipt were all correct..

5.3 Calculation and summary of data

5.3.1 MicroVal Expert laboratory results

The expert lab enumeration level for mesophilic flora was 300 cfu/g.

The results obtained by the expert laboratory are given in Table 15.

Table 15 – Results obtained by the expert lab.

Level	Reference method	Alternative method
L0	0/8	0/8
L1	2/8	2/8
L2	7/8	7/8

5.3.2 Results obtained by the collaborative laboratories

- *Mesophilic aerobic flora enumeration*

Depending on the Lab results, the enumeration levels varied from 10 to 220 CFU/g.

- *Salmonella detection*

14 collaborators participated to the study. The results obtained by the individual collaborators in the inter-laboratory study are summarised in Table 16 (reference method) and Table 17 (alternative method).

Table 16 - Positive results by the reference method (ALL the collaborators)

Collaborator	**Contamination level**		
	L0	**L1**	**L2**
1	0/8	2/8	8/8
2	No data received		
3	0/8	2/8	8/8
4	0/8	2/8	8/8
5	0/8	0/8	7/8
6	0/8	3/8	7/8
7	0/8	4/8	8/8
8	0/8	2/8	7/8
9	0/8	2/8	4/8
10	1/8	2/8	8/8
11	0/8	2/8	7/8
12	0/8	2/8	6/8
13	0/8	3/8	8/8
14	0/8	2/8	6/8

TOTAL	**P_0 = 1**	**P_1 = 28**	**P_2 = 92**

Table 17 - Positive results (before and after confirmation) by the alternative methods (ALL the collaborators)

Collaborators	**Contamination level**					
	L0		***L1***		***L2***	
	Before confirmation	*After confirmation*	*Before confirmation*	*After confirmation*	*Before confirmation*	*After confirmation*
1	0/8	0/8	2/8	2/8	8/8	8/8
2	No data received					
3	0/8	0/8	2/8	2/8	8/8	8/8
4	0/8	0/8	2/8	2/8	8/8	8/8
5	0/8	0/8	0/8	0/8	7/8	7/8
6	0/8	0/8	3/8	3/8	7/8	7/8
7	0/8	0/8	4/8	4/8	8/8	8/8
8	0/8	0/8	2/8	2/8	7/8	7/8
9	0/8	0/8	2/8	2/8	4/8	4/8
10	0/8	0/8	2/8	2/8	8/8	8/8
11	0/8	0/8	2/8	2/8	7/8	7/8
12	0/8	0/8	2/8	2/8	7/8	7/8
13	0/8	0/8	3/8	3/8	8/8	8/8
14	0/8	0/8	2/8	2/8	6/8	6/8
TOTAL	**P_0 = 0**	**CP_0 = 0**	**P_1 = 28**	**CP_1 = 28**	**P_2 = 93**	**CP_2 = 93**

5.3.3 Results of the collaborators retained for interpretation

The results obtained with the 13 collaborators kept for interpretation are presented in Table 18 (reference method) and Table 19 (alternative method).

Lab 10 was removed due to a positive result in the blank samples, which indicates potential cross contamination.

Table 18 - Positive results by the reference method (Without Lab 2 and 10)

Collaborators	Contamination level		
	L0	L1	L2
1	0/8	2/8	8/8
3	0/8	2/8	8/8
4	0/8	2/8	8/8
5	0/8	0/8	7/8
6	0/8	3/8	7/8
7	0/8	4/8	8/8
8	0/8	2/8	7/8
9	0/8	2/8	4/8
11	0/8	2/8	7/8
12	0/8	2/8	6/8
13	0/8	3/8	8/8
14	0/8	2/8	6/8
TOTAL	**$P_0 = 0$**	**$P_1 = 26$**	**$P_2 = 84$**

Table 19 - Positive results (before and after confirmation) by the alternative methods (Without Lab 2 and 10)

Collaborator	**Contamination level**					
	L0		***L1***		***L2***	
	Before confirmation	*After confirmation*	*Before confirmation*	*After confirmation*	*Before confirmation*	*After confirmation*
1	0/8	0/8	2/8	2/8	8/8	8/8
3	0/8	0/8	2/8	2/8	8/8	8/8
4	0/8	0/8	2/8	2/8	8/8	8/8
5	0/8	0/8	0/8	0/8	7/8	7/8
6	0/8	0/8	3/8	3/8	7/8	7/8
7	0/8	0/8	4/8	4/8	8/8	8/8
8	0/8	0/8	2/8	2/8	7/8	7/8
9	0/8	0/8	2/8	2/8	4/8	4/8
11	0/8	0/8	2/8	2/8	7/8	7/8
12	0/8	0/8	2/8	2/8	7/8	7/8
13	0/8	0/8	3/8	3/8	8/8	8/8
14	0/8	0/8	2/8	2/8	6/8	6/8
TOTAL	**$P_0 = 0$**	**$CP_0 = 0$**	**$P_1 = 26$**	**$CP_1 = 26$**	**$P_2 = 85$**	**$CP_2 = 85$**

5.3.4 Calculation of the specificity percentage (SP)

The percentage specificities (SP) of the reference method and of the alternative method, using the data after confirmation, based on the results of level L0 are shown in Table 20.

Table 20 - Percentage specificity

Specificity for the reference method	$SP_{ref} = \left(1 - \left(\frac{P_0}{N_-}\right)\right) x\ 100\ \% =$	100%
Specificity for the alternative method	$SP_{alt} = \left(1 - \left(\frac{CP_0}{N_-}\right)\right) x\ 100\ \% =$	100 %

N - number of all L0 tests

P_0 - total number of false-positive results obtained with the blank samples before confirmation

CP_0 - total number of false-positive results obtained with the blank samples

5.3.5 Calculation of the sensitivity (SE_{alt}), the sensitivity for the reference method (SE_{ref}), the relative trueness (RT) and the false positive ratio for the alternative method (FPR)

Fractional positive results were obtained for the low and the high inoculation levels (L1 + L2). The two inoculation levels were retained for calculation.

A summary of the results of the collaborators retained for interpretation and obtained with the reference and the alternative methods for Level 1 and Level 2 is provided in Table 21.

Table 21 - Summary of the obtained results with the reference method and the alternative method for Level 1 and Level 2

Level	Response	Reference method positive (R+)	Reference method negative (R-)
1	**Alternative method positive (A+)**	Positive agreement (A+/R+) **PA = 26**	Positive deviation (R-/A+) **PD = 0**
	Alternative method negative (A-)	Negative deviation (A-/R+) **ND = 0**	Negative agreement (A-/R-) **NA = 70**
2	**Alternative method positive (A+)**	Positive agreement (A+/R+) **PA = 84**	Positive deviation (R-/A+) **PD = 1**
	Alternative method negative (A-)	Negative deviation (A-/R+) **ND = 0**	Negative agreement (A-/R-) **NA = 11**

Based on the data summarized in Table 10, the values of sensitivity of the alternative and reference methods, as well as the relative trueness and false positive ratio for the alternative method taking account the confirmations, are shown in Table 22.

Table 22 - Sensitivity, relative trueness and false positive ratio percentages

		Level 1	Level 2
Sensitivity for the alternative method:	$SE_{alt} = \frac{(PA+PD)}{(PA+PD+ND)} \; x \; 100\% =$	100.0%	100.0%
Sensitivity for the reference method:	$SE_{ref} = \frac{(PA+ND)}{(PA+PD+ND)} \; x \; 100\% =$	100.0%	98.8%
Relative trueness	$RT = \frac{(PA+NA)}{N} \; x \; 100\% =$	100.0%	98.9%
False positive ratio for the alternative method	$FPR = \frac{FP}{NA} \; x \; 100\% =$	0.0%	0.0%

5.3.6 Interpretation of data

There were no negative deviations for Level 1 or Level 2.

There were no positive deviations for Level 1. Positive deviations for Level 2 are listed in Table 23.

Table 23 - Positive deviation for Level 2

Category	**Type**	**Sample nº**	**Alternative method results**	**(additional) Confirmatory test results**	**Inoculation (CFU/Sample)**
Salmonella spp positive deviations = 1					
Ready to eat and ready to reheat meat and poultry products	Cooked products	C18, Laboratory 12	+	*Salmonella* spp MALDI	2.5

For a **paired study design**, the difference between (ND – PD) and the addition (ND + PD) are calculated for the level(s) where fractional recovery is obtained (so L_1 and possibly L_2). The observed value found for (ND – PD) and (ND + PD) shall not be higher than the AL.

For 13 collaborators, the limits are the following:

Table 24 - Acceptability limits for Level 1

	Calculated values	**AL**	**Conclusion**
ND - PD	0	4	Meets AL
ND + PD	0	5	Meets AL

Table 25 - Acceptability limits for Level 2

	Calculated values	**AL**	**Conclusion**
ND - PD	-1	4	Meets AL
ND + PD	1	5	Meets AL

Table 26 - Acceptability limits for all levels

	Calculated values	**AL**	**Conclusion**
ND - PD	-1	4	Meets AL
ND + PD	1	5	Meets AL

The EN ISO 16140-2:2016 requirements are fulfilled as (ND - PD) and (ND + PD) are below the Acceptability Limit.

5.3.7 Evaluation of the RLOD between laboratories

The RLOD was calculated using the EN ISO 16140-2:2016 Excel spreadsheet available at http://standards.iso.org/iso/16140 - RLOD (clause 5-1-4-2 Calculation and interpretation of RLOD) version 06.07.2015. The results are used only for information (see Table 1).

Table 1 – RLOD

Results by method									
Method	Method effect F_i	Log method effect f_i	SD of log method effect s_{fi}	$LOD_{50\%}$ = 50% limit of detection in cfu per sample size			$LOD_{95\%}$ = 95% limit of detection in cfu per sample size		
				Detection limit $d_{0.5,i}$	Lower conf. limit $d_{0.5,i,L}$	Upper conf. limit $d_{0.5,i,U}$	Detection limit $d_{0.95,i}$	Lower conf. limit $d_{0.95,i,L}$	Upper conf. limit $d_{0.95,i,U}$
Reference	0.742	-0.299	0.105	0.93	0.76	1.15	4.04	3.27	4.98
Alternative	0.760	-0.274	0.105	0.91	0.74	1.12	3.94	3.19	4.86
Conclusions	The methods are not significantly different at the 5% significance level (change in deviance of the model with method effects to the null model D_{method} = 0.03 with 1 degree of freedom, p-value 0.86).								
	The relative limit of detection (RLOD) of the alternative method, as compared to the reference method, is 0.98 with a 90% confidence interval of 0.76 - 1.24.								

6 CONCLUSION

The **method comparison study conclusions** are:

The observed values for ND-PD and ND+PD for the individual categories and for all categories meet the acceptability limits (observed values ≤ AL).

The RLOD values (using the confirmed alternative method results) meet the acceptability limit, which is 1.5 for paired studies, for all categories tested.

The alternative CD SL detection method is selective and specific.

The **inter-laboratory study conclusions** are:

The observed values for ND-PD and/or ND+PD is/are lower than the acceptability limits.

There are no individual categories tested for the ILS

The data and interpretations comply with the EN ISO 16140-2:2016 requirements.

The Compact Dry SL is considered equivalent to the ISO standard.

Date,

24/11/23

Signature,

Dr Suzanne Jordan

Alice Foxall

7 References

Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of *Salmonella*. Part 1: Detection of *Salmonella* spp. (ISO 6579-1:2017+A1:2020)

Microbiology of the food chain— Method validation. Part 1: Vocabulary (ISO 16140-1:2016)

Microbiology of the food chain— Method validation. Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method (ISO 16140-2:2016)

ISO 4883-1:2013. Microbiology of food and animal feeding stuffs- Horizontal method for the enumeration of microorganisms. Part 1: Colony count at 30 degrees C by the pour plate technique

ISO 18593:2018 Microbiology of the food chain - Horizontal methods for surface sampling

ISO 6887; Microbiology of the food chain -- Preparation of test samples, initial suspension and decimal dilutions for microbiological examination – All current parts.

ISO 7218; Microbiology of food and animal feeding stuffs -- General requirements and guidance for microbiological examinations.

ANNEX A: Flow diagram of the reference method and alternative method – food samples

Grow Cultures in BPW
or
Add 25g Food to 225ml BPW (1:10 dilution ratio)

↓

Incubate BPW at 34- 38 °C for 18±2h for the reference method and 22±2h at 36±1°C for the alternative method

CDSL

↓

Add 0.1ml BPW to CDSL plate

Sub 0.1ml BPW into 10ml RVS. Incubate 41.5°C for 24± 3h

Sub 1ml BPW into 10ml MKTTn. Incubate 37°± 1°C for 24± 3h

↓

Streak onto XLD and BGA

Incubate at 37±1°C for 24±3h

↓

Biochemical and serological confirmation or alternate validated technique e.g. MALDI-ToF Biotyper

Add 1ml SDW to CDSL plate and allow to diffuse
Incubate 20 –24 hours at 41.5°C ±1°C

ANNEX B: Flow diagram of the reference method and alternative method – environmental samples

Sample type	Preparation needed
Water samples	Samples <100ml added to an equal volume of double strength BPW
Swabs stainless steel, plastic surface, ceramic and rubber	Add at least 225ml BPW and make sure that the whole sample is submerged. Mix/ shake well before enrichment
Dust wipes	Add at least 225ml BPW and make sure that the whole sample is submerged. Mix/ shake well before enrichment

↓

Incubate BPW at 34- 38 °C for 18±2h for the reference method and 22±2h at 36±1°C for the alternative method

ISO 6579-1 (2017)

↓

Sub 0.1ml BPW into 10ml RVS. Incubate 41.5°C for 24± 3h

Sub 1ml BPW into 10ml MKTTn. Incubate 37°± 1°C for 24± 3h

↓

Streak onto XLD and BGA

Incubate at 37±1°C for 24±3h

↓

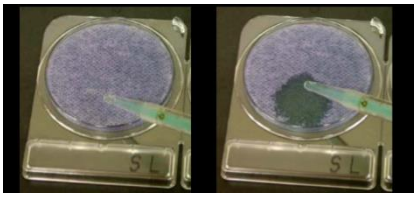
Biochemical and serological confirmation or alternate validated technique e.g. MALDI-ToF Biotyper

CDSL

↓

Add 0.1ml BPW to CDSL plate

↓



Add 1ml SDW to CDSL plate and allow to diffuse
Incubate 20 –24 hours at 41.5°C ±1°C

ANNEX C: Kit insert(s)

Please refer to separate pdf file.

ANNEX D: Artificial contaminations

Item	Sample code	Strain	Code	Source	Injury protocol	Injury evaluation (log)	Level inocuated (cfu/portion)	Reference method final result	Alternative method final results
wafer thin roast chicken slices	M1	S. Concord	1339	Chick liver	60°C for 10 minutes	3.41	5	+	+
butterroast turkey	M2	S. Concord	1339	Chick liver	60°C for 10 minutes	3.41	5	+	+
sliced ham	M3	S. Concord	1339	Chick liver	60°C for 10 minutes	3.41	5	+	+
chicken roll	M4	S. Concord	1339	Chick liver	60°C for 10 minutes	3.41	5	+	+
roasted chicken bites	M5	S. Concord	1339	Chick liver	60°C for 10 minutes	3.41	5	+	+
honey roast ham - wafer thin	M6	S. California	1421	Chicken	60°C for 10 minutes	3.04	4.8	+	-
wafer thin roast turkey	M7	S. California	1421	Chicken	60°C for 10 minutes	3.04	4.8	+	+
chicken liver pâte	M8	S. California	1421	Chicken	60°C for 10 minutes	3.04	4.8	+	+
sliced tikka chicken	M9	S. California	1421	Chicken	60°C for 10 minutes	3.04	4.8	+	+
slow cooked gammon	M10	S. California	1421	Chicken	60°C for 10 minutes	3.04	4.8	+	+

Item	Sample code	Strain	Code	Source	Injury protocol	Injury evaluation (log)	Level inocuated (cfu/portion)	Reference method final result	Alternative method final results
spanish spicy chorizo	M21	S. Pretoria	1404	Pig	60°C for 10 minutes	3.56	4.3	+	+
oven baked dry cued ham	M22	S. Pretoria	1404	Pig	60°C for 10 minutes	3.56	4.3	+	+
beef jerky	M23	S. Pretoria	1404	Pig	60°C for 10 minutes	3.56	4.3	+	+
tender jerky	M24	S. Pretoria	1404	Pig	60°C for 10 minutes	3.56	4.3	+	+
oak smoked wiltshire cured bacon rashers	M25	S. Pretoria	1404	Pig	60°C for 10 minutes	3.56	4.3	+	+
carvery pastrami	M31	S. Typhimurium	16265	Environmental	60°C for 10 minutes	3.27	4	+	+
Deli hot pepperoni	M32	S. Typhimurium	16265	Environmental	60°C for 10 minutes	3.27	4	+	+
Kabanos	M33	S. Typhimurium	16265	Environmental	60°C for 10 minutes	3.27	4	+	+
Iberico ring	M34	S. Typhimurium	16265	Environmental	60°C for 10 minutes	3.27	4	+	+
Kabanos drowbiawy	M35	S. Typhimurium	16265	Environmental	60°C for 10 minutes	3.27	4	+	+
finest salami milano	M41	S. Driffield	1430	Beef	60°C for 10 minutes	3.2	5.6	+	+

Item	Sample code	Strain	Code	Source	Injury protocol	Injury evaluation (log)	Level inocuated (cfu/portion)	Reference method final result	Alternative method final results
German Brunswick salami	M42	S. Driffield	1430	Beef	60°C for 10 minutes	3.2	5.6	+	+
German salami	M43	S. Driffield	1430	Beef	60°C for 10 minutes	3.2	5.6	+	+
Jamőn serrano	M44	S. Driffield	1430	Beef	60°C for 10 minutes	3.2	5.6	+	+
Italian antipasto platter Salami 1	M45	S. Driffield	1430	Beef	60°C for 10 minutes	3.2	5.6	+	+
Italian antipasto platter Salami 2	M46	S. Kedougou	1021	Roast beef	60°C for 10 minutes	3.2	4.3	+	+
Can Duran exentis fuet extr	M49	S. Kedougou	1021	Roast beef	60°C for 10 minutes	3.2	4.3	+	+
Billtong	M50	S. Kedougou	1021	Roast beef	60°C for 10 minutes	3.2	4.3	+	+
Italian antipasto cured meat	M51	S. Kedougou	1021	Roast beef	60°C for 10 minutes	3.2	4.3	+	+
Spanish Serrano ham slices	M52	S. Kedougou	1021	Roast beef	60°C for 10 minutes	3.2	4.3	+	+
6 very large british free range eggs	E8	S. Anatum	1060	Egg	Chill storage 72h	N/A	4.4	+	+

Item	Sample code	Strain	Code	Source	Injury protocol	Injury evaluation (log)	Level inocuated (cfu/portion)	Reference method final result	Alternative method final results
Braddock white king sized 6 free range duck eggs	E9	S. Anatum	1060	Egg	Chill storage 72h	N/A	4.4	+	+
Burford browns large 6 free range eggs	E10	S. Anatum	1060	Egg	Chill storage 72h	N/A	4.4	+	+
old cotsworld legbar large free range	E11	S. Napoli	16305	Salad	Chill storage 72h	N/A	4.5	+	+
rich yolk mixed weight eggs	E12	S. Napoli	16305	Salad	Chill storage 72h	N/A	4.5	+	+
6 medium free range eggs	E13	S. Napoli	16305	Salad	Chill storage 72h	N/A	4.5	+	+
medium free range eggs	E14	S. Napoli	16305	Salad	Chill storage 72h	N/A	4.5	+	+
farm medium free range eggs	E15	S. Napoli	16305	Salad	Chill storage 72h	N/A	4.5	+	+
free to fly quail eggs	E16	S. Anatum	1060	Egg	Chill storage 72h	N/A	4.4	+	+
leghorn whites large free range eggs	E17	S. Anatum	1060	Egg	Chill storage 72h	N/A	4.4	+	+

Item	Sample code	Strain	Code	Source	Injury protocol	Injury evaluation (log)	Level inocuated (cfu/portion)	Reference method final result	Alternative method final results
Egg white powder Multipack sachet	E21	S. Phoenix	9280	Unkown	60°C for 10 minutes	3.1	4.5	+	+
egg free range liquid egg whites	E22	S. Bredeney	1075	fish meal	60°C for 10 minutes	2.43	5.8	+	+
whole egg powder	E24	S. Phoenix	9280	Unkown	60°C for 10 minutes	3.1	4.5	+	+
free range egg white	E25	S. Muenchen	16292	Hummus	60°C for 10 minutes	1.08	4	+	+
Wholesale liquid egg whites	E27	S. Muenchen	16292	Hummus	60°C for 10 minutes	1.08	4	+	+
Wholesale liquid egg yokes	E28	S. Muenchen	16292	Hummus	60°C for 10 minutes	1.08	4	+	+
Aguafaba egg substitute	E29	S. Muenchen	16292	Hummus	60°C for 10 minutes	1.08	4	+	-
spanish spinach omelette	E33	S. Bredeney	1075	fish meal	60°C for 10 minutes	2.43	5.8	+	+
spanish omelette with chorizo	E34	S. Bredeney	1075	fish meal	60°C for 10 minutes	2.43	5.8	+	+
spanish red pepper omelette	E35	S. Bredeney	1075	fish meal	60°C for 10 minutes	2.43	5.8	+	+

Item	Sample code	Strain	Code	Source	Injury protocol	Injury evaluation (log)	Level inocuated (cfu/portion)	Reference method final result	Alternative method final results
Cheese and onion quiche	E41	S. Oranienburg	1402	Clinical	55°C for 10 minutes	1.43	4.3	+	+
quiche lorraine	E42	S. Oranienburg	1402	Clinical	55°C for 10 minutes	1.43	4.3	+	+
madagascan vanilla custard	E43	S. Oranienburg	1402	Clinical	55°C for 10 minutes	1.43	4.3	+	+
smoked ham and cheddar sandwiches	E44	S. Oranienburg	1402	Clinical	55°C for 10 minutes	1.43	4.3	+	-
bacon and free range egg sandwich	E45	S. Oranienburg	1402	Clinical	55°C for 10 minutes	1.43	4.3	+	+
chicken and sweetcorn sandwiches	E46	S. Schwarzengrund	16635	Factory isolate	55°C for 10 minutes	0.75	4.6	+	+
cheese and red onion sandwiches	E47	S. Schwarzengrund	16635	Factory isolate	55°C for 10 minutes	0.75	4.6	+	+
prawn mayo sandwiches	E48	S. Schwarzengrund	16635	Factory isolate	55°C for 10 minutes	0.75	4.6	+	+
free range egg protein pot	E49	S. Schwarzengrund	16635	Factory isolate	55°C for 10 minutes	0.75	4.6	+	+

Item	Sample code	Strain	Code	Source	Injury protocol	Injury evaluation (log)	Level inocuated (cfu/portion)	Reference method final result	Alternative method final results
2 egg custard tarts	E50	S. Schwarzengrund	16635	Factory isolate	55°C for 10 minutes	0.75	4.6	+	+
Floor far side tile	F1	S. Hadar	1973	fluff sample (turkeys)	Chill storage 72h	N/A	4.2	+	+
Floor left side tile	F2	S. Hadar	1973	fluff sample (turkeys)	Chill storage 72h	N/A	4.2	+	+
Floor right side tile	F3	S. Hadar	1973	fluff sample (turkeys)	Chill storage 72h	N/A	4.2	+	+
Floor by entrance tile	F4	S. Hadar	1973	fluff sample (turkeys)	Chill storage 72h	N/A	4.2	+	+
Fume hood inside	F5	S. Hadar	1973	fluff sample (turkeys)	Chill storage 72h	N/A	4.2	+	+
Fume hood outisde	F6	S. Infantis	1633	Environmental	Chill storage 72h	N/A	4.2	+	+
Underneath metal table	F7	S. Infantis	1633	Environmental	Chill storage 72h	N/A	4.2	+	+

Item	Sample code	Strain	Code	Source	Injury protocol	Injury evaluation (log)	Level inocuated (cfu/portion)	Reference method final result	Alternative method final results
Metal tabletop outside kitchen 1	F8	S. Infantis	1633	Environmental	Chill storage 72h	N/A	4.2	+	+
Underneath metal table outside kitchen 1	F9	S. Infantis	1633	Environmental	Chill storage 72h	N/A	4.2	+	+
Refridgeration unit door inside(metal)	F10	S. Infantis	1633	Environmental	Chill storage 72h	N/A	4.2	+	+
Far handwashing sink tap 3	F21	S. Albuquerque	1276	Irrigation water	Chill storage 72h	N/A	4.6	+	+
Kitchen 2 corner sink	F22	S. Albuquerque	1276	Irrigation water	Chill storage 72h	N/A	4.6	+	+
Kitchen 2 main sink	F23	S. Albuquerque	1276	Irrigation water	Chill storage 72h	N/A	4.6	+	+
Refridgeration unit tap 1	F24	S. Albuquerque	1276	Irrigation water	Chill storage 72h	N/A	4.6	+	+
Refridgeration unit tap 2	F25	S. Albuquerque	1276	Irrigation water	Chill storage 72h	N/A	4.6	+	+

Item	Sample code	Strain	Code	Source	Injury protocol	Injury evaluation (log)	Level inocuated (cfu/portion)	Reference method final result	Alternative method final results
Refridgeration unit handwashing sink tap 1	F26	S. Montevideo	1030	Animal feed	Chill storage 72h	N/A	4.4	+	+
Refridgeration unit handwashing sink tap 2	F27	S. Montevideo	1030	Animal feed	Chill storage 72h	N/A	4.4	+	+
Side room sink left tap	F28	S. Montevideo	1030	Animal feed	Chill storage 72h	N/A	4.4	+	+
Side room sink right tap	F29	S. Montevideo	1030	Animal feed	Chill storage 72h	N/A	4.4	+	+
Side room hose tap	F30	S. Montevideo	1030	Animal feed	Chill storage 72h	N/A	4.4	+	+
Metal bench 1	F41	S. Schwarzengrund	16635	Factory isolate	Chill storage 72h	N/A	4.4	+	+
Metal bench 2	F42	S. Schwarzengrund	16635	Factory isolate	Chill storage 72h	N/A	4.4	+	+
Metal bench 3	F43	S. Schwarzengrund	16635	Factory isolate	Chill storage 72h	N/A	4.4	+	+
Metal bench 4	F44	S. Schwarzengrund	16635	Factory isolate	Chill storage 72h	N/A	4.4	+	+

Item	Sample code	Strain	Code	Source	Injury protocol	Injury evaluation (log)	Level inocuated (cfu/portion)	Reference method final result	Alternative method final results
Metal bench 5	F45	S. Schwarzengrund	16635	Factory isolate	Chill storage 72h	N/A	4.4	+	+
Metal machine surface 1	F46	S. Livingstone	1385	faeces	Chill storage 72h	N/A	4	+	+
Metal machine surface 2	F47	S. Livingstone	1385	faeces	Chill storage 72h	N/A	4	+	+
Metal machine surface 3	F48	S. Livingstone	1385	faeces	Chill storage 72h	N/A	4	+	+
Plastic sheet conveyor machine	F49	S. Livingstone	1385	faeces	Chill storage 72h	N/A	4	+	+
Tiled wall 1 side left	F50	S. Livingstone	1385	faeces	Chill storage 72h	N/A	4	+	+

ANNEX E: Raw data sensitivity study

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
wafer thin roast chicken slices	M1	+	+	+	+	*Salmonella* sp	2.27	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.34	+	PA
butterroast turkey	M2	+	+	+	+	*Salmonella* sp	2.39	+	+	Yellow	Yellow	2	+	+	+	*Salmonella* sp	2.4	+	PA
sliced ham	M3	+	+	+	+	*Salmonella* sp	2.35	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.45	+	PA
chicken roll	M4	+	+	+	+	*Salmonella* sp	2.37	+	+	Yellow	Yellow	1	+	+	+	*Salmonella* sp	2.43	+	PA
roasted chicken bites	M5	+	+	+	+	*Salmonella* sp	2.27	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.46	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	**BR**	**XM**	**BM**	**Maldi**	**Score**	**final result**	**Growth**	Colour of Inoc point	**Colour of Surroun-ding area**	**Colonies**	**Presumptive result**	**XLD**	**BGAM**	**Maldi**	**Score**	**final result**	
honey roast ham - wafer thin	M6	+	+	+	+	*Salmonella* sp	2.15	+	-	Pink	Blue	0	-	+	+	*Salmonella* sp	2.28	-	ND
wafer thin roast turkey	M7	+	+	+	+	*Salmonella* sp	2.39	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.35	+	PA
chicken liver pâte	M8	+	+	+	+	*Salmonella* sp	2.36	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.37	+	PA
sliced tikka chicken	M9	+	+	+	+	*Salmonella* sp	2.3	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.44	+	PA
slow cooked gammon	M10	+	+	+	+	*Salmonella* sp	2.35	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.47	+	PA
RTE roast chicken thighs	M11	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
roast chicken fillet	M12	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
Deli cooked chicken pieces	M13	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
Mexican style chicken slices	M14	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
curried coconut chicken slices	M15	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
wafer thin cooked chicken	M16	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	**BR**	**XM**	**BM**	**Maldi**	**Score**	**final result**	**Growth**	Colour of Inoc point	**Colour of Surroun-ding area**	**Colonies**	**Presumptive result**	**XLD**	**BGAM**	**Maldi**	**Score**	**final result**	
turkey breast slices	M17	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
chicken breast chunks	M18	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
Deli chicken slices	M19	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
hot & spicy chicken slices	M20	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
spanish spicy chorizo	M21	+	+	+	+	*Salmonella* sp	2.4	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.47	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	**BR**	**XM**	**BM**	**Maldi**	**Score**	**final result**	**Growth**	Colour of Inoc point	**Colour of Surroun-ding area**	**Colonies**	**Presumptive result**	**XLD**	**BGAM**	**Maldi**	**Score**	**final result**	
oven baked dry cued ham	M22	+	+	+	+	*Salmonella* sp	2.35	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.38	+	PA
beef jerky	M23	+	+	+	+	*Salmonella* sp	2.34	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.4	+	PA
tender jerky	M24	+	+	+	+	*Salmonella* sp	2.38	+	+	Black	Yellow	0	+	+	+	*Salmonella* sp	2.49	+	PA
oak smoked wiltshire cured bacon rashers	M25	+	+	+	+	*Salmonella* sp	2.44	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.41	+	PA
Tesco's prime cuts peppered hm	M26	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Bresola della Valtellina PGI	M27	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-	NA
galician chorizo	M28	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-	NA
chorizo de navarra picante	M29	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-	NA
British pastrami	M30	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
carvery pastrami	M31	+	+	+	+	*Salmonella* sp	2.34	+	+	Yellow	Yellow	9	+	+	+	*Salmonella* sp	2.4	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	**BR**	**XM**	**BM**	**Maldi**	**Score**	**final result**	**Growth**	Colour of Inoc point	**Colour of Surroun-ding area**	**Colonies**	**Presumptive result**	**XLD**	**BGAM**	**Maldi**	**Score**	**final result**	
Deli hot pepperoni	M32	+	+	+	+	*Salmonella* sp	2.39	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.36	+	PA
Kabanos	M33	+	+	+	+	*Salmonella* sp	2.35	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.41	+	PA
Iberico ring	M34	+	+	+	+	*Salmonella* sp	2.37	+	+	Yellow	Yellow	3	+	+	+	*Salmonella* sp	2.39	+	PA
Kabanos drowbiawy	M35	+	+	+	+	*Salmonella* sp	2.39	+	+	Yellow	Yellow	10	+	+	+	*Salmonella* sp	2.42	+	PA
Pepper saussison secs	M36	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
saussison secs	M37	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	**BR**	**XM**	**BM**	**Maldi**	**Score**	**final result**	**Growth**	Colour of Inoc point	**Colour of Surroun-ding area**	**Colonies**	**Presumptive result**	**XLD**	**BGAM**	**Maldi**	**Score**	**final result**	
Mild dry cured & fermented pork sausage	M38	-	-	-	-	N/A	N/A	-	+	Yellow	Blue	0	+	-	-	N/A	N/A	-	PPNA
Italian Bresaola distinct & delicate	M39	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Pickstick snack mild	M40	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
finest salami milano	M41	+	+	+	+	*Salmonella* sp	2.01	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.35	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
German Brunswick salami	M42	+	+	+	+	*Salmonella* sp	2.22	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.15	+	PA
german salami	M43	+	+	+	+	*Salmonella* sp	2.24	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.2	+	PA
Jamőn serrano	M44	+	+	+	+	*Salmonella* sp	2.17	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.19	+	PA
Italian antipasto platter Salami 1	M45	+	+	+	+	*Salmonella* sp	2.27	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.25	+	PA
Italian antipasto platter Salami 2	M46	+	+	+	+	*Salmonella* sp	2.32	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.45	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
saucissons secs cocktail salami	M47	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Mild Kabanos mild and smoky	M48	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Can Duran exentis fuet extr	M49	+	+	+	+	*Salmonella* sp	2.45	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.35	+	PA
Billtong	M50	+	+	+	+	*Salmonella* sp	2.48	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.44	+	PA
Italian antipasto cured meat	M51	+	+	+	+	*Salmonella* sp	2.45	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.39	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	**BR**	**XM**	**BM**	**Maldi**	**Score**	**final result**	**Growth**	Colour of Inoc point	**Colour of Surroun-ding area**	**Colonies**	**Presumptive result**	**XLD**	**BGAM**	**Maldi**	**Score**	**final result**	
Spanish Serrano ham slices	M52	+	+	+	+	*Salmonella* sp	2.47	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.5	+	PA
Italian antipasto smoked selection spiced speck	M53	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
Italian antipasto smoked selection Napoli salami	M54	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Spanish 12 month Serrano ham	M55	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
Italian Parma ham	M56	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
rib eye flavour Biltong	M57	-	-	-	-	N/A	N/A	-	-	Purple	Blue	20	-	-	-	N/A	N/A	-	NA
BBQ flavour Biltong	M58	-	-	-	-	N/A	N/A	-	-	Purple	Blue	27	-	-	-	N/A	N/A	-	NA
tapas selection chorizo	M59	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
spicy chorizo	M60	-	-	-	-	N/A	N/A	-	-	Purple	Blue	0	-	-	-	N/A	N/A	-	NA
large organic free range eggs	E1	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-	NA
carbon neutral medium free range eggs	E2	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-	NA
Taste the difference 6 free range british eggs	E3	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
6 large british free range eggs	E4	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-	NA
6 british free range medium eggs	E5	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-	NA
SO organic 6 british large free range eggs	E6	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-	NA
SO organic 6 british medium free range eggs	E7	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
6 very large british free range eggs	E8	+	+	+	+	*Salmonella* sp	2.27	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.27	+	PA
Braddock white king sized 6 free range duck eggs	E9	+	+	+	+	*Salmonella* sp	2.36	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.41	+	PA
Burford browns large 6 free range eggs	E10	+	+	+	+	*Salmonella* sp	2.43	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.39	+	PA
old cotsworld legbar large free range	E11	+	+	+	+	*Salmonella* sp	2.43	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.42	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	**BR**	**XM**	**BM**	**Maldi**	**Score**	**final result**	**Growth**	Colour of Inoc point	**Colour of Surroun-ding area**	**Colonies**	**Presumptive result**	**XLD**	**BGAM**	**Maldi**	**Score**	**final result**	
rich yolk mixed weight eggs	E12	+	+	-	-	*Salmonella* sp	2.36	+	+	Yellow	Yellow	50	+	+	+	*Salmonella* sp	2.42	+	PA
6 medium free range eggs	E13	+	+	+	+	*Salmonella* sp	2.34	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.36	+	PA
medium free range eggs	E14	+	+	+	+	*Salmonella* sp	2.22	+	+	Yellow	Blue	0	+	+	+	*Salmonella* sp	2.38	+	PA
farm medium free range eggs	E15	+	+	+	+	*Salmonella* sp	2.4	+	+	Yellow	Blue	0	+	+	+	*Salmonella* sp	2.31	+	PA
free to fly quail eggs	E16	+	+	+	+	*Salmonella* sp	2.53	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.51	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	**BR**	**XM**	**BM**	**Maldi**	**Score**	**final result**	**Growth**	Colour of Inoc point	**Colour of Surroun-ding area**	**Colonies**	**Presumptive result**	**XLD**	**BGAM**	**Maldi**	**Score**	**final result**	
leghorn whites large free range eggs	E17	+	+	+	+	*Salmonella* sp	2.56	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.56	+	PA
burford brown's medium free range eggs	E18	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
very large free range eggs	E19	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
organic free range eggs	E20	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
Egg white powder	E21	+	+	+	+	*Salmonella* sp	2.17	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.21	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	**BR**	**XM**	**BM**	**Maldi**	**Score**	**final result**	**Growth**	Colour of Inoc point	**Colour of Surroun-ding area**	**Colonies**	**Presumptive result**	**XLD**	**BGAM**	**Maldi**	**Score**	**final result**	
Multipack sachet																			
free range liquid egg whites	E22	+	+	+	+	*Salmonella* sp	2.47	+	+	Yellow	Yellow	2	+	+	+	*Salmonella* sp	2.56	+	PA
free range liquid egg whites	E23	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
whole egg powder	E24	+	+	+	+	*Salmonella* sp	2.26	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.12	+	PA
free range egg white	E25	+	+	+	+	*Salmonella* sp	2.42	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.52	+	PA
Bulk egg whites	E26	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Wholesale liquid egg whites	E27	+	+	+	+	*Salmonella* sp	2.44	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.31	+	PA
Wholesale liquid egg yokes	E28	+	+	+	+	*Salmonella* sp	2.5	+	+	Yellow	Yellow	+	+	+	+	*Salmonella* sp	2.52	+	PA
Aguafaba egg substitute	E29	+	+	+	+	*Salmonella* sp	2.48	+	-	P	Black	0	-	+	+	*Salmonella* sp	2.42	-	ND
egg replacer	E30	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
simply egg white	E31	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
spanish potato omelette	E32	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
spanish spinach omelette	E33	+	+	+	+	*Salmonella* sp	2.49	+	-	Yellow	Yellow	0	+	-	-	*Salmonella* sp	2.43	+	PA
spanish omelette with chorizo	E34	+	+	+	+	*Salmonella* sp	2.51	+	-	Yellow	Yellow	0	+	-	-	*Salmonella* sp	2.37	+	PA
spanish red pepper omelette	E35	+	+	+	+	*Salmonella* sp	2.47	+	-	Yellow	Yellow	0	+	-	-	*Salmonella* sp	2.5	+	PA
Target baits whole egg powder	E36	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Balsara foods whole egg powder	E37	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
free range premium whole egg	E38	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
Free range egg powder whole	E39	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
Egg yolk powder	E40	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
Cheese and onion quiche	E41	+	+	+	+	*Salmonella* sp	2.33	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.25	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	**BR**	**XM**	**BM**	**Maldi**	**Score**	**final result**	**Growth**	Colour of Inoc point	**Colour of Surroun-ding area**	**Colonies**	**Presumptive result**	**XLD**	**BGAM**	**Maldi**	**Score**	**final result**	
quiche lorraine	E42	+	+	+	+	*Salmonella* sp	2.36	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.33	+	PA
madagascan vanilla custard	E43	+	+	+	+	*Salmonella* sp	2.22	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.35	+	PA
smoked ham and cheddar sandwiches	E44	+	+	+	+	*Salmonella* sp	2.23	+	-	Pink	Blue	0	-	-	-	*Salmonella* sp	N/A	-	ND
bacon and free range egg sandwich	E45	+	+	+	+	*Salmonella* sp	2.22	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.24	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
chicken and sweetcorn sandwiches	E46	+	+	+	+	*Salmonella* sp	2.26	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.4	+	PA
cheese and red onion sandwiches	E47	+	+	+	+	*Salmonella* sp	2.3	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.38	+	PA
prawn mayo sandwiches	E48	+	+	+	+	*Salmonella* sp	2.24	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.37	+	PA
free range egg protein pot	E49	+	+	+	+	*Salmonella* sp	2.34	+	+	Yellow	Blue	0	+	+	+	*Salmonella* sp	2.47	+	PA
2 egg custard tarts	E50	+	+	+	+	*Salmonella* sp	2.3	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.33	+	PA
plum tomato,	E51	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
mozzarella and pesto quiche																			
Lemon and black pepper mayo	E52	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
broccoli, spinach and ricotta quiche	E53	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
cheese and onion quiche	E54	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
potato and egg salad	E55	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
cheese and onion quiche	E56	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
quiche lorraine	E57	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
ham and cheese crustless quiche	E58	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
smoked english bacon quiche	E59	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA
mediterranean style	E60	-	-	-	-	N/A	N/A	-	-	P	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
vegetable quiche																			
Floor far side tile	F1	+	+	+	+	*Salmonella* sp	2.43	+	+	Green	Yellow	1	+	+	+	*Salmonella* sp	2.39	+	PA
Floor left side tile	F2	+	+	+	+	*Salmonella* sp	2.38	+	+	Green	Green	0	+	+	-	*Salmonella* sp	1.7	+	PA
Floor right side tile	F3	+	+	+	+	*Salmonella* sp	2.39	+	+	Green	Green	1	+	+	+	*Salmonella* sp	2.4	+	PA
Floor by entrance tile	F4	+	+	+	+	*Salmonella* sp	2.36	+	+	Green	Green	3	+	+	+	*Salmonella* sp	2.46	+	PA
Fume hood inside	F5	+	+	+	+	*Salmonella* sp	2.3	+	+	Green	Yellow	9	+	+	+	*Salmonella* sp	2.46	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Fume hood outisde	F6	+	+	+	+	*Salmonella* sp	2.22	+	+	Yellow	Green	4	+	+	+	*Salmonella* sp	2.41	+	PA
Underneath metal table	F7	+	+	+	+	*Salmonella* sp	2.41	+	+	Yellow	Green	0	+	+	+	*Salmonella* sp	2.38	+	PA
Metal tabletop outside kitchen 1	F8	+	+	+	+	*Salmonella* sp	2.44	+	+	Green	Green	2	+	+	+	*Salmonella* sp	2.42	+	PA
Underneath metal table outside kitchen 1	F9	+	+	+	+	*Salmonella* sp	2.39	+	+	Yellow	Green	0	+	+	+	*Salmonella* sp	2.33	+	PA
Refridgeration unit door inside(metal)	F10	+	+	+	+	*Salmonella* sp	2.52	+	+	Green	Green	0	+	+	+	*Salmonella* sp	2.39	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Refridgeration unit metal table	F11	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Refridgeration metal machine surface	F12	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Refridgeration metal machine surface	F13	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Plastic sheets by central machine	F14	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Metal sheets by central machine	F15	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Metal liquid nitrogen surface	F16	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Metal tabletop next to liquid nitrogen cannister	F17	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Underneath metal table next to liquid nitrogen cannister	F18	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Main factory floor left	F19	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Main factory floor right	F20	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Far handwashing sink tap 3	F21	+	+	+	+	*Salmonella* sp	2.46	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.33	+	PA
Kitchen 2 corner sink	F22	+	+	+	+	*Salmonella* sp	2.42	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.25	+	PA
Kitchen 2 main sink	F23	+	+	+	+	*Salmonella* sp	2.45	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.21	+	PA
Refridgeration unit tap 1	F24	+	+	+	+	*Salmonella* sp	2.5	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.19	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Refridgeration unit tap 2	F25	+	+	+	+	*Salmonella* sp	2.34	+	+	Yellow	Yellow	0	+	+	+	*Salmonella* sp	2.33	+	PA
Refridgeration unit handwashing sink tap 1	F26	+	+	+	+	*Salmonella* sp	2.42	+	+	Green	Yellow	0	+	+	+	*Salmonella* sp	2.33	+	PA
Refridgeration unit handwashing sink tap 2	F27	+	+	+	+	*Salmonella* sp	2.48	+	+	Green	Yellow	0	+	+	+	*Salmonella* sp	2.43	+	PA
Side room sink left tap	F28	+	+	+	+	*Salmonella* sp	2.42	+	+	Green	Yellow	0	+	+	+	*Salmonella* sp	2.45	+	PA
Side room sink right tap	F29	+	+	+	+	*Salmonella* sp	2.35	+	+	Green	Yellow	0	+	+	+	*Salmonella* sp	2.44	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Side room hose tap	F30	+	+	+	+	*Salmonella* sp	2.45	+	+	Green	Yellow	0	+	+	+	*Salmonella* sp	2.44	+	PA
Handwashing sink left tap	F31	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
handwashing sink right tap	F32	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Kitchen 1 left sink left tap	F33	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Kitchen 1 left sink right tap	F34	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Kitchen 1 right sink left tap	F35	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Kitchen 1 right sink right tap	F36	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Main sink left	F37	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Main sink right	F38	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Far handwashing sink tap 1	F39	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Far handwashing sink tap 2	F40	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Metal bench 1	F41	+	+	+	+	*Salmonella* sp	2.38	+	+	Yellow	Green	0	+	+	+	*Salmonella* sp	2.14	+	PA
Metal bench 2	F42	+	+	+	+	*Salmonella* sp	2.34	+	+	Yellow	Green	0	+	+	+	*Salmonella* sp	2.34	+	PA
Metal bench 3	F43	+	+	+	+	*Salmonella* sp	2.4	+	+	Yellow	Green	0	+	+	+	*Salmonella* sp	2.27	+	PA
Metal bench 4	F44	+	+	+	+	*Salmonella* sp	2.46	+	+	Yellow	Green	0	+	+	+	*Salmonella* sp	2.42	+	PA
Metal bench 5	F45	+	+	+	+	*Salmonella* sp	2.35	+	+	Yellow	Green	0	+	+	+	*Salmonella* sp	2.44	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL									Call
		XR	**BR**	**XM**	**BM**	**Maldi**	**Score**	**final result**	**Growth**	Colour of Inoc point	**Colour of Surroun-ding area**	**Colonies**	**Presumptive result**	**XLD**	**BGAM**	**Maldi**	**Score**	**final result**	
Metal machine surface 1	F46	+	+	+	+	*Salmonella* sp	2.47	+	+	Yellow	Green	0	+	+	+	*Salmonella* sp	2.36	+	PA
Metal machine surface 2	F47	+	+	+	+	*Salmonella* sp	2.46	+	+	Yellow	Green	0	+	+	+	*Salmonella* sp	2.31	+	PA
Metal machine surface 3	F48	+	+	+	+	*Salmonella* sp	2.35	+	+	Yellow	Green	74	+	+	+	*Salmonella* sp	2.33	+	PA
Plastic sheet conveyor machine	F49	+	+	+	+	*Salmonella* sp	2.51	+	+	Yellow	Green	100	+	+	+	*Salmonella* sp	2.41	+	PA
Tiled wall 1 side left	F50	+	+	+	+	*Salmonella* sp	2.4	+	+	Yellow	Green	93	+	+	+	*Salmonella* sp	2.43	+	PA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Tiled wall 2 side bench	F51	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Kitchen central bench 1	F52	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Kitchen central bench 2	F53	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Metal sink left	F54	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Metal sink right	F55	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Tiled kitchen floor left	F56	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA

Item	Sample code	Reference method ISO 6579-1 2017							Alternative method Compact Dry SL										Call
		XR	BR	XM	BM	Maldi	Score	final result	Growth	Colour of Inoc point	Colour of Surroun-ding area	Colonies	Presumptive result	XLD	BGAM	Maldi	Score	final result	
Tiled kitchen floor right	F57	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Kitchen 1 left plastic window sill	F58	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Kitchen 1 right plastic window sill	F59	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA
Clamp machine metal surface	F60	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-	NA

ANNEX F: Raw data on inclusivity and exclusivity

Inclusivity

code	Strain	Serotype	CRA code	Origin	Other codes	Growth on CD SL and colour at defined media locations				presumptive detection
						+/-	Inoc point	surrounding	colonies	
1	*Salmonella*	Adelaide	1271	Clinical	NCTC 6586	+	yellow/green/brown	yellow	green	+
2	*Salmonella*	Africana	2002	Biscuits	Industrial	+	yellow	yellow	0	+
3	*Salmonella*	Agama	1419	Meat	Industrial	+	yellow	yellow	0	+
4	*Salmonella*	Agona	1050	Chicken	HPA	+	yellow	yellow	1 small black	+
5	*Salmonella*	Alachua	1274	Soil, abbatoir	NCTC 8261	+	yellow	yellow	0	+
6	*Salmonella*	Albuquerque	1276	Irrigation water	NCTC 8262	+	yellow	yellow	0	+
7	*Salmonella*	Anatum	1060	Egg	HPA	+	yellow	yellow	3	+
8	*Salmonella*	Banana	1289	Unknown	NCTC 8718	+	yellow	yellow	1 small black	+

code	Strain	Serotype	CRA code	Origin	Other codes	Growth on CD SL and colour at defined media locations				presumptive detection
						+/-	Inoc point	surrounding	colonies	
9	*Salmonella*	Bareilly	1291	Clinical	NCTC 5745	+	yellow	yellow	2small black	+
10	*Salmonella*	Barry	1651	HPA	HPA	+	yellow	yellow	2 green	+
11	*Salmonella*	Berta	1067	Uncooked chicken	HPA	+	yellow	yellow	0	+
12	*Salmonella*	Binza	1436	Dried spice	Industrial	+	yellow	yellow	green	+
13	*Salmonella*	Blockley	1087	Fresh chicken	HPA	+	yellow/green	yellow	green	+
14	*Salmonella*	Bodjongero	1303	Buffalo	NCTC 9919	+	yellow/green	yellow	green	+
15	*Salmonella*	Brandenburg	1070	Beef	HPA	+	yellow	yellow	0	+
16	*Salmonella*	Braenderup	1095	Chicken	HPA	+	yellow/green	yellow	green	+
17	*Salmonella*	Brazil	1309	Clinical	NCTC 8446	+	yellow	yellow	0	+
18	*Salmonella*	Bredeney	1075	Fish meal	HPA	+	yellow	yellow	0	+

code	Strain	Serotype	CRA code	Origin	Other codes	Growth on CD SL and colour at defined media locations				presumptive detection
						+/-	Inoc point	surrounding	colonies	
19	*Salmonella*	Butantan	1316	Clinical	NCTC 7831	+	yellow	yellow	0	+
20	*Salmonella*	II 9, 12:z29:1, 5 (Canastel)	1321	Gastroenteritis	NCTC 6894	+	purple/ no growth	yellow	green/black	+
21	*Salmonella*	California	1421	Chicken	industrial	+	yellow	yellow	0	+
22	*Salmonella*	Carmel	1324	Clinical	NCTC 9872	+	yellow/green	yellow	0	+
23	*Salmonella*	Clifton	1334	Tortoise	NCTC 9599	+	yellow	yellow	0	+
24	*Salmonella*	Clerkenwell	1333	Unknown	Industrial	+	yellow	yellow	0	+
25	*Salmonella*	Concord	1339	Chick liver	NCTC 6588	+	yellow	yellow	0	+
26	*Salmonella*	Crossness	1342	Sewage	NCTC 11059	+	purple	yellow	0	+
27	*Salmonella*	Cubana	1343	Chick	NCTC 7101	+	yellow	yellow	0	+
28	*Salmonella*	Derby	1352	Clinical	NCTC 5721	+	yellow	yellow	0	+

code	Strain	Serotype	CRA code	Origin	Other codes	Growth on CD SL and colour at defined media locations				presumptive detection
						+/-	Inoc point	surrounding	colonies	
29	*Salmonella*	Donna	1355	Unknown	NCTC 7409	+	yellow	yellow	0	+
30	*Salmonella*	Driffield	1430	Beef	Industrial	+	yellow	yellow	0	+
31	*Salmonella*	Dugbe	1357	Unknown	NCTC 10347	+	yellow	yellow	0	+
32	*Salmonella*	Dublin	1356	Bovine	NCTC 9676	+	yellow	yellow	0	+
33	*Salmonella*	Durban	1359	Faeces	NCTC 6235	+	yellow/green	yellow	0	+
34	*Salmonella*	Ealing	1362	Dried baby milk	NCTC 11948	+	yellow	yellow	0	+
35	*Salmonella*	Emek	1367	Clinical	NCTC 8485	+	yellow	yellow	0	+
36	*Salmonella*	Enteritidis	1004	Chicken	HPA	+	yellow	yellow	0	+
37	*Salmonella*	Ezra	1371	NCTC 9917	NCTC 9917	+	yellow	yellow	0	+
38	*Salmonella*	Falkensee	16425	Indian onion powder	Industrial	+	yellow	yellow	0	+

code	Strain	Serotype	CRA code	Origin	Other codes	Growth on CD SL and colour at defined media locations				presumptive detection
						+/-	Inoc point	surrounding	colonies	
39	*Salmonella*	Gallinarum	12265	unknown	NCTC 10532	+	yellow	blue	0	+
40	*Salmonella*	Goldcoast	3665	Oats	Industrial	+	yellow	yellow	0	+
41	*Salmonella*	Hadar	1973	Fluff sample (turkeys)	Industrial	+	yellow/green	yellow	one black	+
42	*Salmonella*	Heidelberg	1988	Beef burger	Industrial	+	yellow	yellow	0	+
43	*Salmonella*	Infantis	1633	Environmental	Industrial	+	yellow/green	yellow	0	+
44	*Salmonella*	Indiana	71	Turkey	NCTC 11304	+	yellow/green	yellow	0	+
45	*Salmonella*	Inverness	1377	Faeces	NCTC 6591	+	yellow/green	yellow	0	+
46	*Salmonella*	Jerusalem	1380	Unknown	NCTC 8146	+	yellow/green	yellow	0	+
47	*Salmonella*	Kedougou	1021	Roast beef	HPA	+	yellow	yellow	0	+
48	*Salmonella*	Kentucky	1382	Clinical	NCTC 5799	+	yellow	yellow	0	+

code	Strain	Serotype	CRA code	Origin	Other codes	Growth on CD SL and colour at defined media locations				presumptive detection
						+/-	Inoc point	surrounding	colonies	
49	*Salmonella*	Kimberley	1423	Australian beef	Industrial	+	yellow	yellow	0	+
50	*Salmonella*	Kottbus	4179	Clinical	HPA	+	yellow	yellow	0	+
51	*Salmonella*	Livingstone	1385	Faeces	NCTC 9125	+	yellow	yellow	green	+
52	*Salmonella*	II 57:z29:z42 (Locarno)	1386	Unknown	NCTC 10272	+	green	yellow	0	+
53	*Salmonella*	London	1387	Clinical	NCTC 5777	+	yellow/green	yellow	0	+
54	*Salmonella*	Maastricht	9273	Fishmeal	ATCC15789	+	yellow	yellow	8 gree	
55	*Salmonella*	Madelia	1388	Liver	NCTC 6482	+	yellow	yellow	2 green	+
56	*Salmonella*	Manchester	1434	Flavouring	Industrial	+	yellow	yellow	green	+
57	*Salmonella*	Mbandaka	16424	Onion powder	Industrial	+	yellow	yellow	0	+
58	*Salmonella*	Montevideo	1030	Animal feed	HPA	+	yellow/green	yellow	0	+
59	*Salmonella*	Muenchen	16292	Hummus	Industrial	+	yellow/green	yellow	black	+

code	Strain	Serotype	CRA code	Origin	Other codes	Growth on CD SL and colour at defined media locations				presumptive detection
						+/-	Inoc point	surrounding	colonies	
60	*Salmonella*	Muenster	3507	Herbal infusion	Industrial	+	green	yellow	0	+
61	*Salmonella*	Napoli	16305	Salad	HPA	+	yellow/green	yellow	0	+
62	*Salmonella*	Newington	1400	Unknown	NCTC 5785	+	yellow	yellow	0	+
63	*Salmonella*	Norwich	1401	Pig lymph nodes	HPA	+	yellow	yellow	0	+
64	*Salmonella*	Nottingham	16290	Unknown	NCTC 7832	+	yellow/green	yellow	green	+
65	*Salmonella*	Ohio	1459	HPA	HPA	+	yellow/green	yellow	0	+
66	*Salmonella*	Oranienburg	1402	Clinical	NCTC 5743	+	yellow/green	yellow	0	+
67	*Salmonella*	Panama	1045	Pork sausages	HPA	+	yellow/green	yellow	0	+
68	*Salmonella*	Phoenix	9280	Unknown	ATCC 29931	+	yellow	yellow	0	+
69	*Salmonella*	Pomona	1403	Turkey intestine	NCTC 6589	+	yellow/green	yellow	0	+
70	*Salmonella*	Poona	725	Human	NCTC 4840	+	yellow/green	yellow	0	+

code	Strain	Serotype	CRA code	Origin	Other codes	Growth on CD SL and colour at defined media locations				presumptive detection
						+/-	Inoc point	surrounding	colonies	
71	*Salmonella*	Pretoria	1404	Pig	NCTC 6234	+	yellow		0	+
72	*Salmonella*	Rubislaw	1406	Unknown	NCTC 6016	+	yellow/green	yellow/green	0	+
73	*Salmonella*	Saintpaul	1093	Milk powder	Industrial	+	yellow	yellow	0	+
74	*Salmonella*	Sandeigo	1407	Unknown	NCTC 6024	+	yellow	yellow	0	+
75	*Salmonella*	Schwarzengrund	16635	Factory isolate	Industrial	+	yellow	yellow/green	yellow	+
76	*Salmonella*	Senftenburg	9281	Unknown	ATCC 8400	+	yellow	yellow	0	+
77	*Salmonella*	Shangani	1409	Clinical	NCTC 5784	+	yellow	yellow	0	+
78	*Salmonella*	Solt	1569	Clinical	NCTC 6757	+	yellow	yellow	0	+
79	*Salmonella*	Stanley	1057	Boiled ham	HPA	+	yellow	yellow	0	+
80	*Salmonella*	Tallahasee	16285	Watercress	Industrial	+	yellow/green	yellow	black	+
81	*Salmonella*	Tennesse	3944	Sesame seeds	Industrial	+	yellow	yellow	0	+

code	Strain	Serotype	CRA code	Origin	Other codes	Growth on CD SL and colour at defined media locations				presumptive detection
						+/-	Inoc point	surrounding	colonies	
82	*Salmonella*	Thompson	1081	Pork	HPA	+	yellow	yellow	0	+
83	*Salmonella*	Typhimurium	1008	Pork	HPA	+	yellow	yellow	0	+
84	*Salmonella*	Typhimurium (monophasic)	17295	Unknown	Industrial	+	yellow/green	yellow	green	+
85	*Salmonella*	Urbana	9272	Unknown	ATCC 9261	+	yellow/green	yellow	green	+
86	*Salmonella*	Utrecht	1417	Unknown	NCTC 10077	+	yellow/green	yellow	0	+
87	*Salmonella*	Virchow	1014	Turkey	HPA	+	yellow	yellow	0	+
88	*Salmonella*	Waycross	1885	NCTC 7401	NCTC 7401	+	yellow/green	yellow	green	+
89	*Salmonella*	IV 43:z4, z23:- (Houten)	1376	Unknown	NCTC 10401	+	yellow/green	green	0	+
90	*Salmonella*	VI 6 (Vrindiban)	1466	unknown	PHE	+	yellow	yellow	0	+

code	Strain	Serotype	CRA code	Origin	Other codes	Growth on CD SL and colour at defined media locations				presumptive detection
						+/-	Inoc point	surrounding	colonies	
91	*Salmonella*	IV 50:g, z51:- (Wassenar)	1415	Human	NCTC 7318	+	yellow	yellow	0	+
92	*Salmonella*	II 59:k:(z) (Betioky)	1296	Snake	NCTC 10311	+	yellow/green	yellow	0	+
93	*Salmonella*	II 17:(f), g, t (Bleadon)	1299	Tortoise	NCTC 9604	+	yellow/green	yellow	black	+
94	*Salmonella*	Bongori V 66:z65:-	16378	HPA	HPA	+	yellow	yellow	2 green	+
95	*Salmonella*	Brookfield	1312	Frog	NCTC 10946	+	yellow/green	yellow	green	+
96	*Salmonella*	IIIa 51:z4,z23:-	16380	Unknown	NCTC 8297	+	yellow/green	yellow/green	0	+
97	*Salmonella*	IIIa 44:z4, z23:-	16371	HPA	HPA	+	yellow/green	yellow/green	0	+
98	*Salmonella*	IIIb 50:k:z	16374	HPA	HPA	+	yellow/green	yellow/green	0	+
99	*Salmonella*	IIIb 61:l,v:1,5	16375	HPA	HPA	+	yellow/green	yellow/green	green	+

code	Strain	Serotype	CRA code	Origin	Other codes	Growth on CD SL and colour at defined media locations				presumptive detection
						+/-	Inoc point	surrounding	colonies	
100	*Salmonella*	IIIb 48:i:z	16376	HPA	HPA	+	yellow/green	yellow/green	green-black	+

Exclusivity

code	Strain	CRA code	Origin	Source	Growth on CD SL and colour at defined media locations				Presumptive result	XLD BGAM result	MALDI result
					+/-	Inoc point	Surrounding	Colonies			
101	*Aeromonas hydrophila*	4111	Milk	NCTC 8049	-	N/A	N/A	N/A	-	N/A	N/A
102	*Avibacterium avium*	8389	Chicken	NCTC11297	-	N/A	N/A	N/A	-	N/A	N/A
103	*Citrobacter freundii*	7455	Sausage	Industrial	+	yellow	blue	0	+	+	*Citrobacter freundii*
104	*Enterobacter aerogenes*	4231	Sesame seeds	Industrial	-	blue	purple	0	-	N/A	N/A
105	*Enterobacter cloacae*	1472	Dried milk	Campden	-	N/A	N/A	N/A	-	N/A	N/A
106	*Escherichia coli*	1546	poultry	Food Producer	-	purple	blue	0	-	N/A	N/A

code	Strain	CRA code	Origin	Source	Growth on CD SL and colour at defined media locations				Presumptive result	XLD BGAM result	MALDI result
					+/-	Inoc point	Surrounding	Colonies			
107	*Hafnia alvei*	1561	Raw minced beef	Industrial	+	yellow	blue	0	+	-	N/A
108	*Klebsiella oxytoca*	8387	unknown	NCTC 8167	+	purple	N/A	N/A	-	N/A	N/A
109	*Klebsiella pneumoniae*	6786	DD3497	DuPont	+	blue-purple	N/A	N/A	-	N/A	N/A
110	*Morganella morganii*	1542	Mince	Campden	+	purple-pale blue	blue no change		-	N/A	N/A
111	*Citrobacter braakii*	16279	Industrial	Campden	-	N/A	N/A	N/A	-	N/A	N/A
112	*Proteus mirabilis*	1588	Poultry	Campden	-	N/A	N/A	N/A	-	N/A	N/A
113	*Proteus vulgaris*	1581	Poultry	Campden	-	N/A	N/A	N/A	-	N/A	N/A
114	*Providencia rettgeri*	7516	Watercress	NCTC 7475	-	blue	blue	0	-	N/A	N/A

code	Strain	CRA code	Origin	Source	Growth on CD SL and colour at defined media locations				Presumptive result	XLD BGAM result	MALDI result
					+/-	Inoc point	Surrounding	Colonies			
115	*Pseudomonas aeruginosa*	17038	clinical	NCIMB 11284	-	blue	blue	0	-	N/A	N/A
116	*Pseudomonas fluorescens*	15937	Soil	NCIMB 10586	-	N/A	N/A	N/A	-	N/A	N/A
117	*Pseudomonas fragi*	16050	unknown	NCTC 10689, ATCC 4973	+ or -	purple/blue	purple-blue	blue	-	N/A	N/A
118	*Serratia liquifaciens*	1491	Raw mince	Campden	-	N/A	N/A	N/A	-	N/A	N/A
119	*Serratia marcescens*	1521	Raw mince	Campden	-	N/A	N/A	N/A	-	N/A	N/A
120	*Serratia proteamaculans subsp. quinovora*	16463	NCTC 11544	NCTC 11544	-	N/A	N/A	N/A	-	N/A	N/A
121	*Shigella flexneri*	325	Human	NCTC 9950	-	N/A	N/A	N/A	-	N/A	N/A

code	Strain	CRA code	Origin	Source	Growth on CD SL and colour at defined media locations				Presumptive result	XLD BGAM result	MALDI result
					+/-	Inoc point	Surrounding	Colonies			
122	*Shigella sonnei*	4107	Human	ATCC 25931	+	purple	no change		-	N/A	N/A
123	*Klebsiella aerogenes*	8387	unkown	Campden	-	purple	blue	0	-	N/A	N/A
124	*Yersinia enterocolitica*	4103	Mammal	NCTC 10460	-	N/A	N/A	N/A	-	N/A	N/A
125	*Citrobacter braakii*	17057	Factory isolate	Industrial	-	blue	blue	0	-	N/A	N/A
126	*Pantoea agglomerans*	15945	clinical	NCIMB 13953	-	N/A	N/A	N/A	-	N/A	N/A
127	*Enterobacter dispar*	17022	NCTC 8006	Gastro-enteritis outbreak	-	yellow	blue	0	-	N/A	N/A
128	*Serratia fonticola*	4613	chicken	Industrial	-	N/A	N/A	N/A	-	N/A	N/A

code	Strain	CRA code	Origin	Source	Growth on CD SL and colour at defined media locations				Presumptive result	XLD BGAM result	MALDI result
					+/-	Inoc point	Surrounding	Colonies			
129	*Raoultella terrigena*	17343	Raw milk	Industrial	-	N/A	N/A	N/A	-	N/A	N/A
130	*Vibrio metschinkovii*	5437	Cooked cockles	NCTC 11170	-	N/A	N/A	N/A	-	N/A	N/A

ANNEX G: Raw data on relative level of detection

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
Fishery products - Shrimp																			
R1	N/A	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R2	N/A	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R3	N/A	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R4	N/A	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R5	N/A	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R6	0.5	+	+	+	+	+	Salmonella sp	2.37	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.35	+
R7	0.5	+	+	+	+	+	Salmonella sp	2.32	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.45	+
R8	0.5	+	+	+	+	+	Salmonella sp	2.2	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.07	+
R9	0.5	-	-	-	-	-	N/A	N/A	-	+	Yellow	Blue	0	+	-	-	N/A	N/A	-
R10	0.5	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R11	0.5	+	+	+	+	+	Salmonella sp	2.21	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.46	+

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R12	0.5	-	-	-	-	-	N/A	N/A	-	+	Pink	Blue	0	+	-	-	N/A	N/A	-
R13	0.5	+	+	+	+	+	Salmonella sp	2.26	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.43	+
R14	0.5	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R15	0.5	+	+	+	+	+	Salmonella sp	2.3	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.22	+
R16	0.5	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R17	0.5	+	+	+	+	+	Salmonella sp	2.36	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.33	+

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R18	0.5	-	-	-	-	-	N/A	N/A	-	+	Pink	Blue	0	+	-	-	N/A	N/A	-
R19	0.5	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R20	0.5	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R21	0.5	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R22	0.5	+	+	+	+	+	Salmonella sp	2.22	+	+	Yellow	Yellow	2	+	+	+	Salmonella sp	2.38	+
R23	0.5	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R24	0.5	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R25	0.5	+	+	+	+	+	Salmonella sp	2.33	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.37	+
R26	3	+	+	+	+	+	Salmonella sp	2.42	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.42	+
R27	3	+	+	+	+	+	Salmonella sp	2.32	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.33	+
R122	3	+	+	+	+	+	Salmonella sp	1.96	+	+	Yellow	Yellow	2	+	+	+	Salmonella sp	2.03	+
R29	3	+	+	+	+	+	Salmonella sp	2.23	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.18	+

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R123	3	+	+	+	+	+	Salmonella sp	2.36	+	+	Yellow	Yellow	2	+	+	+	Salmonella sp	2.17	+
Egg and egg products - Liquid pasteurised egg																			
R31	N/A	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R32	N/A	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R33	N/A	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R34	N/A	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R35	N/A	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R36	1.9	+	+	+	+	+	Salmonella sp	2.4	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.35	+
R37	1.9	+	+	+	+	+	Salmonella sp	2.47	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.42	+
R38	1.9	+	+	+	+	+	Salmonella sp	2.35	+	+	Yellow	Blue	0	+	+	+	Salmonella sp	2.47	+
R39	1.9	+	+	+	+	+	Salmonella sp	2.41	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.28	+
R40	1.9	+	+	+	+	+	Salmonella sp	2.46	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.29	+

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R41	1.9	+	+	+	+	+	Salmonella sp	2.28	+	+	Yellow	Blue	1	+	+	+	Salmonella sp	2.4	+
R42	1.9	-	-	+	+	+	Salmonella sp	2.34	+	+	Yellow	Blue	1	+	+	+	Salmonella sp	2.49	+
R43	1.9	+	+	+	+	+	Salmonella sp	2.38	+	+	Yellow	Yellow	2	+	+	+	Salmonella sp	2.39	+
R44	1.9	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R45	1.9	-	-	+	+	+	Salmonella sp	2.27	+	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R46	1.9	+	+	+	+	+	Salmonella sp	2.33	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.35	+

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R47	1.9	+	+	+	+	+	Salmonella sp	2.28	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.29	+
R48	1.9	+	+	+	+	+	Salmonella sp	2.29	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.4	+
R49	1.9	+	+	+	+	+	Salmonella sp	2.34	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.32	+
R50	1.9	+	+	+	+	+	Salmonella sp	2.31	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.04	+
R51	1.9	+	+	+	+	+	Salmonella sp	2.3	+	+	Yellow	Blue	1	+	+	+	Salmonella sp	2.26	+
R52	1.9	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R53	1.9	+	+	+	+	+	Salmonella sp	2.28	+	+	Yellow	Yellow	4	+	+	+	Salmonella sp	2.31	+
R124	1.9	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R55	1.9	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R56	5	+	+	+	+	+	Salmonella sp	2.26	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.41	+
R57	5	+	+	+	+	+	Salmonella sp	2.28	+	+	Yellow	Yellow	4	+	+	+	Salmonella sp	2.17	+
R58	5	+	+	+	+	+	Salmonella sp	2.36	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.4	+

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R59	5	+	+	+	+	+	Salmonella sp	2.48	+	+	Yellow	Yellow	2	+	+	+	Salmonella sp	2.41	+
R60	5	+	+	+	+	+	Salmonella sp	2.38	+	+	Yellow	Yellow	12	+	+	+	Salmonella sp	2.34	+
Cooked ham																			
R136	N/A	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R137	N/A	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R138	N/A	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R139	N/A	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R140	N/A	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R66	0.4	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R67	0.4	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R68	0.4	+	+	+	+	+	Salmonella sp	2.38	+	+	Yellow	Yellow	1	+	+	+	Salmonella sp	2.28	+
R69	0.4	+	+	+	+	+	Salmonella sp	2.38	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.37	+
R70	0.4	+	+	+	+	+	Salmonella sp	2.2	+	+	Yellow	Yellow	1	+	+	+	Salmonella sp	2.29	+
R71	0.4	+	+	+	+	+	Salmonella sp	2.26	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.35	+
R72	0.4	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R141	0.4	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R74	0.4	+	+	+	+	+	Salmonella sp	2.4	+	+	Yellow	Yellow	6	+	+	+	Salmonella sp	2.41	+
R75	0.4	+	+	+	+	+	Salmonella sp	2.22	+	+	Yellow	Blue	0	+	+	+	Salmonella sp	2.38	+
R76	0.4	+	+	+	+	+	Salmonella sp	2.32	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.29	+
R77	0.4	+	+	+	+	+	Salmonella sp	2.38	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.19	+
R78	0.4	+	+	+	+	+	Salmonella sp	2.44	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.21	+
R142	0.4	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R143	0.4	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R144	0.4	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R145	0.4	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R146	0.4	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R149	0.4	+	+	+	+	+	Salmonella sp	2.3	+	+	Yellow	Yellow	33	+	+	+	Salmonella sp	2.39	+
R150	0.4	-	-	-	-	-	N/A	N/A	-	-	Pink	Blue	0	-	-	-	N/A	N/A	-
R125	4	+	+	+	+	+	Salmonella sp	2.25	+	+	Yellow	Yellow	6	+	+	+	Salmonella sp	2.27	+
R126	4	+	+	+	+	+	Salmonella sp	2.38	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.14	+

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R127	4	+	+	+	+	+	Salmonella sp	2.22	+	+	Yellow	Black	0	+	+	+	Salmonella sp	2.16	+
R128	4	+	+	+	+	+	Salmonella sp	2.4	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.45	+
R129	4	+	+	+	+	+	Salmonella sp	2.36	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.44	+
Environmental samles - Process water																			
R91	N/A	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R92	N/A	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R93	N/A	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R94	N/A	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R95	N/A	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R131	0.6	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R132	0.6	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R133	0.6	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R134	0.6	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R135	0.6	-	-	-	-	-	N/A	N/A	-	-	Blue	Blue	0	-	-	-	N/A	N/A	-
R101	0.6	+	+	+	+		Salmonella sp	2.45	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.42	+
R102	0.6	+	+	+	+		Salmonella sp	2.52	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.4	+

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R103	0.6	+	+	+	+		Salmonella sp	2.48	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.42	+
R104	0.6	+	+	+	+		Salmonella sp	2.46	+	+	Yellow	Yellow	5	+	+	+	Salmonella sp	2.45	+
R105	0.6	+	+	+	+		Salmonella sp	2.45	+	+	Yellow	Yellow	91	+	+	+	Salmonella sp	2.25	+
R106	0.6	+	+	+	+		Salmonella sp	2.47	+	+	Yellow	Yellow	10	+	+	+	Salmonella sp	2.37	+
R107	0.6	+	+	+	+		Salmonella sp	2.52	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.44	+
R108	0.6	+	+	+	+		Salmonella sp	2.52	+	+	Yellow	Yellow	63	+	+	+	Salmonella sp	2.31	+

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R109	0.6	+	+	+	+		Salmonella sp	2.54	+	+	Yellow	Yellow	1	+	+	+	Salmonella sp	2.51	+
R110	0.6	+	+	+	+		Salmonella sp	2.43	+	+	Yellow	Yellow	98	+	+	+	Salmonella sp	2.29	+
R111	0.6	+	+	+	+		Salmonella sp	2.46	+	+	Yellow	Yellow	69	+	+	+	Salmonella sp	2.5	+
R112	0.6	+	+	+	+		Salmonella sp	2.52	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.53	+
R113	0.6	+	+	+	+		Salmonella sp	2.46	+	+	Yellow	Yellow	81	+	+	+	Salmonella sp	2.45	+
R114	0.6	+	+	+	+		Salmonella sp	2.35	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.36	+

Code	Level of contamination cfu per portion	Reference method ISO 6579-1: 2017								Alternative method - CD SL									
		XR	BR	XM	BM	Presumptive result	Maldi	Score	Confirmed Result	Growth	Colour of Inoc point	Colour of Surrounding area	Colonies	Presumptive Result	XLD	BGAM	Maldi	Score	Confirmed Result
R115	0.6	+	+	+	+		Salmonella sp	2.32	+	+	Yellow	Yellow	117	+	+	+	Salmonella sp	2.31	+
R116	3	+	+	+	+		Salmonella sp	2.31	+	+	Yellow	Yellow	1	+	+	+	Salmonella sp	2.34	+
R117	3	+	+	+	+		Salmonella sp	2.43	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.49	+
R118	3	+	+	+	+		Salmonella sp	2.36	+	+	Yellow	Yellow	3	+	+	+	Salmonella sp	2.37	+
R119	3	+	+	+	+		Salmonella sp	2.39	+	+	Yellow	Yellow	0	+	+	+	Salmonella sp	2.42	+
R120	3	+	+	+	+		Salmonella sp	2.53	+	+	Yellow	Yellow	8	+	+	+	Salmonella sp	2.51	+