

NF VALIDATION
Validation of alternative analytical methods
Application in food microbiology

Summary report

Validation study according to the EN ISO 16140-2:2016

CHROMID® Coli (COLI ID-F)

(Certificate number: BIO 12/19 - 12/06)

for the enumeration of β -glucuronidase-positive *Escherichia coli*
at 37°C in a broad range of foods

Quantitative method

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This report consists of 55 pages, including 8 appendices.

Only copies including the totality of this report are authorised.

Competencies of the laboratory are certified by COFRAC accreditation for the analyses marked with the symbol♦.

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Quality Assurance documents related to this study can be consulted upon request from **bioMérieux**.

Measurement uncertainty on the reference method results is not taken into account to provide the conclusion in this report; this measurement uncertainty is however available.

The technical protocol and the result interpretation were realised according to the EN ISO 16140-2:2016 and the AFNOR technical rules (PR Revision 7).

Validation protocols	<ul style="list-style-type: none"> ▪ ISO 16140-1 (2016): Microbiology of the food chain - Method validation — <i>Part 1: Vocabulary</i> ▪ ISO 16140-2 (2016): Microbiology of the food chain - Method validation — <i>Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method</i> ▪ AFNOR technical rules (PR Revision 7).
Reference method[♦]	EN ISO 16649-2 (July 2001): Microbiology of food and animal feeding stuffs. Horizontal method for the enumeration of β glucuronidase-positive <i>Escherichia coli</i> – Part 2: colony-count technique at 44°C using 5-bromo-4-chloro-3 indolyl β -D-glucuronate
Alternative method	CHROMID® Coli (COLI ID-F) for the enumeration of β glucuronidase-positive <i>Escherichia coli</i> at 37°C
Scope	Broad range of foods
Certification organization	AFNOR Certification (http://nf-validation.afnor.org/)

[♦] Analyses performed according to the COFRAC accreditation

1 INTRODUCTION

The **CHROMID® Coli (COLI ID-F) for the enumeration of β -Glucuronidase positive *Escherichia coli* at 37°C** was validated in 2006 according to the EN ISO 16140:2003 protocol and the AFNOR technical rules (Certificate number: BIO 12/19 - 12/06).

Table 1 summarizes the different steps of the validation that occurred since the initial validation.

Table 1 - Steps of the AFNOR Certification validation

Date	Study
14/12/2006	Initial Validation for a broad range of food according to ISO 16140 (2003)
2010	Renewal study
27/11/2014	Renewal study
December 2018	Renewal study according to the EN ISO 16140-2:2016
October 2022	Renewal study

2 METHODS DESCRIPTION

2.1 Alternative method

2.1.1 Principle

The CHROMID® Coli (Coli ID-F) is a chromogenic media which allows the enumeration of coliforms and β glucuronidase-positive *Escherichia coli*. This medium contains 2 chromogenic substrates. The coliforms (different from *Escherichia coli*) appear as blue to grey colonies. The *Escherichia coli* appear as pink to violet colonies due to the presence of β -glucuronidase. Only the *Escherichia coli* enumeration has to be considered for the present study.

2.1.2 Protocol

The protocol is described in **Appendix 1**.

2.1.3 Restrictions

There is no restriction for use.

2.2 Reference method♦

The reference method is the ISO 16649-2 (July 2001): Horizontal method for the enumeration of β glucuronidase positive *Escherichia coli* – Part 2: colony-count technique at 44°C using 5-bromo-4-chloro-3 indolyl β -D-glucuronate. The flow diagram is provided in **Appendix 2**.

2.3 Protocols applied during the initial validation and the renewal study

The plates were incubated for 22 h at 37°C \pm 1°C.

3 INITIAL VALIDATION, EXTENSION/RENEWAL STUDIES: RESULTS

3.1 Method comparison study

The method comparison study is a study performed by the expert laboratory to compare the alternative method with the reference method.

The study was carried out on a diversity of samples and strains representative of agri-food products. This does not constitute an exhaustive list of the different matrices included in the scope. For any comment on the alternative method, please contact AFNOR Certification at <http://nf-validation.afnor.org/contact-2/>.

3.1.1 Relative trueness study

The relative trueness is the degree of correspondence between the response obtained by the reference method and the response obtained by the alternative method on identical samples.

3.1.1.1 Number and nature of the samples

Five food categories were tested with a minimum of 15 interpretable results per category and 5 interpretable results per type.

88 samples were tested for the initial validation study, 47 for a study run for bioMérieux in 2011 and 52 samples for this renewal study.

The repartition per tested category and type is provided in **Table 2**. Combining all the studies 187 samples were analyzed, leading to 132 exploitable results.

Table 2 – Repartition per tested category and type

Category	Type	Number of samples tested				Number of samples with interpretable results by both methods				
		2006	2011	2018	Total	2006	2011	2018	Total	
1	Meat and meat products	a Raw (unseasoned)	10	10	0	20	3	10	0	13
		b Raw and cooked delicatessen	6	15	0	21	3	15	0	18
		c RTE, RTRH	4	9	0	13	2	9	0	11
		Total	20	34	0	54	8	34	0	42
2	Milk and dairy products	a Raw milk	5	0	2	7	5	0	2	7
		b Cream, desserts and cheeses	3	0	8	11	2	0	5	7
		c Milk powder	0	0	11	11	0	0	5	5
		Total	8	0	21	29	7	0	12	19
3	Seafood products	a Raw fish, selfish	4	0	10	14	4	0	7	11
		b Smoked and marinated	6	0	2	8	6	0	2	8
		c RTE, RTRH	0	1	11	12	0	1	4	5
		Total	10	1	23	34	10	1	13	24
4	Vegetables	a Raw vegetables	9	0	0	9	6	0	0	6
		b Frozen	8	1	0	9	4	1	0	5
		c RTE, RTRH	4	8	0	12	1	8	0	9
		Total	21	9	0	30	11	9	0	20
5	Eggs and egg-based products	a Eggs	9	0	0	9	7	0	0	7
		b Egg-based products	13	0	3	16	8	0	2	10
		c Pastries	7	3	5	15	4	3	3	10
		Total	29	3	8	40	19	3	5	27
All categories			88	47	52	187	55	47	30	132

3.1.1.2 Artificial and natural contamination of the samples

66 samples were artificially contaminated using spiking or seeding protocols. The inoculated strains, the injury protocols applied are provided in **Appendix 3**.

60 samples gave interpretable results by both methods.

72 samples giving interpretable results by both methods were naturally contaminated.

54.5 % of the samples were naturally contaminated.

3.1.1.3 Raw data

The raw data are provided in **Appendix 4**.

The samples were analyzed by the reference and the alternative methods in order to have 15 interpretable results per category, and 5 interpretable results per tested type.

The data are classified in four categories (See **Table 3**):

- Interpretable results with the reference and the alternative methods.
- Results with less than 4 colonies per plate with the reference and/or the alternative method (indicated with "*" in the data) in order to have a more precise result. These results were not included in the calculation.
- Results below or above the quantification limit: according to the ISO 16140-2:2016, if any result (either reference or alternative method) is below the quantification limit, the data should be plotted using a substituted value of 1 log₁₀ unit less than the observed value. Similarly, any value greater than the upper limit should be amended by adding log₁₀ unit more. These results are not included in the calculations but also appear on the graphs.
- Samples with undetermined results (ND) (high level of background microflora).

Table 3 - Classification of the data

Category		Type	Number of samples tested	Number of interpretable results by both methods	Number of samples with <4 CFU/plate	Number of samples with <1 CFU or >150 CFU/plate	Number of samples with undetermined result
1	Meat and meat products	a Raw (unseasoned)	20	13	2	3	2
		b Raw and cooked delicatessen	21	18	3	0	0
		c RTE, RTRH	13	11	2	0	0
		Total	54	42	7	3	2
2	Milk and dairy products	a Raw milk	7	7	0	0	0
		b Cream, desserts and cheeses	11	7	0	4	0
		c Milk powder	11	5	0	6	0
		Total	29	19	0	10	0
3	Seafood products	a Raw fish	14	11	0	3	0
		b Smoked and marinated	8	8	0	0	0
		c RTE, RTRH	12	5	1	6	0
		Total	34	24	1	9	0
4	Vegetables	a Raw vegetables	9	6	0	3	0
		b Frozen	9	5	2	2	0
		c RTE, RTRH	12	9	1	1	1
		Total	30	20	3	6	1
5	Eggs and egg-based products	a Eggs	9	7	1	1	0
		b Egg-based products	16	10	2	4	0
		c Pastries	15	10	2	3	0
		Total	40	27	5	8	0
All categories			187	132	16	36	3

The samples, which were not used in the calculations, are provided in **Table 4**.

Table 4 - Samples which were not used in the calculations

Sample N°	Product	ISO 16649-2 [♦]	CHROMID® (COLI ID-F) for the enumeration of β -glucuronidase-positive <i>Escherichia coli</i> at 37°C	Category	Type
562	Raw veal meat	<2,00	<1,00	1	a
563	Raw veal meat	1,00*	<1,00	1	a
564	Raw veal meat	<1,00	1,00*	1	a
565	Raw meat	1,30*	ND	1	a
566	Raw chicken meat	1,70	ND	1	a
594	Raw pork meat	1,60*	1,70	1	a
640	Raw chicken meat	0,70*	1,00*	1	a
590	Sausage	1,65	1,00*	1	b
591	Sausage	1,70	1,00*	1	b
592	Sausage	1,54*	1,00*	1	b
589	Tartar	1,30*	1,60	1	c
595	RTRH pork meat	1,00*	1,30*	1	c
726	Cheese	<1,00	<1,00	2	b
6283	Raw milk cheese	<1,00	<1,00	2	b
6284	Raw milk cheese	<1,00	<1,00	2	b
6405	Cheese	<1,00	<1,00	2	b
6297	Skimmed milk powder	<1,00	<1,00	2	c
6298	Skimmed milk powder	<1,00	1,30*	2	c
6299	Whole milk powder	<1,00	<1,00	2	c
6300	Whole milk powder	<1,00	2,85	2	c
6738	Skimmed milk powder	2,96*	<3,00	2	c
6739	Skimmed milk powder	<3,0	3,30*	2	c
6169	Raw fish	<1,00	<1,00	3	a
6402	Raw lobster	<1,00	<1,00	3	a
6403	Raw salmon	<1,00	<1,00	3	a
6170	RTRH seafood	<1,00	<1,00	3	c
6279	RTRH fish	<1,00	<1,00	3	c
6280	RTRH salmon	<1,00	<1,00	3	c
6398	RTRH mussels	1,00*	<1,00	3	c
6399	RTRH mussels	<1,00	<1,00	3	c
6400	Scallops	<1,00	<1,00	3	c
6401	RTRH fish	1,78	1,30*	3	c
629	Green beans	<1,00	<1,00	4	a
630	Zucchini	<1,00	1,00*	4	a
1346	Salad	2,18*	<2,00	4	a
627	Frozen Brussel sprout	<1,00	1,00*	4	b
631	Frozen vegetables mix	<1,00	<1,00	4	b
1348	Frozen zucchini	1,70*	2,00*	4	b
1349	Frozen vegetables mix	1,70*	2,78	4	b
561	RTRH Spinach	<2,00	ND	4	c
593	Piemontaise	1,18*	1,00*	4	c
1347	Salad mix	<2,00	2,00*	4	c

[♦] Analyses performed according to the COFRAC accreditation

Sample N°	Product	ISO 16649-2 [†]	CHROMID® (COLI ID-F) for the enumeration of β -glucuronidase-positive <i>Escherichia coli</i> at 37°C	Category	Type
728	Egg liquid	2,00	1,48*	5	a
827	Egg liquid	<1,00	<1,00	5	a
588	Chocolate meringue	<1,00	<1,00	5	b
1352	Mayonnaise	2,48*	2,70	5	b
1685	Cake with eggs	3,48*	3,70	5	b
1687	Cake with eggs	<3,00	3,48*	5	b
1688	Cake with eggs	<3,00	<3,00	5	b
6278	Quiche with eggs	<1,00	1,00*	5	b
587	Pastry	<1,00	1,00*	5	c
1350	Pastry	2,70	2,00*	5	c
1686	Pastry	3,54*	3,48*	5	c
6171	Pastry	<1,00	<1,00	5	c
6281	Pastry	<1,00	<1,00	5	c

*: Results with less than 4 colonies per plate with the reference and/or the alternative method

ND: samples with non-determined results (high background microflora)

3.1.1.4 Statistical interpretation

The calculations are provided in **Appendix 5**.

The obtained data were analyzed using the scatter plot. The graphs are provided with the line of identity ($y = x$).

The Figures 1 to 5 show the data plotted for each individual category.

The Figure 6 shows the data plotted for all the products.

Figure 1 - Data plotted for the **Meat and meat products**

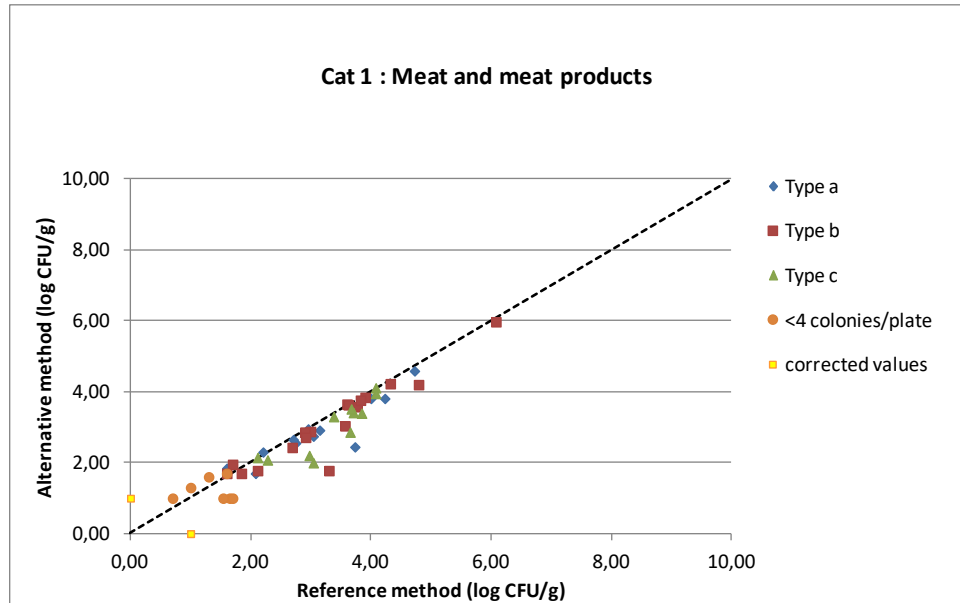


Figure 2 - Data plotted for **Milk and dairy products**

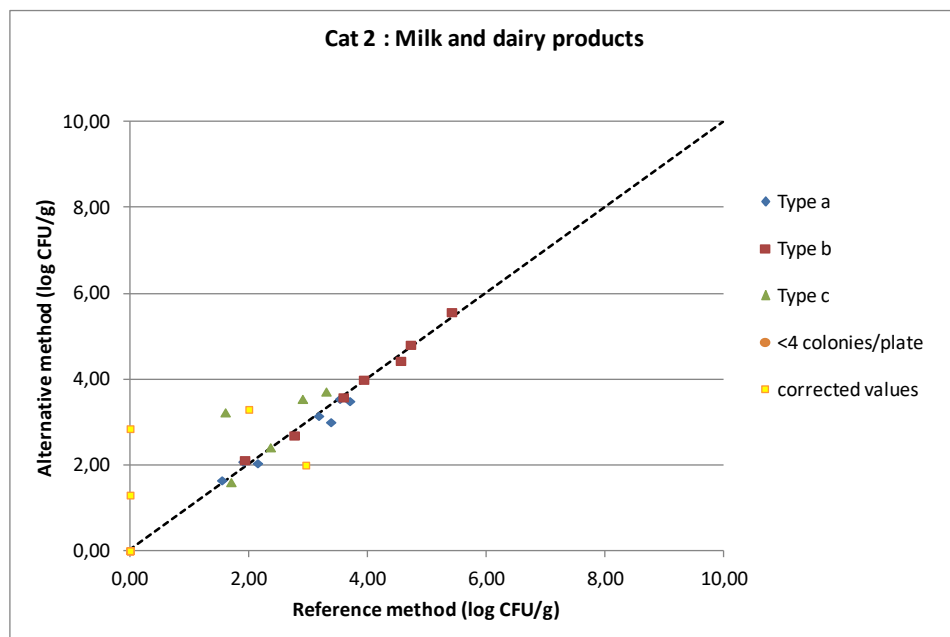


Figure 3 - Data plotted for **Seafood products**

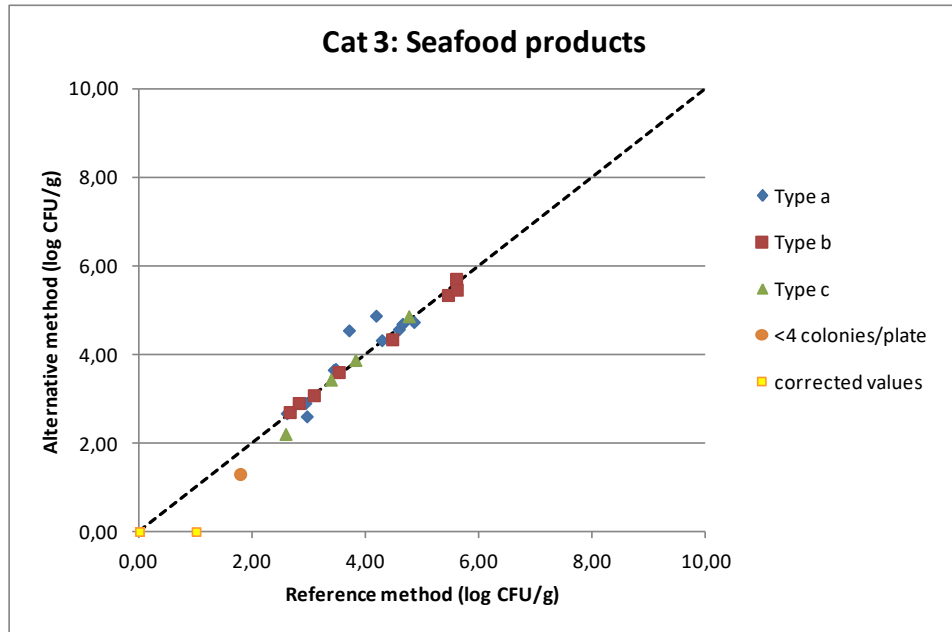


Figure 4 - Data plotted for **Vegetables**

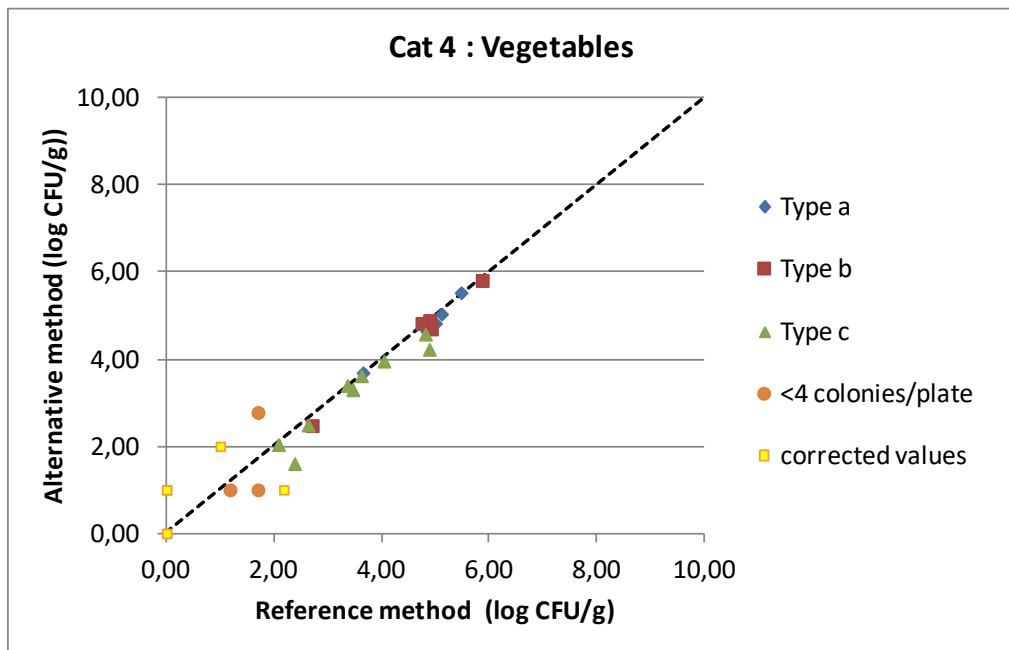


Figure 5 - Data plotted for **Eggs and egg-based products**

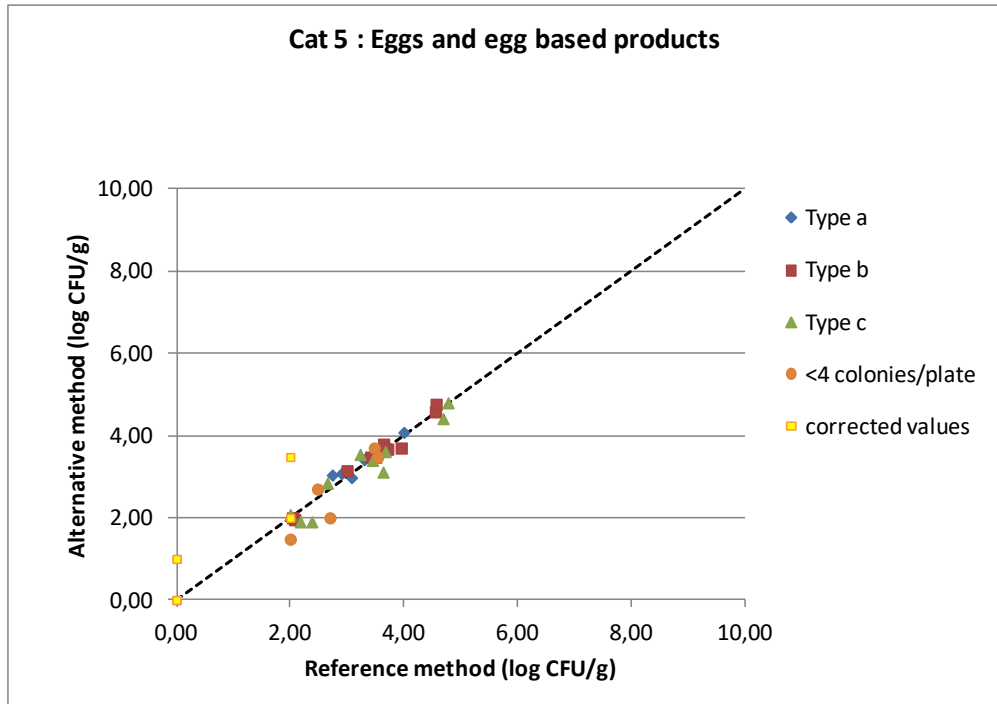
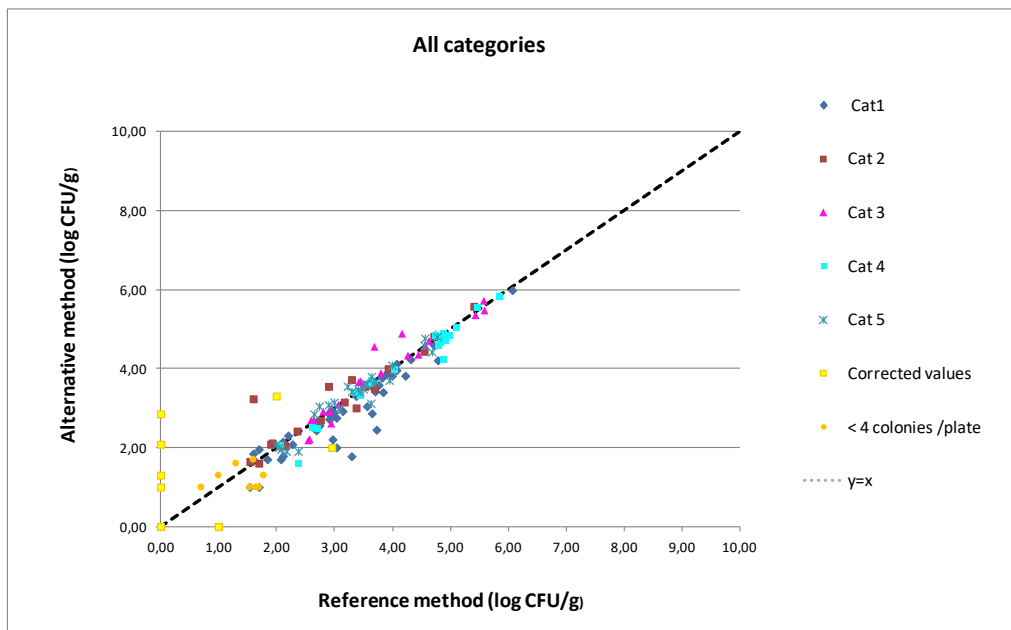


Figure 6 - Data plotted for all the products



The calculated values for Average difference and Standard deviation differences per category are provided in **Table 5**.

Table 5 - Calculated values

Category		Number of samples with interpretable results	\bar{D}	SD	Lower limit (95%)	Upper limit (95%)
1	Meat and meat products	44	-0,26	0,36	-0,99	0,46
2	Milk and dairy products	19	0,13	0,43	-0,79	1,05
3	Seafood products	24	0,04	0,28	-0,54	0,63
4	Vegetables	20	-0,14	0,22	-0,62	0,33
5	Eggs and egg-based products	27	-0,01	0,21	-0,45	0,42
All categories		134	-0,06	0,33	-0,72	0,60

\bar{D} : Average difference

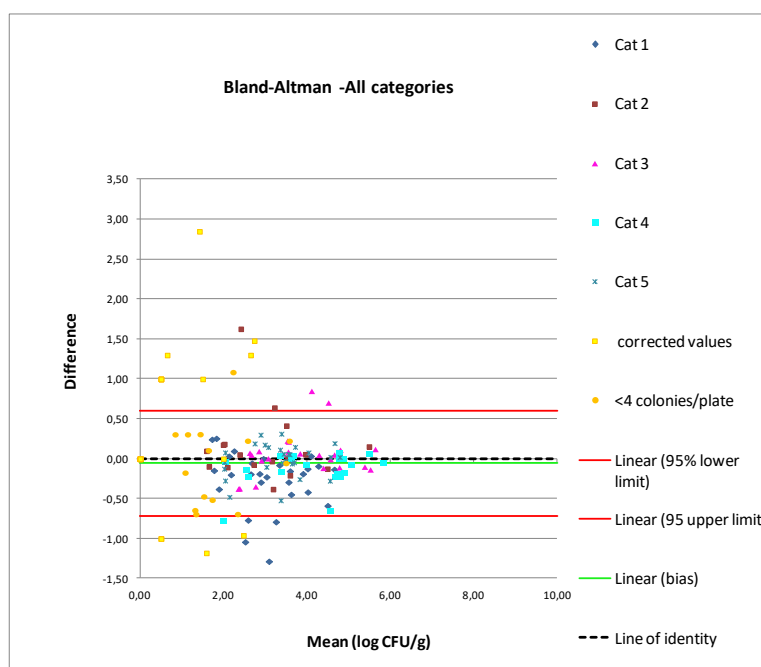
SD: Standard deviation of differences

The average differences vary from – 0.26 log (meat and meat products) to 0.13 log (milk and dairy products).

The bias between the two methods for all categories combined is -0.06 log CFU.

The Bland-Altman difference plot for all the samples is given **Figure 7**.

Figure 7 – Bland-Altman difference plot for all the samples





Samples for which the difference between the result observed with the reference and the alternative methods is higher or lower than the limits are listed in **Table 6**.

Table 6 - Analysis of the data out of the confidence limits

Classification of the data	CHROMID® (COLI ID-F) for the enumeration of <i>Escherichia coli</i> at 37°C									
	Category	Type	Sample N°	Product	Reference method	Alternative method	Values before correction (reference and/or alternative)	Mean	Difference	LCL and UCL
Interpretable results	1	a	1913	Raw turkey meat	3,73	2,45	/	3,09	-1,29	-0,72 / 0,60
	1	c	2066	RTRH pork meat	3,04	2,00	/	2,52	-1,04	
	1	c	2368	Sandwich with ham	3,65	2,86	/	3,26	-0,79	
	1	c	2482	RTE salad with chicken	2,97	2,20	/	2,59	-0,77	
	4	c	2365	RTE vegetables mix	2,38	1,60	/	1,99	-0,78	
	2	c	6301	Skimmed milk powder	1,60	3,23	/	2,42	1,63	
	2	c	6736	Half skimmed milk powder	2,90	3,54	/	3,22	0,64	
	3	a	6728	Raw shrimps	3,70	4,54	/	4,12	0,85	
3	a	6729	Scallops	4,18	4,88	/	4,53	0,70		
<4 CFU/plate	4	b	1349	Frozen vegetables mix	1,70	2,78	/	2,24	1,08	
> or <	1	a	562	Raw veal meat	1,00	0,00	2,00/1,00	0,50	-1,00	
	1	a	563	Raw veal meat	1,00	0,00	1,00	0,50	-1,00	
	2	c	6738	Skimmed milk powder	2,96	2,00	3,00	2,48	-0,96	
	4	a	1346	Salad	2,18	1,00	2,00	1,59	-1,18	
	4	c	6398	RTRH mussels	1,00	0,00	1,00	0,50	-1,00	
	1	a	564	Raw veal meat	0,00	1,00	1,00	0,50	1,00	
	2	c	6298	Skimmed milk powder	0,00	1,30	1,00	0,65	1,30	
	2	c	6300	Whole milk powder	0,00	2,85	1,00	1,43	2,85	
	2	c	6739	Skimmed milk powder	2,00	3,30	3,00	2,65	1,30	
	4	a	630	Zucchini	0,00	1,00	1,00	0,50	1,00	
	4	b	627	Frozen Brussel sprout	0,00	1,00	1,00	0,50	1,00	
	4	c	1347	Salad mix	1,00	2,00	2,00	1,50	1,00	
	5	b	1687	Cake with eggs	2,00	3,48	3,00	2,74	1,48	
	5	b	6278	Quiche with eggs	0,00	1,00	1,00	0,50	1,00	
5	c	587	Pastry	0,00	1,00	1,00	0,50	1,00		

Values in green: differences in favour of the alternative method Values in red: differences in favour of the reference method Values in black: equivalent enumeration observed for the two methods

 Corrected value
 Results calculated using enumeration lower than 4 CFU/plate

Bold typing: samples artificially contaminated

The values outside of the confidence limits at 95 % concern:

- 9 samples with interpretable results by both methods (5 samples below the LCL and 4 above the UCL)
- 1 sample with less than 4 colonies on the plate (TBX) (above the UCL)
- 15 samples below or above the quantification limits (10 for the reference method, 4 for the alternative method, and 1 for both methods)

3.1.1.5 Discordant results

The number of samples below or above the CLs is given in **Table 7**.

Table 7 - Number of samples outside the CLs

		Number of samples
Interpretable results by both methods	< LCL	5
	> UCL	4
	Total	9
<4 CFU/plate	< LCL	0
	> UCL	1
	Total	1
< or > the quantification limit	< LCL	5
	> UCL	10
	Total	15
Total < LCL		10
Total >UCL		15
TOTAL		25

The number of samples with higher enumeration observed with the alternative method is equivalent to the number of samples with higher enumeration using the reference method. For 14 samples outside of the confidence interval limits, the results can be considered equivalent.

For one sample, the difference between the two tested methods is relatively high:

Sample 6300 (milk powder): Ref: < 1.00 log CFU/g

Alt: 2.85 log CFU/g

This sample was artificially contaminated with *Escherichia coli* 118.

The TBX media used in the ISO method is probably more selective for this strain than the CHROMID media.

3.1.1.6 Conclusion

**The relative trueness of the alternative method is satisfying.
The alternative method is equivalent to the reference method.**

3.1.2 Accuracy profile study

The accuracy profile is a graphical representation of the capacity of measurement of the quantitative method, obtained by combining acceptability intervals and β -expectation tolerance intervals, both reported to different levels of the reference value.

3.1.2.1 Matrices

Five matrices were tested. A minimum of one type per category, and therefore 2 different batches, was selected, using 6 samples per type. 2 samples are contaminated at a low level, 2 at intermediate level, 2 at a high level. For each sample, 5 replicates (5 different test portions) were tested. The tested categories, types, matrix and inoculated strains are provided in **Table 8**.

Table 8 - Categories, types and matrices

	Category	Type	Matrix	Inoculated strain	Origin	Inoculation level (CFU/g)
1	Meat products and meat	a Raw meat	Ground beef	<i>Escherichia coli</i> 13	Ground beef	300 50000 100000
2	Milk and dairy products	b Dessert	Vanilla dairy-based dessert	<i>Escherichia coli</i> 94	Cheese	
3	Seafood products	a Raw fish	Raw fish fillet	<i>Escherichia coli</i> Ad228	Fish	
4	Vegetables	c RTE, RTRH	Grated carrots	<i>Escherichia coli</i> 19	Grated carrots	
5	Eggs and egg-based products	a Eggs	Liquid egg product	<i>Escherichia coli</i> 142	Liquid egg product	

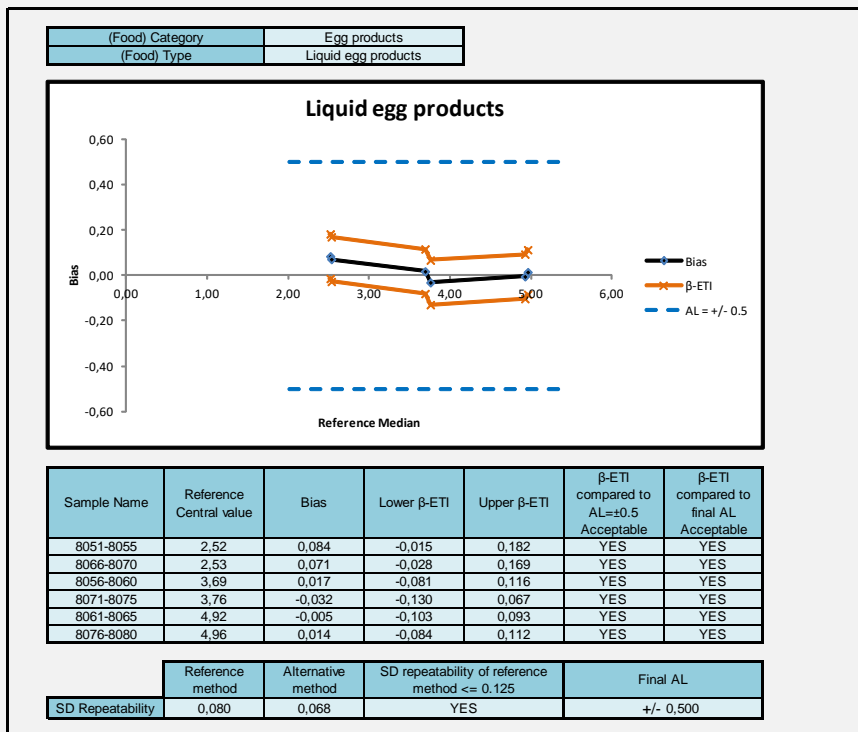
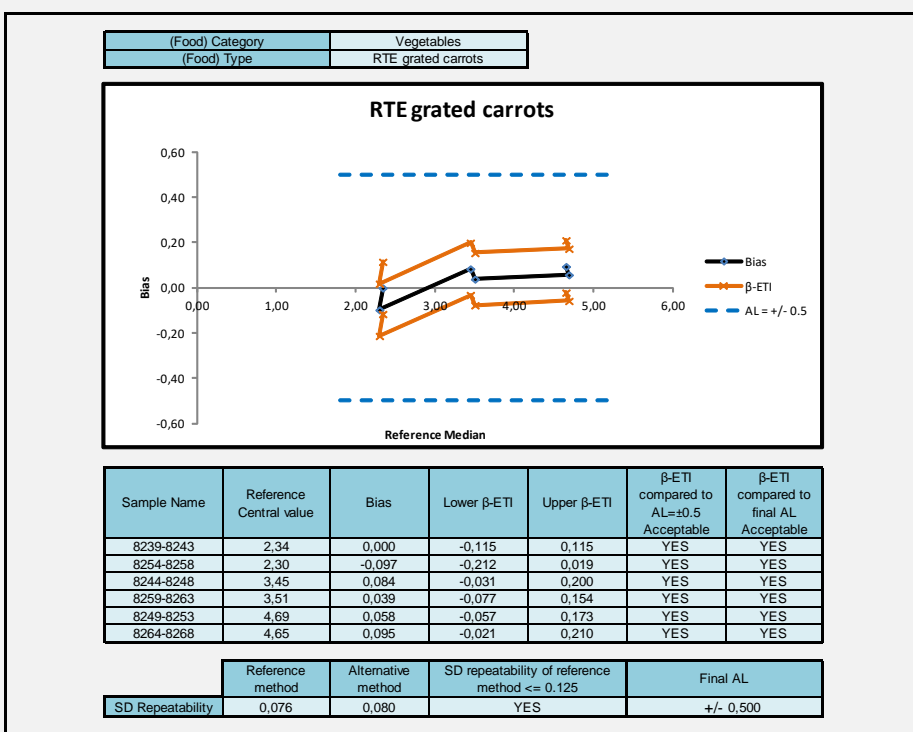
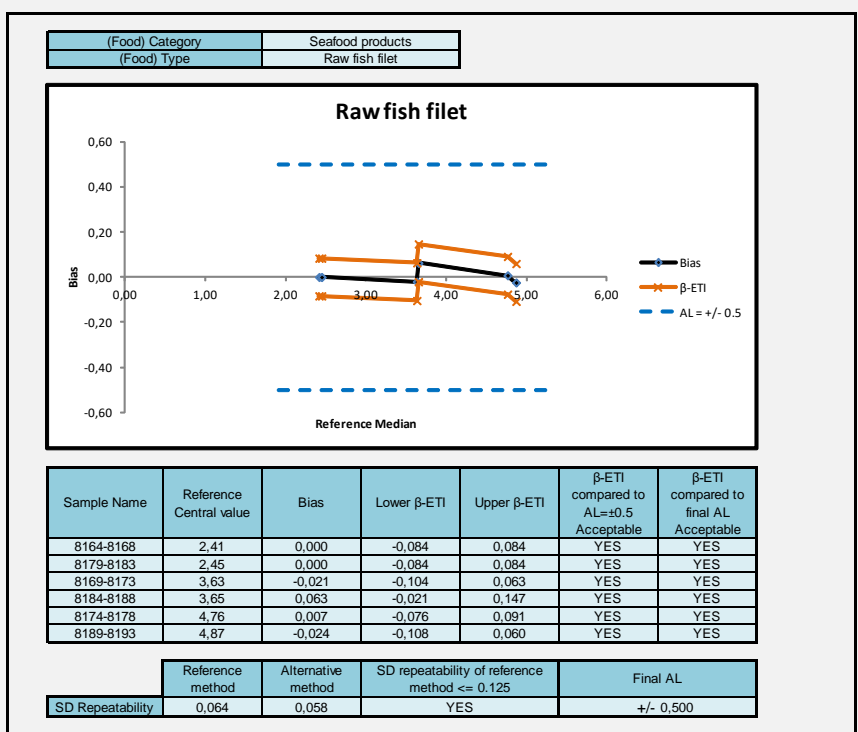
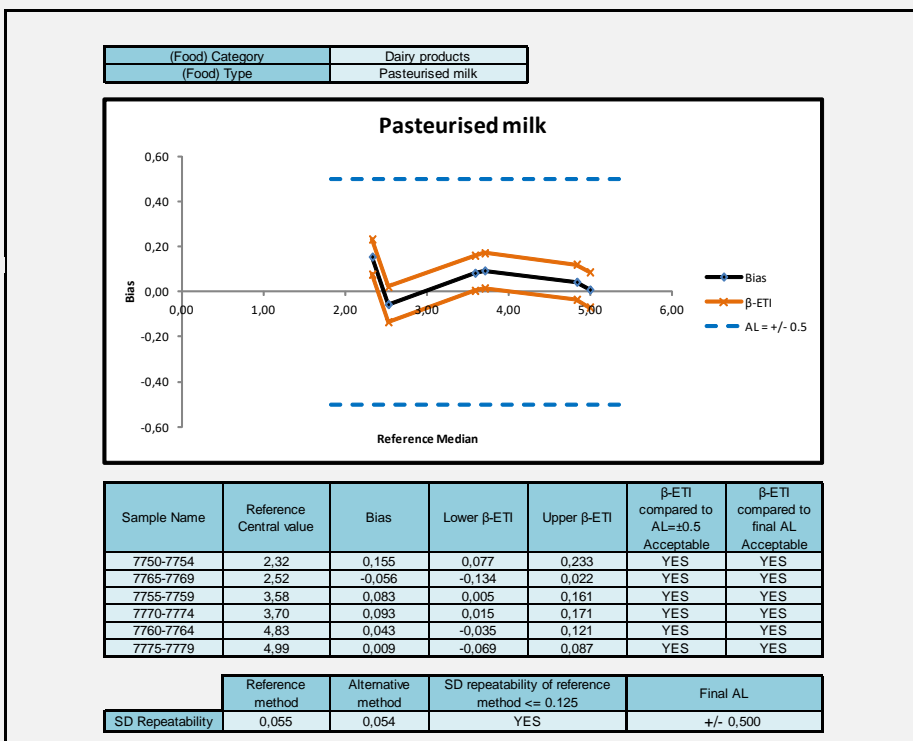
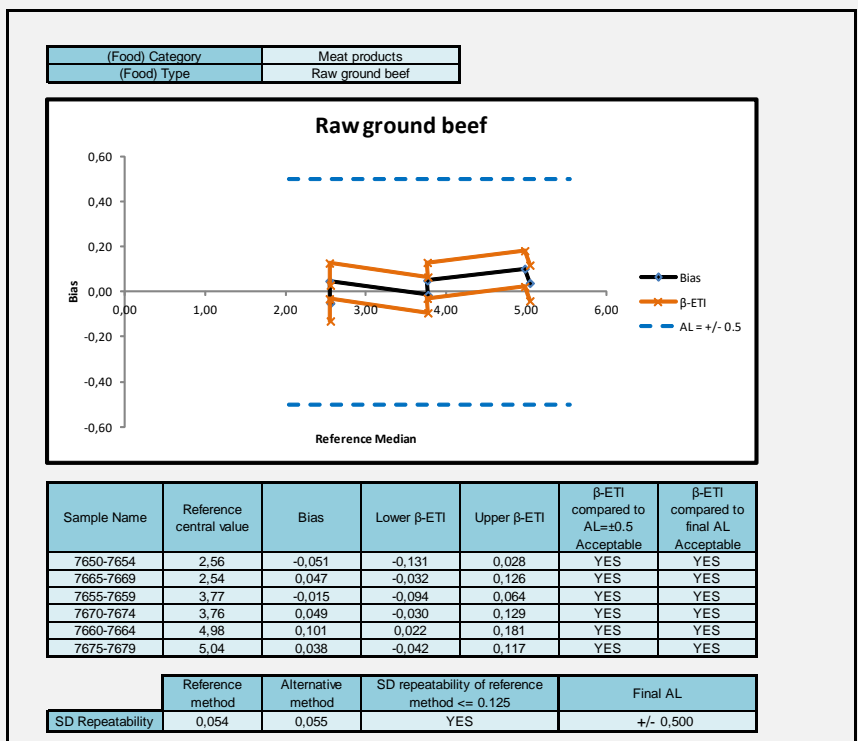
3.1.2.2 Calculation and interpretation

The raw data are provided in **Appendix 6**. The summary tables (in log CFU/g) and calculations are provided in **Appendix 7**. The statistical results and the accuracy profiles are provided **Figure 8**.

The calculations were done using the AP Calculation Tool MCS (Clause 6-1-3-3 calculation and interpretation of accuracy profile study) ver 2027-01-2015 available on <http://standards.iso.org/iso/16140>

The accuracy profiles are comprised within the Acceptability Limits for all the tested matrices.

Figure 8 – Accuracy profile



3.1.2.3 Conclusion

The observed profiles are comprised within the AL. All the accuracy profiles fulfil the performance criteria.

3.1.3 Inclusivity and exclusivity studies

The inclusivity study is a study involving pure target strains to be detected or enumerated by the alternative method.

The exclusivity study is a study involving pure non-target strains, which can be potentially cross-reactive, but are not expected to be detected or enumerated by the alternative method.

For the initial validation study (1998), 20 target and 23 non-target strains were tested once on PCA, in duplicate on VRBL (44.5°C - V08-017) and CHROMID Coli (37°C). 10 additional target strains were tested in 2006 in duplicate on PCA, TBX (ISO 16649-2) and CHROMID Coli (37°C).

In 2018, 20 target strains and 8 non-target strains were tested once on PCA, TBX and CHROMID Coli (37°C).

The raw data are provided in **Appendix 8**.

> **Inclusivity**

Among the 50 target strains tested, 6 gave non-typical colonies using the CHROMID Coli:

- *Escherichia coli* Adria12;
- *Escherichia coli* Adria20;
- *Escherichia coli* ATCC 43888;
- *Escherichia coli* Adria1816;
- *Escherichia coli* Adria1999;
- *Escherichia coli* Adria1386.

All these strains are β -glucuronidase negative and all of them tested on TBX also gave atypical white colonies

> **Exclusivity**

30 non-target strains were tested; 2 strains gave doubtful colonies on CHROMID Coli plates.

- *Escherichia vulneris* 151 (pink- purple colonies)
- *Plesiomonas shigelloides* (white-pink colonies).

The CHROMID Coli method is as specific and selective as the reference method.

3.1.4 *Practicability*

The alternative method practicability was evaluated according to the AFNOR criteria relative to method comparison study.

Storage conditions, shelf-life and modalities of utilisation after first use	The bottles are stored in their boxes at 2°C -8°C until the expiry date and kept away from light The agar cannot be melted more than twice		
Time to result	Steps	Reference method	Alternative method
	Negative samples		
	Sampling analysis	D0	D0
	Enumeration	D1	D1
Common step with the reference method	Preparation of initial suspension		

The *Escherichia coli* enumeration is obtained in one day by both methods

3.2 Inter-laboratory study organisation and results

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.

The study was run in 2006. Pasteurised half-skimmed milk inoculated with *Escherichia coli* 94 and *Enterobacter cloacae* FB2 was used for the study. 14 laboratories participated in the study.

The results of the inter-laboratory study run in 2006 were interpreted according to the EN ISO 16140-2:2016 standard using the Excel spread sheet available at <http://standards.iso.org/iso/16140> (AP Calculation tool ILS (clause 6.2.3 Calculation summary and interpretations of data) ver 14.03.2016).

3.2.1 Experimental parameters controls

3.2.1.1 Sample stability

> **Strain stability during transport**

Two samples inoculated per inoculation level were tested for enumeration after 24 h and 48 h storage at $3^{\circ}\text{C} \pm 2^{\circ}\text{C}$ (See **Table 9**).

Table 9 – *Escherichia coli* 94 stability in the matrix

	Level 1		Level 2		Level 3	
	Replicate 1	Replicate 2	Replicate 1	Replicate 2	Replicate 1	Replicate 2
Day 0	55	47	450	450	3 500	2 700
Day 1	36	53	420	350	3 900	4 500
Day 2	38	47	340	550	5 000	4 400

No evolution was observed during storage for 48 h at $5^{\circ}\text{C} \pm 3^{\circ}\text{C}$.

3.2.2 Logistic conditions

The temperatures measured at reception by the Labs, the temperatures registered by the thermo-probe, and the receipt dates are given in Table 10.

Table 10 - Sample temperatures at receipt

Collaborator	Temperature measured at receipt (°C)	Date and hour receipt of the samples		Temperature measured by the probe (°C)
A	7.5	Day 2	14h00	0.5
B	2.0	Day 1	11h15	0.0
C	4.0	Day 1	11h30	<i>Probe not received</i>
D	3.0	Day 1	08h30	0.0
E	2.5	Day 2	09h10	0.0
F	0.3	Day 1	11h20	- 2.5 ¹
G	4.6	Day 1	10h00	0.00
H	0.2	Day 1	08h15	0.00
I	0.4	Day 1	09h30	0.00
J	1.0	Day 1	11h30	- 1.00 ¹
K	0.6	Day 1	09h20	0.00
L	0.3	Day 1	13h15	0.00
M	0.0	Day 1	11h00	0.00
N	0.3	Day 1	08h45	0.00

All the packages were declined at Day 1 except for two labs (A and E) which received their sample at Day 2. All the temperature measured at receipt were correct or below 8.4°C. No problem was encountered during transport.

3.2.3 Result analysis

3.2.3.1 Results obtained by the expert Lab.

The results obtained by the expert Lab. are the following (See Table 11).

Table 11 – Results obtained by the expert Lab.

Level (log CFU/g)	Reference method		Alternative method	
	Replicate 1	Replicate 2	Replicate 1	Replicate 2
< 1	< 1	< 1	< 1	< 1
1 to 2	1,64	1,68	1,76	1,68
2 to 3	2,54	2,59	2,70	2,69
3 to 4	3,63	3,59	3,83	3,79

¹ Some temperatures below 0°C were noticed but the samples were not frozen.

3.2.3.2 Results obtained by the collaborators

Samples were sent to 14 collaborators.

> *Mesophilic aerobic microflora*

The mesophilic aerobic microflora was done on the matrix with ISO 4833 method. The results varied from 22 000 to 480 000 CFU/ml.

> *Escherichia coli enumeration*

A summary of the test results is given in **Table 12** (CFU/g) and **Table 13** (log CFU/g).

Table 12 - Summary of data (CFU/g)

Collaborator	Level 0				Level 1				Level 2				Level 3			
	Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method	
A	<10	<10	<10	<10	35	40	30	50	390	510	520	500	3200	3800	4600	6600
B	<1	<1	<1	<1	43	42	55	55	620	550	590	450	5500	4900	7200	6000
C	<10	<10	<10	<10	65	55	40	40	380	400	340	460	5300	4400	4500	4800
D	<10	<10	<10	<10	30	50	50	90	440	360	510	500	3000	3600	4800	3600
E	<1	<1	<1	<1	44	45	49	31	480	380	550	520	4800	4400	6700	5600
F	<1	<1	<1	<1	25	41	54	50	490	600	640	620	5200	7000	4800	4900
G	<10	<10	<10	<10	35	45	40	80	360	330	280	430	3500	3500	3800	4700
H	<1	<1	<1	<1	25	43	24	26	360	400	390	280	4000	5000	4400	4200
I	<1	<1	<1	<1	40	39	45	55	420	510	570	470	4000	4900	5400	6700
J	<1	<1	<1	<1	39	34	42	49	440	400	440	550	6100	5000	4800	5700
K	<10	<10	<10	<10	35	45	40	40	590	420	600	460	4600	5000	7000	5900
L	<10	<10	<10	<10	35	50	50	50	430	480	350	560	4800	6500	5400	5500
M	<1	<1	<1	<1	39	43	45	44	430	480	450	410	4800	6500	6100	3700
N	<1	<1	<1	<1	24	20	47	46	450	360	540	540	3600	3700	6000	6300

Table 13 - Summary of data (log CFU/g)

Collabo- rator	Level 0				Level 1				Level 2				Level 3			
	Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method	
A	<1,00	<1,00	<1,00	<1,00	1,544	1,602	1,477	1,699	2,591	2,708	2,716	2,699	3,505	3,580	3,663	3,820
B	<0,00	<0,00	<0,00	<0,00	1,633	1,623	1,740	1,740	2,792	2,740	2,771	2,653	3,740	3,690	3,857	3,778
C	<1,00	<1,00	<1,00	<1,00	1,813	1,740	1,602	1,602	2,580	2,602	2,531	2,663	3,724	3,643	3,653	3,681
D	<1,00	<1,00	<1,00	<1,00	1,477	1,699	1,699	1,954	2,643	2,556	2,708	2,699	3,477	3,556	3,681	3,556
E	<0,00	<0,00	<0,00	<0,00	1,643	1,653	1,690	1,491	2,681	2,580	2,740	2,716	3,681	3,643	3,826	3,748
F	<0,00	<0,00	<0,00	<0,00	1,398	1,613	1,732	1,699	2,690	2,778	2,806	2,792	3,716	3,845	3,681	3,690
G	<1,00	<1,00	<1,00	<1,00	1,544	1,653	1,602	1,903	2,556	2,519	2,447	2,633	3,544	3,544	3,580	3,672
H	<0,00	<0,00	<0,00	<0,00	1,398	1,633	1,380	1,415	2,556	2,602	2,591	2,447	3,602	3,699	3,643	3,623
I	<0,00	<0,00	<0,00	<0,00	1,602	1,591	1,653	1,740	2,623	2,708	2,756	2,672	3,602	3,690	3,732	3,826
J	<0,00	<0,00	<0,00	<0,00	1,591	1,531	1,623	1,690	2,643	2,602	2,643	2,740	3,785	3,699	3,681	3,756
K	<1,00	<1,00	<1,00	<1,00	1,544	1,653	1,602	1,602	2,771	2,623	2,778	2,663	3,663	3,699	3,845	3,771
L	<1,00	<1,00	<1,00	<1,00	1,544	1,699	1,699	1,699	2,633	2,681	2,544	2,748	3,681	3,813	3,732	3,740
M	<0,00	<0,00	<0,00	<0,00	1,591	1,633	1,653	1,643	2,633	2,681	2,653	2,613	3,681	3,813	3,785	3,568
N	<0,00	<0,00	<0,00	<0,00	1,380	1,301	1,672	1,663	2,653	2,556	2,732	2,732	3,556	3,568	3,778	3,799

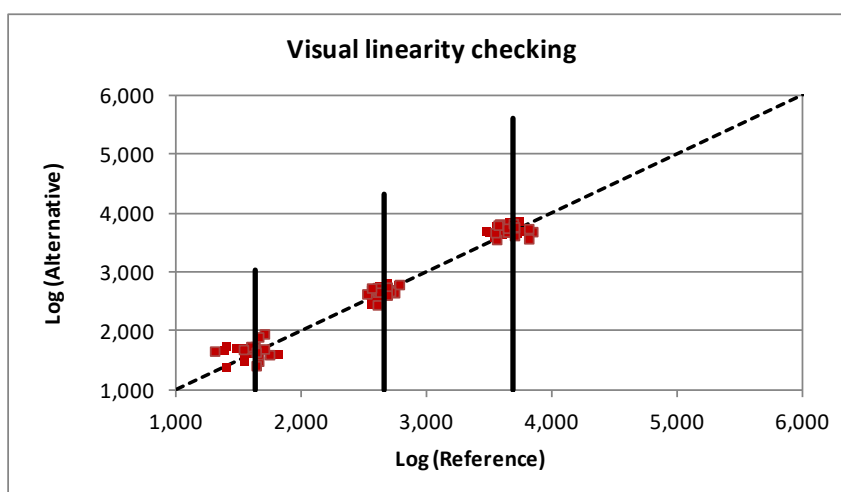
Some labs enumerated the dilution -1, -2, -3 instead of the dilution 0, -1, -2, -3 this explains the results obtained for level 0 (< 1 or < 10 CFU/ml).

3.2.4 Calculation and interpretation

3.2.4.1 Visual linearity checking

The **Figure 9** shows the data points after log₁₀ transformation. The visual inspection shows that the alternative method gives results, which are proportional to those of the reference method. The data are distributed closely to the first bisecting lines with a slope equal to 1.

Figure 9 - Visual linearity checking



3.2.4.2 Accuracy profile calculation

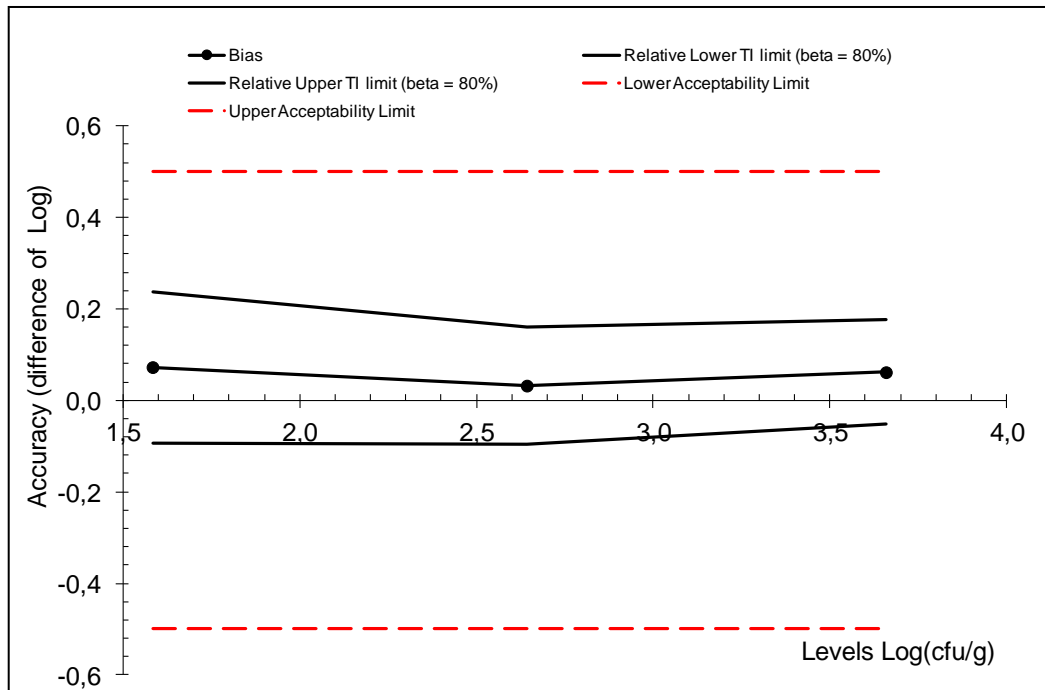
Statistical calculations were done according to the Excel spreadsheet available on <http://standards.iso.org/ISO/16140>. A summary of the statistical test is provided in **Table 14**.

Table 14 - Summary of statistical tests

Accuracy profile		0,5					
Study Name	CHROMID Coli						Application of clause 6.2.3 Step 8: If any of the values for the β -ETI fall outside the acceptability limits, calculate the pooled average reproducibility standard deviation of the reference method. Step 9: Calculate new acceptability limits as a function of this standard deviation.
Date	2006						
Coordinator	ADRIA Développement						
Tolerance probability (beta)	80%	80%	80%				
Acceptability limit in log (lambda)	0,50	0,50	0,50				
	Alternative method			Reference method			
Levels	Low	Medium	High	Low	Medium	High	
Target value	1,583	2,642	3,659				
Number of participants (K)	14	14	14	14	14	14	
Average for alternative method	1,656	2,675	3,720	1,583	2,642	3,659	
Repeatability standard deviation (sr)	0,096	0,076	0,068	0,088	0,057	0,060	
Between-labs standard deviation (sL)	0,076	0,057	0,050	0,071	0,047	0,076	
Reproducibility standard deviation (sR)	0,122	0,095	0,085	0,114	0,074	0,097	
Corrected number of dof	22,975	23,274	23,414	22,785	22,635	18,883	
Coverage factor	1,352	1,351	1,350				
Interpolated Student t	1,320	1,319	1,319				
Tolerance interval standard deviation	0,1253	0,0972	0,0868				
Lower TI limit	1,491	2,546	3,606				
Upper TI limit	1,821	2,803	3,835				
Bias	0,073	0,032	0,062				
Relative Lower TI limit (beta = 80%)	-0,093	-0,096	-0,053				
Relative Upper TI limit (beta = 80%)	0,238	0,160	0,176				
Lower Acceptability Limit	-0,50	-0,50	-0,50				
Upper Acceptability Limit	0,50	0,50	0,50				
New acceptability limits may be based on reference method pooled variance							
Pooled repro standard dev of reference	0,096						

These values are collected in a graphical representation together with the acceptability limits (AL). This representation is given **Figure 10**.

Figure 10 - Accuracy profile



It is observed that for all the levels, the tolerance interval limits of the alternative method are within the acceptable limits of ± 0.5 log.

The results obtained with the alternative method are not statistically different than those obtained with the reference method.

3.2.4.3 Conclusion

The alternative method is equivalent to the reference method.

4 CONCLUSION

The observed data and interpretation confirm the performances of the alternative method:

- **187 samples were tested in the relative trueness study, providing 132 interpretable results by both methods** which clearly satisfied the required criteria for quantitative method comparison per ISO 16140-2.
- **The observed profiles are comprised within the AL actually set at ± 0.5 Log CFU/g in the EN ISO 16140-2:2016.**
- **The inclusivity and exclusivity testing shows satisfying results.**
- **The quality assurance parameters were verified, (targeted levels, strain stability, logistic conditions, analyses), confirming that the inter-laboratory study was conducted in appropriate conditions.**
- **The data interpretations were done according to the EN ISO 16140-2:2016. For the three contamination levels, the alternative method is accepted as equivalent to the reference method.**

Based on the results obtained for the method comparison study and the inter-laboratory study, the alternative method is considered equivalent to the reference method.

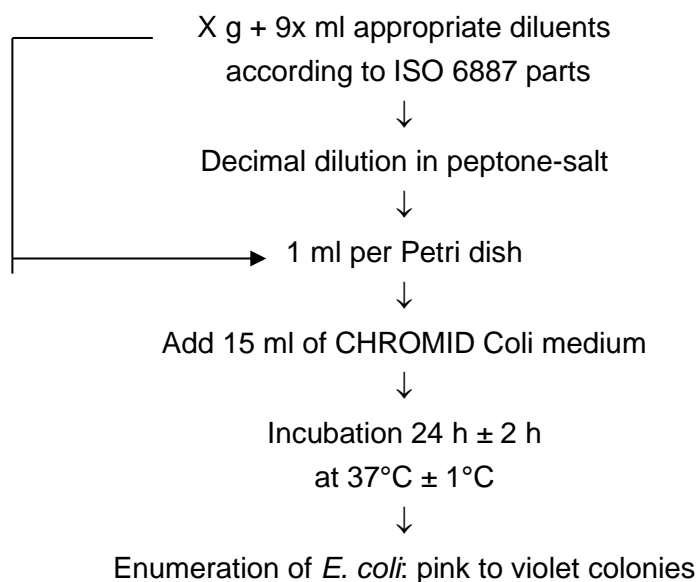
Quimper, 03 November 2022

Maryse RANNOU
Project Manager
Validation of Alternative methods
Food Safety & Quality

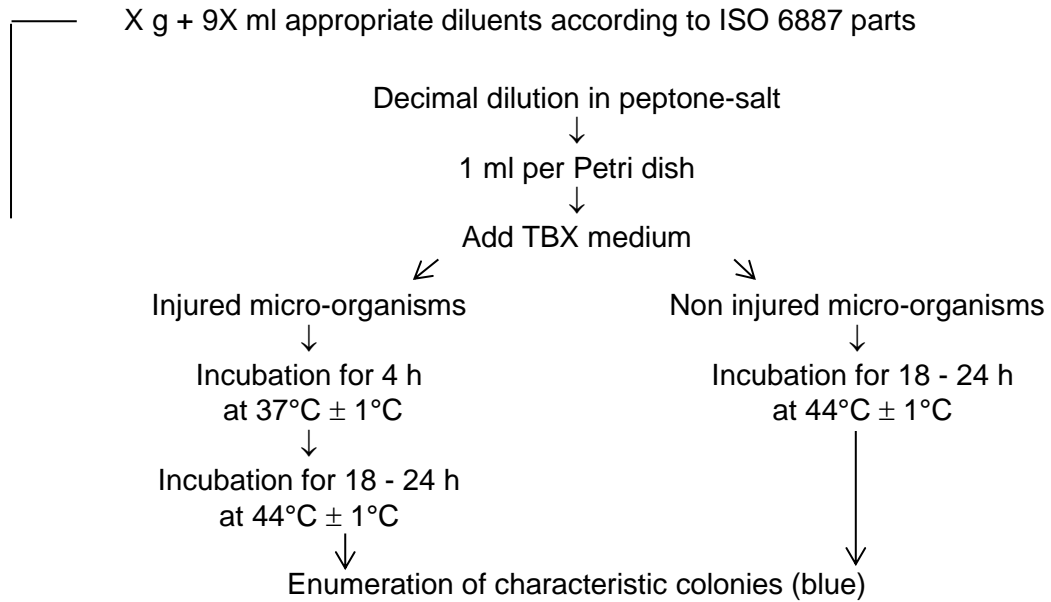


I hereby attest to the validation of the verification of the conformity of the report (opinion and interpretation).

**Appendix 1 – Flow diagram of the alternative method:
CHROMID Coli (COLI ID-F) for the enumeration of
 β -glucuronidase-positive *Escherichia coli* at 37°C**



**Appendix 2 – Flow diagram of the reference method:
 EN ISO 16649-2 (July 2001): Microbiology of food and animal feeding stuffs:
 Horizontal method for the enumeration of β glucuronidase positive *Escherichia coli* – Part 2: colony-count technique at 44°C using 5-bromo-4-chloro-3 indolyl β -D-glucuronate**



Appendix 3 – Artificial contaminations of samples

Analysis date	Sample N°	Product (French name)	Product	Artificial contamination			Category	Type
				Strain	Origin	Injury		
2011	2186	Escalopes extra-fines de dinde	Raw turkey meat	<i>Escherichia coli</i> 96	Turkey meat	6 days à 4°C	1	a
2011	2152	Saucisses fumées bio	Smoked sausage	<i>Escherichia coli</i> 21	Delicatessen	Heat treatment 10 min 56°C	1	b
2011	2153	Saucisses de Montbéliard fumées au bois de hêtre	Smoked sausage	<i>Escherichia coli</i> 21	Delicatessen	Heat treatment 10 min 56°C	1	b
2011	2185	Saucisses natures	Sausage	<i>Escherichia coli</i> 6	Sausage	6 days à 4°C	1	b
2011	2369	Jambon cuit à la broche	Cooked ham	<i>Escherichia coli</i> 101	Pork meat	Heat treatment 10 min 56°C	1	b
2011	2470	Saucisson à l'ail	Sausage with garlic	<i>Escherichia coli</i> 1	Pork meat	Heat treatment 10 min 56°C	1	b
2011	2472	Chorizo	Chorizo	<i>Escherichia coli</i> 1	Pork meat	Heat treatment 10 min 56°C	1	b
2011	2473	Saucisson à l'ail	Sausage with garlic	<i>Escherichia coli</i> 1	Pork meat	Heat treatment 10 min 56°C	1	b
2011	2475	Chiffonnade de jambon sec	Ham	<i>Escherichia coli</i> 1	Pork meat	7 days 4°C	1	b
2011	2476	Bacon tranches épaisses	Bacon	<i>Escherichia coli</i> 3A	Pork meat	7 days 4°C	1	b
2011	2478	Poitrine fumée tranches fines	Smoked delicatessen	<i>Escherichia coli</i> 1	Pork meat	7 days 4°C	1	b
2011	2479	Jambon cru	Ham	<i>Escherichia coli</i> 21	Pork meat	7 days 4°C	1	b
2011	2059	Chili con carné	RTRH beef meat	<i>Escherichia coli</i> 144	Paella	Heat treatment 15 min 56°C	1	c
2011	2065	Nems au porc	RTRH pork meat	<i>Escherichia coli</i> 108	Ready to reheat meal	Heat treatment 10 min 56°C	1	c
2011	2066	Ravioli chinois au porc	RTRH pork meat	<i>Escherichia coli</i> 108	Ready to reheat meal	Heat treatment 15 min 56°C	1	c
2011	2151	Sandwich jambon œuf crudités	Sandwich with ham egg and vegetables	<i>Escherichia coli</i> Ad 222	Egg product	4°C 1 day	1	c
2011	2184	Sandwich poulet œuf	Sandwich with chicken	<i>Escherichia coli</i> 142	Egg product	6 days à 4°C	1	c
2011	2368	Sandwich jambon œuf tomate	Sandwich with ham	<i>Escherichia coli</i> 101	Pork meat	Heat treatment 10 min 56°C	1	c
2011	2480	Sandwich poulet rôti mayonnaise	Sandwich with chicken	<i>Escherichia coli</i> Ad 218	Poultry	7 days 4°C	1	c
2011	2481	Sandwich poulet rôti mayonnaise	Sandwich with chicken	<i>Escherichia coli</i> Ad 218	Poultry	7 days 4°C	1	c
2011	2482	Farfalles poulet rôti tomates	RTE salad with chicken	<i>Escherichia coli</i> 108	Ready to reheat meal	Heat treatment 10 min 56°C	1	c
2018	6717	Riz au lait saveur vanille	Dessert (rice pudding)	<i>Escherichia coli</i> 14	Dairy product	Seeding 48 h 3 ± 2°C	2	b

Analysis date	Sample N°	Product (French name)	Product	Artificial contamination			Category	Type
				Strain	Origin	Injury		
2018	6718	Riz au lait à la vanille	Dessert (rice pudding)	<i>Escherichia coli</i> 14	Dairy product	Seeding 48 h 3 ± 2°C	2	b
2018	6719	Panna cotta coulis de framboise	Panna cotta	<i>Escherichia coli</i> 15	Dairy product	Seeding 48 h 3 ± 2°C	2	b
2018	6720	Crème fraiche entière	Cream	<i>Escherichia coli</i> 15	Dairy product	Seeding 48 h 3 ± 2°C	2	b
2018	6297	Lait en poudre écrémé	Skimmed milk powder	<i>Escherichia coli</i> Ad1816	Dairy product	Seeding lyophilized strain 2 weeks at room temperature	2	c
2018	6298	Lait en poudre écrémé	Skimmed milk powder	<i>Escherichia coli</i> 118	Dairy product	Seeding lyophilized strain 2 weeks at room temperature	2	c
2018	6299	Lait en poudre entier	Whole milk powder	<i>Escherichia coli</i> Ad1816	Dairy product	Seeding lyophilized strain 2 weeks at room temperature	2	c
2018	6300	Lait en poudre entier	Whole milk powder	<i>Escherichia coli</i> 118	Dairy product	Seeding lyophilized strain 2 weeks at room temperature	2	c
2018	6301	Lait en poudre écrémé	Skimmed milk powder	<i>Escherichia coli</i> 118	Dairy product	Seeding lyophilized strain 2 weeks at room temperature	2	c
2018	6734	Poudre de lait demi écrémé	Semi skimmed milk powder	<i>Escherichia coli</i> 94	Dairy product	Spiking HT 56°C 8 min	2	c
2018	6735	Poudre de lait écrémé	Skimmed milk powder	<i>Escherichia coli</i> 94	Dairy product	Spiking HT 56°C 8 min	2	c
2018	6736	Poudre de lait demi écrémé	Half skimmed milk powder	<i>Escherichia coli</i> 94	Dairy product	Spiking HT 56°C 8 min	2	c
2018	6737	Poudre de lait calcium	Milk powder	<i>Escherichia coli</i> 97	Dairy product	Spiking HT 56°C 8 min	2	c
2018	6738	Poudre de lait écrémé	Skimmed milk powder	<i>Escherichia coli</i> 97	Dairy product	Spiking HT 56°C 8 min	2	c
2018	6739	Poudre de lait écrémé	Skimmed milk powder	<i>Escherichia coli</i> 97	Dairy product	Spiking HT 56°C 8 min	2	c
2018	6723	Filet de julienne	Raw fish	<i>Escherichia coli</i> Ad1384	Sea water	Seeding 48 h 3 ± 2°C	3	a
2018	6724	Filet de Merlan	Raw fish	<i>Escherichia coli</i> Ad1384	Sea water	Seeding 48 h 3 ± 2°C	3	a
2018	6725	Bar	Raw fish	<i>Escherichia coli</i> Ad1384	Sea water	Seeding 48 h 3 ± 2°C	3	a
2018	6726	Lamelles d'encornet géant	Raw seafood	<i>Escherichia coli</i> Ad1385	Sea water	Seeding 48 h 3 ± 2°C	3	a
2018	6727	Encornet criée	Raw seafood	<i>Escherichia coli</i> Ad1385	Sea water	Seeding 48 h 3 ± 2°C	3	a
2018	6728	Crevettes crues décortiquées	Raw shrimps	<i>Escherichia coli</i> Ad1385	Sea water	Seeding 48 h 3 ± 2°C	3	a
2018	6729	Noix de saint jacques	Scallops	<i>Escherichia coli</i> Ad1385	Sea water	Seeding 48 h 3 ± 2°C	3	a
2018	6291	Anchois marinés	Marinated anchovy	<i>Escherichia coli</i> Ad228	Fish product	Seeding 48 h 3 ± 2°C	3	b

Analysis date	Sample N°	Product (French name)	Product	Artificial contamination			Category	Type
				Strain	Origin	Injury		
2018	6294	Anchois marinés à l'orientale	Marinated anchovy	<i>Escherichia coli</i> Ad228	Fish product	Seeding 48 h 3 ± 2°C	3	b
2011	2150	Salade de pâtes saumon mayonnaise	RTE salad with salmon	<i>Escherichia coli</i> Ad 222	Egg product	Heat treatment 10 min 56°C	3	c
2018	6292	Bâtonnet gourmand	RTE surimi	<i>Escherichia coli</i> Ad228	Fish product	Seeding 48 h 3 ± 2°C	3	c
2018	6293	Bâtonnet gourmand	RTE surimi	<i>Escherichia coli</i> 144	RTRH fish product	Seeding 48 h 3 ± 2°C	3	c
2018	6295	Bâtonnets de surimi	RTE surimi	<i>Escherichia coli</i> 144	RTRH fish product	Seeding 48 h 3 ± 2°C	3	c
2018	6296	Breizh surimi	RTE surimi	<i>Escherichia coli</i> 144	RTRH fish product	Seeding 48 h 3 ± 2°C	3	c
2011	2120	Ratatouille surgelée	Frozen vegetables mix	<i>Escherichia coli</i> 19	Grated carrots	-20°C 8 days	4	b
2011	2058	Ratatouille	RTRH vegetables mix	<i>Escherichia coli</i> 19	Grated carrots	Heat treatment 15 min 56°C	4	c
2011	2060	Carottes en lamelles cuites	RTRH carrots	<i>Escherichia coli</i> 144	Paella	Heat treatment 10 min 56°C	4	c
2011	2121	Salade boulghour légumes du soleil	RTE salad with vegetables	<i>Escherichia coli</i> 19	Grated carrots	4°C 8 days	4	c
2011	2183	Quiche aux poireaux surgelée	RTRH leeks	<i>Escherichia coli</i> 142	Egg product	6 days à -20°C	4	c
2011	2363	Salade carotte cèleri	RTE salad with carrots and celery	<i>Escherichia coli</i> 19	Grated carrots	7 days 4°C	4	c
2011	2364	Salade de céleri rémoulade	RTE salad with celery	<i>Escherichia coli</i> 144	Paella	7 days 4°C	4	c
2011	2365	Macédoine de légumes	RTE vegetables mix	<i>Escherichia coli</i> 144	Paella	Heat treatment 10 min 56°C	4	c
2011	2366	Macédoine de légumes	RTE vegetables mix	<i>Escherichia coli</i> 142	Egg product	Heat treatment 10 min 56°C	4	c
2018	6730	Mayonnaise fraiche	Mayonnaise	<i>Escherichia coli</i> 143	Egg product	Seeding 48 h 3 ± 2°C	5	b
2018	6731	Tortilla espagnole aux oignons	Tortilla with onions	<i>Escherichia coli</i> 143	Egg product	Seeding 48 h 3 ± 2°C	5	b
2011	2062	Tartelette cocktail	Pastry	<i>Escherichia coli</i> Ad 222	Egg product	Heat treatment 15 min 56°C	5	c
2011	2063	Tartelette cocktail	Pastry	<i>Escherichia coli</i> 142	Egg product	Heat treatment 10 min 56°C	5	c
2011	2064	Tartelette fraise	Pastry	<i>Escherichia coli</i> Ad 222	Egg product	Heat treatment 10 min 56°C	5	c
2018	6732	Eclair au chocolat	Pastry	<i>Escherichia coli</i> 143	Egg product	Seeding 48 h 3 ± 2°C	5	c
2018	6733	Millefeuille	Pastry	<i>Escherichia coli</i> 143	Egg product	Seeding 48 h 3 ± 2°C	5	c

Appendix 4 - Relative trueness study: raw data

MEAT AND MEAT PRODUCTS																							
Analysis date	Sample N°	Product (French name)	Product	Reference method: ISO 16649-2*										CHROMID® (COLI ID-F) for the enumeration of β-glucuronidase-positive <i>Escherichia coli</i> at 37°C							Category	Type	
				Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Result	Dilution	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2			Result
					CFU/plate a	CFU/plate b	CFU/plate a	CFU/plate b	CFU/g (rounded)	CFU/g (rounded)	log CFU/g	log CFU/g	log CFU/g		CFU/plate	CFU/plate	CFU/g rounded	CFU/g rounded	log CFU/g	log CFU/g			log CFU/g
2006	562	Sauté de veau	Raw veal meat	100	0	0	0	0	<100	<100	<2,00	<2,00	<2,00	10	0	0	<10	<10		<1,00	<1,00	1	a
				1000	0	0	0	0						100									
2006	563	Paupiette de veau	Raw veal meat	10	1	1	1	1	10	10	1,00	1,00	1,00*	10	0	0	<10	<10	<1,00	<1,00	<1,00	1	a
				100	0	0	0	0						100									
2006	564	Paupiette de veau	Raw veal meat	10	0	0	0	0	<10	<10	<1,00	<1,00	<1,00	10	1	0	10	<10	1,00	<1,00	1,00*	1	a
				100	0	0	0	0						100	1	0							
2006	565	Pointes (viande)	Raw meat	10	1	3	2	3	20	25	1,30	1,40	1,30*	10	ND	ND	ND	ND	ND	ND	ND	1	a
				100	0	0	0	1						100									
2006	566	Viande blanche	Raw chicken meat	10	3	7	2	3	50	45	1,70	1,65	1,70	10	ND	ND	ND	ND	ND	ND	ND	1	a
				100	0	2	1	1					Ne	100									
2006	589	Tartare	Tartar	10	1	3	2	1	20	15	1,30	1,18	1,30*	10	4	1	40	10	1,60	1,00	1,60	1	c
				100	0	0	0	0						100	0	0	Ne	Ne					
2006	590	Saucisse	Sausage	10	3	3	8	1	30	45	1,48	1,65	1,65	10	1	1	10	10	1,00	1,00	1,00*	1	b
				100	0	0	0	0					Ne	100	0	0	Ne	Ne					
2006	591	Saucisse	Sausage	10	6	4	7	1	50	40	1,70	1,60	1,70	10	1	2	10	20	1,00	1,30	1,00*	1	b
				100	0	0	0	0						100	0	0	Ne	Ne					
2006	592	Chair à saucisse	Sausage	10	3	4	2	1	35	15	1,54	1,18	1,54*	10	1	2	10	20	1,00	1,30	1,00*	1	b
				100	0	0	0	0						100	0	0	Ne	Ne					
2006	594	Sauté de porc	Raw pork meat	10	3	3	3	5	30	40	1,48	1,60	1,60*	10	3	5	30	50	1,48	1,70	1,70	1	a
				100	0	0	0	0						100	0	0	Ne	Ne					
2006	595	Porc à l'ananas	RTRH pork meat	10	2	0	3	1	10	20	1,00	1,30	1,00*	10	2	0	20	<10	1,30	<1,00	1,30*	1	c
				100	0	0	0	0						100	0	0	Ne						
2006	596	Viande blanche	Chicken meat	10	13	11	6	11	120	85	2,08	1,93	2,08	10	5	8	50	80	1,70	1,90	1,70	1	a
				100	0	2	1	1						100	1	2	Ne	Ne					
2006	628	Viande de porc	Raw pork meat	10	4	4	3	3	40	30	1,60	1,48	1,60	10	7	2	70	20	1,85	1,30	1,85	1	a
				100	0	0	0	0					Ne	100	0	0	Ne	Ne					
2006	639	Escalope de dinde	Raw turkey meat	10	93	87	99	78	900	890	2,95	2,95	2,95	100	9	8	900	800	2,95	2,90	2,95	1	a
				100	9	9	7	11						1000	1	1							
2006	640	Escalope de poulet	Raw chicken meat	10	1	0	0	0	5	<10	0,70	<1,00	0,70*	10	1	2	10	20	1,00	1,30	1,00*	1	a
				100	0	0	0	0						100	0	0							
2006	1287	Aiguillette de poulet rôti	RTRH chicken meat	1000	10	13	16	12	12000	14000	4,08	4,15	4,08	1000	13	15	13000	15000	4,11	4,18	4,11	1	c
				10000	2	4	1	2						10000	1	0							
2006	1288	Pâté de foie de porc	Delicatessen terrine	1000	8	7	13	16	8000	15000	3,90	4,18	3,90	1000	7	6	7000	6000	3,85	3,78	3,85	1	b
				10000	0	2	1	2						10000	1	1							
2006	1289	Bœuf aux carottes	RTRH beef meat	1000	14	9	12	13	12000	13000	4,08	4,11	4,08	1000	9	12	9000	12000	3,95	4,08	3,95	1	c
				10000	0	0	1	0						10000	0	2							
2006	1389	Saucisse	Sausage	10000	103	128	108	117	1200000	1200000	6,08	6,08	6,08	10000	97	98	950000	970000	5,98	5,99	5,98	1	b
				100000	10	14	21	12						100000	8	9							
2006	1717	Lardons	Bacon	100	43	36	43	45	4000	4400	3,60	3,64	3,60	100	46	50	4500	4600	3,65	3,66	3,65	1	b
				1000	3	6	2	6						1000	3	1							
2011	1866	Brochette de dinde	Raw turkey meat	10	54				560		2,75		2,75	10	36		360		2,56		2,56	1	a
				100	7									100	3								

* Analyses performed according to the COFRAC accreditation

MEAT AND MEAT PRODUCTS

Analysis date	Sample N°	Product (French name)	Product	Reference method: ISO 16649-2*										CHROMID® (COLI ID-F) for the enumeration of β -glucuronidase-positive <i>Escherichia coli</i> at 37°C							Category	Type		
				Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Result	Dilution	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2			Result	
					CFU/plate a	CFU/plate b	CFU/plate a	CFU/plate b	CFU/g (rounded)	CFU/g (rounded)	log CFU/g	log CFU/g	log CFU/g		CFU/plate	CFU/plate	CFU/g rounded	CFU/g rounded	log CFU/g	log CFU/g			log CFU/g	
2011	1867	Brochette de dinde colombo	Raw turkey meat	10	47					510		2,71		2,71	10	46		450		2,65		2,65	1	a
				100	9										100	3								
2011	1868	Viande d'épaule de dinde saumurée	Seasoned turkey meat	100	60					5900		3,77		3,77	100	39		3800		3,58		3,58	1	b
				1000	5										1000	3								
2011	1869	Chipolatas	Sausage	10	99					990		3,00		3,00	10	74		760		2,88		2,88	1	b
				100	10										100	9								
2011	1870	Chipolatas	Sausage	10	81					800		2,90		2,90	10	75		730		2,86		2,86	1	b
				100	7										100	5								
2011	1871	Saucisse fumée	Smoked sausage	10	50					490		2,69		2,69	10	29		270		2,43		2,43	1	b
				100	4										100	1								
2011	1911	Paupiette bardée	Raw meat	10	114					1100		3,04		3,04	10	58		560		2,75		2,75	1	a
				100	5										100	3								
2011	1912	Paupiette bardée	Raw meat	10	93					910		2,96		2,96	10	61		590		2,77		2,77	1	a
				100	7										100	4								
2011	1913	Viande d'échine de dinde broyée	Raw turkey meat	100	57					5400		3,73		3,73	10	28		280		2,45		2,45	1	a
				1000	2										100	3								
2011	1915	Carcasse de dinde	Raw turkey meat	1000	19					17000		4,23		4,23	100	65		6500		3,81		3,81	1	a
				10000	0										1000	6								
2011	1916	Viande rouge de dinde dénervée	Raw turkey meat	10	135					1400		3,15		3,15	10	87		830		2,92		2,92	1	a
				100	14										100	4								
2011	1918	Cornet de porc	Raw pork meat	100	100					10000		4,00		4,00	100	66		6500		3,81		3,81	1	a
				1000	10										1000	5								
2011	1919	PV 3 mm Porc	Raw pork meat	1000	52					53000		4,72		4,72	1000	40		39000		4,59		4,59	1	a
				10000	6										10000	3								
2011	2059	Chili con carné	RTRH beef meat	10	>150					2400		3,38 N'		3,38	10	>150		2000 N'		3,30 N'		3,30 N'	1	c
				100	24										100	20								
2011	2065	Nems au porc	RTRH pork meat	100	71					7000		3,85		3,85	100	27		2500		3,40		3,40	1	c
				1000	6										1000	1								
2011	2066	Ravioli chinois au porc	RTRH pork meat	10	104					1100		3,04		3,04	10	10		100		2,00		2,00	1	c
				100	16										100	1								
2011	2151	Sandwich jambon œuf crudités	Sandwich with ham egg and vegetables	100	50					5100		3,71		3,71	100	27		2600		3,41		3,41	1	c
				1000	6										1000	2								
2011	2152	Saucisses fumées bio	Smoked sausage	10	4					40		1,60 Ne		1,60 Ne	10	5		50		1,70		1,70 Ne	1	b
				100	0										100	0								
2011	2153	Saucisses de Montbéliard fumées au bois de hêtre	Smoked sausage	100	43					4200		3,62		3,62	100	45		4300		3,63		3,63	1	b
				1000	3										1000	2								
2011	2184	Sandwich poulet œuf	Sandwich with chicken	100	50					4700		3,67		3,67	100	35		3300		3,52		3,52	1	c
				1000	2										1000	1								
2011	2185	Saucisses natures	Sausage	10	13					130		2,11		2,11	10	6		60		1,78 Ne		1,78 Ne	1	b
				100	1										100	0								
2011	2186	Escalopes extra-fines de dinde	Raw turkey meat	10	17					160		2,20		2,20	10	20		200		2,30		2,30	1	a
				100	1										100	2								
2011	2368	Sandwich jambon œuf tomate	Sandwich with ham	10	>150					4500		3,65 N'		3,65 N'	10	74		730		2,86		2,86	1	c
				100	45										100	6								
2011	2369	Jambon cuit à la broche	Cooked ham	10	>150					2000		3,30 N'		3,30 N'	10	6		60		1,78 Ne		1,78 Ne	1	b
				100	20										100	1								

MEAT AND MEAT PRODUCTS

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				Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Result	Dilution	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2			Result
					CFU/plate a	CFU/plate b	CFU/plate a	CFU/plate b	CFU/g (rounded)	CFU/g (rounded)	log CFU/g	log CFU/g	log CFU/g		CFU/plate	CFU/plate	CFU/g rounded	CFU/g rounded	log CFU/g	log CFU/g			log CFU/g
2011	2470	Saucisson à l'ail	Sausage with garlic	10	82				820		2,91		2,91	10	53		520		2,72		2,72	1	b
				100	8									100	4								
2011	2472	Chorizo	Chorizo	100	38				3700		3,57		3,57	10	107		1100		3,04		3,04	1	b
				1000	3									100	16								
2011	2473	Saucisson à l'ail	Sausage with garlic	100	66				6700		3,83		3,83	100	51		5800		3,76		3,76	1	b
				1000	8									1000	13								
2011	2475	Chiffonnade de jambon sec	Ham	10	7				70		1,85		1,85	10	5		50		1,70		1,70	1	b
				100	0						Ne		Ne	100	0		Ne		Ne		Ne		
2011	2476	Bacon tranches épaisses	Bacon	10	5				50		1,70		1,70	10	9		90		1,95		1,95	1	b
				100	1						Ne		Ne	100	0		Ne		Ne		Ne		
2011	2478	Poitrine fumée tranches fines	Smoked delicatessen	100	>150				21000		4,32		4,32	100	>150		17000		4,23		4,23	1	b
				1000	21						N'		N"	1000	17		N'		N'		N'		
2011	2479	Jambon cru	Ham	1000	62				62000		4,79		4,79	1000	12		16000		4,20		4,20	1	b
				10000	6									10000	6								
2011	2480	Sandwich poulet rôti mayonnaise	Sandwich with chicken	10	20				190		2,28		2,28	10	10		120		2,08		2,08	1	c
				100	1									100	3								
2011	2481	Sandwich poulet rôti mayonnaise	Sandwich with chicken	10	12				130		2,11		2,11	10	12		140		2,15		2,15	1	c
				100	2									100	3								
2011	2482	Farfalles poulet rôti tomates	RTE salad with chicken	10	96				940		2,97		2,97	10	14		160		2,20		2,20	1	c
				100	7									100	3								

MILK AND DAIRY PRODUCTS

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				Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Result	Dilution	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2			Result
					CFU/plate a	CFU/plate b	CFU/plate a	CFU/plate b	CFU/g (rounded)	CFU/g (rounded)	log CFU/g	log CFU/g	log CFU/g		CFU/plate	CFU/plate	CFU/g rounded	CFU/g rounded	log CFU/g	log CFU/g			log CFU/g
2006	725	Lait cru	Raw milk	1	38	29	19	16	35	19	1,54	1,28	1,54	1	43	21	44	23	1,64	1,36	1,64	2	a
				10	5	5	3	3						10	5	4	44	23	1,64	1,36	1,64	2	a
2006	726	Rocamadour	Cheese	10	0	0	0	0	<10	<10	<1,00	<1,00	<1,00	10	0	0	<10	<10	<1,00	<1,00	<1,00	2	b
				100	0	0	0	0						100	0	0	<10	<10	<1,00	<1,00	<1,00	<1,00	<1,00
2006	824	Lait cru	Raw milk	1	>150	>150	>150	>150	1500	1300	3,18	3,11	3,18	1	>150	>150	1400	1400	3,15	3,15	3,15	2	a
				10	145	152	113	142						10	135	138	1400	1400	3,15	3,15	3,15	N'	2
2006	842	Lait cru	Raw milk	10	>150	>150	>150	>150	2400	1700	3,38	3,23	3,38	100	10	22	1000	2000	3,00	3,30	3,00	2	a
				100	19	29	14	20						1000	2	0	1000	2000	3,00	3,30	3,00	N'	2
2006	847	Crottin de chèvre	Cheese	100	85	86	68	76	8600	7400	3,93	3,87	3,93	100	93	80	9800	7800	3,99	3,89	3,99	2	b
				1000	11	7	6	13						1000	14	6	9800	7800	3,99	3,89	3,99	2	b
2006	1290	Crème fraiche	Cream	10	6	11	18	9	85	130	1,93	2,11	1,93	10	13	16	130	160	2,11	2,20	2,11	2	b
				100	2	1	1	0						100	1	2	130	160	2,11	2,20	2,11	Ne	2
2006	1478	Lait	Milk	100	56	44	40	50	5000	4600	3,70	3,66	3,70	100	31	27	3100	2500	3,49	3,40	3,49	2	a
				1000	5	6	3	9						1000	3	1	3100	2500	3,49	3,40	3,49	2	a
2006	1479	Lait	Milk	100	32	35	37	33	3400	3600	3,53	3,56	3,53	100	32	30	3500	2900	3,54	3,46	3,54	2	a
				1000	3	4	2	7						1000	6	2	3500	2900	3,54	3,46	3,54	2	a
2018	6167	Lait cru	Raw milk	10	8				80		1,90		1,90	10	12		120		2,08		2,08	2	a
				100	0									100	1		120		2,08		2,08	Ne	2
2018	6168	Lait cru	Raw milk	10	15				140		2,15		2,15	10	11		110		2,04		2,04	2	a
				100	0									100	1		110		2,04		2,04	2	a
2018	6283	Fromage Roquefort au Lait cru	Raw milk cheese	10	0				<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	2	b
				100	0									100	0		<10		<1,00		<1,00	2	b
2018	6284	Fromage Selles sur Cher au lait cru	Raw milk cheese	10	0				<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	2	b
				100	0									100	0		<10		<1,00		<1,00	2	b
2018	6404	Crème fraiche	Cream	1000	53				53000		4,72		4,72	1000	65		64000		4,81		4,81	2	b
				10000	0									10000	5		64000		4,81		4,81	2	b
2018	6405	Saint Nectaire fermier	Cheese	10	0				<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	2	b
				100	0									100	0		<10		<1,00		<1,00	2	b
2018	6297	Lait en poudre écrémé	Skimmed milk powder	10	0				<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	2	c
				100	0									100	0		<10		<1,00		<1,00	2	c
2018	6298	Lait en poudre écrémé	Skimmed milk powder	10	0				<10		<1,00		<1,00	10	2		20		1,30		1,30*	2	c
				100	0									100	0		20		1,30		1,30*	2	c
2018	6299	Lait en poudre entier	Whole milk powder	10	0				<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	2	c
				100	0									100	0		<10		<1,00		<1,00	2	c
2018	6300	Lait en poudre entier	Whole milk powder	10	0				<10		<1,00		<1,00	10	68		700		2,85		2,85	2	c
				100	0									100	9		700		2,85		2,85	2	c
2018	6301	Lait en poudre écrémé	Skimmed milk powder	10	4				40		1,60	Ne	1,60	100	18		1700		3,23		3,23	2	c
				100	0									1000	1		1700		3,23		3,23	2	c
2018	6717	Riz au lait saveur vanille	Dessert (rice pudding)	10	56				580		2,76		2,76	10	53		490		2,69		2,69	2	b
				100	8									100	1		490		2,69		2,69	2	b
2018	6718	Riz au lait à la vanille	Dessert (rice pudding)	100	38				3900		3,59		3,59	100	41		3800		3,58		3,58	2	b
				1000	5									1000	1		3800		3,58		3,58	2	b
2018	6719	Panna cotta coulis de framboise	Panna cotta	1000	37				36000		4,56		4,56	1000	26		27000		4,43		4,43	2	b
				10000	3									10000	4		27000		4,43		4,43	2	b

* Analyses performed according to the COFRAC accreditation

MILK AND DAIRY PRODUCTS

Analysis date	Sample N°	Product (French name)	Product	Reference method: ISO 16649-2*										CHROMID® (COLI ID-F) for the enumeration of β-glucuronidase-positive <i>Escherichia coli</i> at 37°C							Category	Type		
				Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Result	Dilution	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2			Result	
					CFU/plate a	CFU/plate b	CFU/plate a	CFU/plate b	CFU/g (rounded)	CFU/g (rounded)	log CFU/g	log CFU/g	log CFU/g		CFU/plate	CFU/plate	CFU/g rounded	CFU/g rounded	log CFU/g	log CFU/g			log CFU/g	
2018	6720	Crème fraiche entière	Cream	10000	25					260000		5,41		5,41	10000	38		370000		5,57		5,57	2	b
				100000	3										100000	3								
2018	6734	Poudre de lait demi écrémé	Semi skimmed milk powder	10	5					50		1,70		1,70	10	4		40		1,60		1,60	2	c
				100	0							Ne		Ne	100	0				Ne		Ne		
2018	6735	Poudre de lait écrémé	Skimmed milk powder	10	23					230		2,36		2,36	10	23		260		2,41		2,41	2	c
				100	2										100	5								
2018	6736	Poudre de lait demi écrémé	Half skimmed milk powder	100	8					800		2,90		2,90	100	37		3500		3,54		3,54	2	c
				1000	1							Ne		Ne	1000	1								
2018	6737	Poudre de lait calcium	Milk powder	100	21					2000		3,30		3,30	100	54		5200		3,72		3,72	2	c
				1000	1										1000	3								
2018	6738	Poudre de lait écrémé	Skimmed milk powder	1000	1					910		2,96		2,96*	1000	0		<1000		<3,00		<3,00	2	c
				10000	0										10000	0								
2018	6739	Poudre de lait écrémé	Skimmed milk powder	1000	0					<1000		<3,0		<3,0	1000	2		2000		3,30*		3,30*	2	c
				10000	0										10000	0								

SEAFOOD PRODUCTS																							
Analysis date	Sample N°	Product (French name)	Product	Reference method: ISO 16649-2*										CHROMID® (COLI ID-F) for the enumeration of β-glucuronidase-positive <i>Escherichia coli</i> at 37°C							Category	Type	
				Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Result	Dilution	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2			Result
					CFU/plate a	CFU/plate b	CFU/plate a	CFU/plate b	CFU/g (rounded)	CFU/g (rounded)	log CFU/g	log CFU/g	log CFU/g		CFU/plate	CFU/plate	CFU/g rounded	CFU/g rounded	log CFU/g	log CFU/g			log CFU/g
2006	1342	Filet de loup de mer	Raw fish	100	7	11	7	7	900	700	2,95	2,85	2,95	100	4	5	400	500	2,60	2,70	2,60	3	a
				1000	1	0	1	0						Ne	1000	0							
2006	1343	Filet de dorade	Raw fish	100	8	9	8	4	850	600	2,93	2,78	2,93	100	8	7	800	700	2,90	2,85	2,90	3	a
				1000	0	1	0	0						Ne	1000	0							
2006	1344	Filet Haddock fumé	Smoked fish	100	5	4	5	13	450	900	2,65	2,95	2,65	100	5	6	500	600	2,70	2,78	2,70	3	b
				1000	1	0	2	4						Ne	1000	0							
2006	1345	Saumon fumé	Smoked salmon	100	7	6	14	10	650	1200	2,81	3,08	2,81	100	8	5	800	500	2,90	2,70	2,90	3	b
				1000	0	1	1	1						Ne	1000	0							
2006	1383	Saumon fumé de Norvège	Smoked salmon	10000	37	42	53	46	390000	500000	5,59	5,70	5,59	10000	46	51	510000	500000	5,71	5,70	5,71	3	b
				100000	1	5	6	4						100000	10	4							
2006	1384	Saumon fumé d'Ecosse	Smoked salmon	10000	35	23	31	34	280000	320000	5,45	5,51	5,45	10000	20	22	220000	200000	5,34	5,30	5,34	3	b
				100000	2	1	2	3						100000	4	0							
2006	1385	Saumon Atlantique	Raw salmon	1000	79	55	91	95	70000	91000	4,85	4,96	4,85	1000	57	77	54000	75000	4,73	4,88	4,73	3	a
				10000	8	13	10	5						10000	2	6							
2006	1386	Saumon fumé au bois de hêtre	Smoked salmon	1000	30	29	39	36	29000	38000	4,46	4,58	4,46	1000	20	19	22000	21000	4,34	4,32	4,34	3	b
				10000	3	1	5	4						10000	4	4							
2006	1387	Truite de mer	Raw trout fish filet	1000	38	35	59	46	38000	50000	4,58	4,70	4,58	1000	37	38	37000	37000	4,57	4,57	4,57	3	a
				10000	4	6	3	3						10000	4	3							
2006	1388	Saumon fumé d'Irlande	Smoked salmon	10000	41	36	44	59	400000	510000	5,60	5,71	5,60	10000	28	32	290000	320000	5,46	5,51	5,46	3	b
				100000	4	7	3	6						100000	4	3							
2011	2150	Salade de pâtes saumon mayonnaise	RTE salad with salmon	10	35				360		2,56		2,56	10	16		150		2,18		2,18	3	c
				100	4									100	0								
2018	6169	Encornet rouge	Raw fish	10	0				<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	3	a
				100	0									100	0								
2018	6170	Acra de morue	RTRH seafood	10	0				<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	3	c
				100	0									100	0								
2018	6279	Poisson plat préparé	RTRH fish	10	0				<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	3	c
				100	0									100	0								
2018	6280	Poisson plat préparé saumon	RTRH salmon	10	0				<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	3	c
				100	0									100	0								
2018	6291	Anchois marinés	Marinated anchovy	10	118				1200		3,08		3,08	10	112		1200		3,08		3,08	3	b
				100	14									100	17								
2018	6292	Bâtonnet gourmand	RTE surimi	100	24				2400		3,38		3,38	100	26		2700		3,43		3,43	3	c
				1000	2									1000	4								
2018	6293	Bâtonnet gourmand	RTE surimi	10	39				380		2,58		2,58	10	15		160		2,20		2,20	3	c
				100	3									100	3								
2018	6294	Anchois marinés à l'orientale	Marinated anchovy	100	34				3300		3,52		3,52	100	42		4000		3,60		3,60	3	b
				1000	2									1000	2								
2018	6295	Bâtonnets de surimi	RTE surimi	100	63				6500		3,81		3,81	100	75		7500		3,88		3,88	3	c
				1000	8									1000	8								
2018	6296	Breizh surimi	RTE surimi	1000	61				57000		4,76		4,76	1000	78		73000		4,86		4,86	3	c
				10000	2									10000	2								
2018	6398	Chair de moules cuites	RTRH mussels	10	1				10		1,00*		1,00*	10	0		<10		<1,00		<1,00	3	c
				100	0									100	0								

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SEAFOOD PRODUCTS																								
Analysis date	Sample N°	Product (French name)	Product	Reference method: ISO 16649-2*										CHROMID® (COLI ID-F) for the enumeration of β-glucuronidase-positive <i>Escherichia coli</i> at 37°C							Category	Type		
				Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Result	Dilution	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2			Result	
					CFU/plate a	CFU/plate b	CFU/plate a	CFU/plate b	CFU/g (rounded)	CFU/g (rounded)	log CFU/g	log CFU/g	log CFU/g		CFU/plate	CFU/plate	CFU/g rounded	CFU/g rounded	log CFU/g	log CFU/g			log CFU/g	
2018	6399	Chair de moules cuites	RTRH mussels	10	0					<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	3	c
				100	0									100	0									
2018	6400	Coquille Saint Jacques	Scallops	10	0					<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	3	c
				100	0									100	0									
2018	6401	Cubes de colin cuits	RTRH fish	10	6					60		1,78		1,78	10	2		20		1,30*		1,30*	3	c
				100	0									100	0									
2018	6402	Homard Européen	Raw lobster	10	0					<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	3	a
				100	0									100	0									
2018	6403	Saumon rose du Pacifique	Raw salmon	10	0					<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	3	a
				100	0									100	0									
2018	6723	Filet de julienne	Raw fish	10	38					400		2,60		2,60	10	47		470		2,67		2,67	3	a
				100	6									100	5									
2018	6724	Filet de Merlan	Raw fish	100	29					2700		3,43		3,43	100	46		4500		3,65		3,65	3	a
				1000	1									1000	3									
2018	6725	Bar	Raw fish	1000	20					19000		4,28		4,28	1000	18		21000		4,32		4,32	3	a
				10000	1									10000	5									
2018	6726	Lamelles d'encornet géant	Raw seafood	100	27					2900		3,46		3,46	100	46		4700		3,67		3,67	3	a
				1000	5									1000	6									
2018	6727	Encornet criée	Raw seafood	1000	46					44000		4,64		4,64	1000	51		49000		4,69		4,69	3	a
				10000	2									10000	3									
2018	6728	Crevettes crues décortiquées	Raw shrimps	1000	5					5000		3,70		3,70	1000	34		35000		4,54		4,54	3	a
				10000	1									10000	4									
2018	6729	Noix de Saint Jacques	Scallops	1000	16					15000		4,18		4,18	1000	76		75000		4,88		4,88	3	a
				10000	1									10000	6									

VEGETABLES																							
Analysis date	Sample N°	Product (French name)	Product	Reference method: ISO 16649-2*										CHROMID® (COLI ID-F) for the enumeration of β-glucuronidase-positive <i>Escherichia coli</i> at 37°C							Category	Type	
				Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Result	Dilution	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2			Result
					CFU/plate a	CFU/plate b	CFU/plate a	CFU/plate b	CFU/g (rounded)	CFU/g (rounded)	log CFU/g	log CFU/g	log CFU/g		CFU/plate	CFU/plate	CFU/g rounded	CFU/g rounded	log CFU/g	log CFU/g			log CFU/g
2006	561	Epinards à la béchamel	RTRH Spinach	100	0	0	0	0	<100	<100	<2,00	<2,00	<2,00	100	ND	ND	ND	ND	ND	ND	4	c	
				1000	0	0	0	0						1000									
2006	593	Piémontaise	Piemontaise	10	3	0	1	1	15	10	1,18	1,00	1,18*	10	1	1	10	10	1,00	1,00	1,00*	4	c
				100	0	0	0	0						100	0	0	Ne	Ne					
2006	627	Choux de Bruxelles	Frozen Brussel sprout	10	0	0	0	0	<10	<10	<1,00	<1,00	<1,00	10	1	1	10	10	1,00	1,00	1,00*	4	b
				100	0	0	0	0						100	0	0	Ne	Ne					
2006	629	Haricots verts	Green beans	10	0	0	0	0	<10	<10	<1,00	<1,00	<1,00	10	0	0	<10	<10	<1,00	<1,00	<1,00	4	a
				100	0	0	0	0						100	0	0							
2006	630	Courgettes	Zucchini	10	0	0	0	0	<10	<10	<1,00	<1,00	<1,00	10	1	0	10	<10	1,00	<1,00	1,00*	4	a
				100	0	0	0	0						100	0	0							
2006	631	Poêlée de légumes aux champignons surgelée	Frozen vegetables mix	10	0	0	0	0	<10	<10	<1,00	<1,00	<1,00	10	0	0	<10	<10	<1,00	<1,00	<1,00	4	b
				100	0	0	0	0						100	0	0							
2006	1346	Salade mêlée	Salad	100	0	3	1	0	150	50	2,18	1,70	2,18*	100	0	0	<100	<100	<2,00	<2,00	<2,00	4	a
				1000	0	0	0	0						1000	0	0							
2006	1347	Mélange crudités	Salad mix	100	0	0	0	0	<100	<100	<2,00	<2,00	<2,00	100	1	1	100	100	2,00	2,00	2,00*	4	c
				1000	0	0	0	0						1000	0	0							
2006	1348	Courgette rondelles surgelées	Frozen zucchini	100	1	0	2	3	50	250	1,70	2,40	1,70*	100	1	2	100	200	2,00	2,30	2,00*	4	b
				1000	0	0	0	0						1000	0	0	Ne	Ne					
2006	1349	Poêlée champêtre surgelée	Frozen vegetables mix	100	0	0	1	0	<100	50	<2,00	1,70	1,70*	100	0	6	<100	600	<2,00	2,78	2,78	4	b
				1000	0	0	0	0						1000	0	0	Ne	Ne					
2006	1354	Salade	Salad	100	44	47	53	38	4500	4500	3,65	3,65	3,65	100	48	57	4900	5800	3,69	3,76	3,69	4	a
				1000	6	2	3	4						1000	6	7							
2006	1390	Poireaux coupés	Leeks	1000	73	62	56	67	69000	63000	4,84	4,80	4,84	1000	40	33	44000	34000	4,64	4,53	4,64	4	a
				10000	12	5	8	8						10000	8	4							
2006	1391	Epinards à la crème surgelés	Frozen spinach	10000	85	69	90	83	740000	890000	5,87	5,95	5,87	10000	67	60	650000	600000	5,81	5,78	5,81	4	b
				100000	5	4	14	8						100000	4	6							
2006	1392	Haricots verts	Green beans	1000	88	68	103	100	78000	100000	4,89	5,00	4,89	1000	75	80	78000	77000	4,89	4,89	4,89	4	b
				10000	8	7	12	5						10000	11	5							
2006	1393	Poireaux émincés	Frozen leeks	1000	77	83	82	86	84000	84000	4,92	4,92	4,92	1000	52	58	50000	60000	4,70	4,78	4,70	4	b
				10000	14	10	9	8						10000	3	8							
2006	1394	Brocolis	Brocolis	1000	63	57	72	56	62000	65000	4,79	4,81	4,79	1000	63	53	62000	55000	4,79	4,74	4,79	4	a
				10000	8	7	10	4						10000	5	8							
2006	1395	Tomates en dés	Tomatoes	1000	82	113	109	119	100000	120000	5,00	5,08	5,00	1000	68	62	67000	61000	4,83	4,79	4,83	4	a
				10000	14	14	14	21						10000	6	5							
2006	1396	Chou rouge	Red cabbage	1000	135	122	143	145	130000	140000	5,11	5,15	5,11	1000	113	124	110000	130000	5,04	5,11	5,04	4	a
				10000	17	12	12	5						10000	13	16							
2006	1397	Mélange carottes céleri	Carrot and celery	10000	27	31	47	29	300000	370000	5,48	5,57	5,48	10000	33	24	340000	270000	5,53	5,43	5,53	4	a
				100000	4	3	3	2						100000	4	5							
2006	1398	Courgettes en rondelles surgelées	Frozen zucchini	1000	67	50	104	101	56000	100000	4,75	5,00	4,75	1000	65	82	67000	85000	4,83	4,93	4,83	4	b
				10000	2	5	7	11						10000	9	12							
2006	1718	Salade de légumes et mayonnaise	RTE Deli salad	100	38	44	48	43	4200	4400	3,62	3,64	3,62	100	41	40	4200	4000	3,62	3,60	3,62	4	c
				1000	5	6	4	2						1000	5	4							
2011	2058	Ratatouille	RTRH vegetables mix	10	11				120		2,08		2,08	10	11		110		2,04		2,04	4	c
				100	2									100	1								

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VEGETABLES

Analysis date	Sample N°	Product (French name)	Product	Reference method: ISO 16649-2*										CHROMID® (COLI ID-F) for the enumeration of β-glucuronidase-positive <i>Escherichia coli</i> at 37°C							Category	Type		
				Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Result	Dilution	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2			Result	
					CFU/plate a	CFU/plate b	CFU/plate a	CFU/plate b	CFU/g (rounded)	CFU/g (rounded)	log CFU/g	log CFU/g	log CFU/g		CFU/plate	CFU/plate	CFU/g rounded	CFU/g rounded	log CFU/g	log CFU/g			log CFU/g	
2011	2060	Carottes en lamelles cuites	RTRH carrots	100	29					2900		3,46		3,46	100	19		2000		3,30		3,30	4	c
				1000	3									1000	3									
2011	2120	Ratatouille surgelée	Frozen vegetables mix	10	51					510		2,71		2,71	10	29		300		2,48		2,48	4	b
				100	5									100	4									
2011	2121	Salade boulghour légumes du soleil	RTE salad with vegetables	100	112					11000		4,04		4,04	100	94		9100		3,96		3,96	4	c
				1000	10									1000	6									
2011	2183	Quiche aux poireaux surgelée	RTRH leeks	1000	69					65000		4,81		4,81	1000	38		38000		4,58		4,58	4	c
				10000	3									10000	4									
2011	2363	Salade carotte céleri	RTE salad with carrots and celery	10	42					430		2,63		2,63	10	33		310		2,49		2,49	4	c
				100	5									100	1									
2011	2364	Salade de céleri rémoulade	RTE salad with celery	100	20					2300		3,36		3,36	100	23		2500		3,40		3,40	4	c
				1000	5									1000	5									
2011	2365	Macédoine de légumes	RTE vegetables mix	10	25					240		2,38		2,38	10	4		40		1,60		1,60	4	c
				100	1									100	0					Ne		Ne		
2011	2366	Macédoine de légumes	RTE vegetables mix	100	>150					77000		4,89		4,89	100	>150		17000		4,23		4,23	4	c
				1000	77									1000	17					N'		N'		

EGGS AND EGG-EGG BASED PRODUCTS

Analysis date	Sample N°	Product (French name)	Product	Reference method: ISO 16649-2*										CHROMID® (COLI ID-F) for the enumeration of β-glucuronidase-positive <i>Escherichia coli</i> at 37°C							Category	Type	
				Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Result	Dilution	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2			Result
					CFU/plate a	CFU/plate b	CFU/plate a	CFU/plate b	CFU/g (rounded)	CFU/g (rounded)	log CFU/g	log CFU/g	log CFU/g		CFU/plate	CFU/plate	CFU/g rounded	CFU/g rounded	log CFU/g	log CFU/g			log CFU/g
2006	587	Baba au rhum	Pastry	10	1	0	0	0	<10	<10	<1,00	<1,00	<1,00	10	1	2	10	20	1,00	1,30	1,00*	5	c
				100	0	0	0	0						100	0	0	Ne	Ne					
2006	588	Meringue chocolat	Chocolate meringue	10	0	0	0	0	<10	<10	<1,00	<1,00	<1,00	10	0	0	<10	<10	<1,00	<1,00	<1,00	5	b
				100	0	0	0	0						100	0	0							
2006	728	Coule d'œuf	Egg liquid	10	11	9	10	6	100	80	2,00	1,90	2,00	10	3	3	30	30	1,48	1,48	1,48*	5	a
				100	0	1	0	0						100	0	0							
2006	827	Coule d'œuf	Egg liquid	10	0	0	1	0	<10	5	<1,00	0,70	<1,00	10	0	1	<10	10	<1,00	1,00	<1,00	5	a
				100	0	0	0	0						100	0	0							
2006	1291	Chou à la crème	Pastry	10	15	14	14	13	150	140	2,18	2,15	2,18	10	8	11	80	110	1,90	2,04	1,90	5	c
				100	0	0	4	4						100	0	0	Ne	Ne			Ne		
2006	1292	Crêpes	Crepes	10	17	6	13	5	120	90	2,08	1,95	2,08	10	9	10	90	100	1,95	2,00	1,95	5	b
				100	2	0	0	1						100	1	1					Ne		
2006	1293	Crêpes	Crepes	10	12	10	12	11	110	120	2,04	2,08	2,04	10	10	14	100	140	2,00	2,15	2,00	5	b
				100	2	3	1	3						100	1	3					Ne		
2006	1350	Fraisier	Pastry	100	5	5	1	2	500	150	2,70	2,18	2,70	100	1	3	100	300	2,00	2,48	2,00*	5	c
				1000	0	0	0	0						1000	0	0							
2006	1351	Millefeuille	Pastry	100	4	5	9	10	450	800	2,65	2,90	2,65	100	7	3	700	300	2,85	2,48	2,85	5	c
				1000	0	0	0	0						1000	2	0					Ne		
2006	1352	Mayonnaise	Mayonnaise	100	3	3	2	4	300	300	2,48	2,48	2,48*	100	2	5	200	500	2,30	2,70	2,70	5	b
				1000	0	0	0	0						1000	0	1					Ne		
2006	1353	Crème anglaise	Custard sauce	100	14	7	9	5	1000	700	3,00	2,85	3,00	100	14	13	1400	1300	3,15	3,11	3,15	5	b
				1000	0	0	0	0						1000	0	1							
2006	1355	Mayonnaise	Mayonnaise	100	24	44	15	22	3200	1900	3,51	3,28	3,51	100	30	27	3000	2800	3,48	3,45	3,48	5	b
				1000	1	2	2	2						1000	3	4							
2006	1356	Eclair café	Pastry	100	29	29	21	15	2800	1900	3,45	3,28	3,45	100	24	21	2500	2300	3,40	3,36	3,40	5	c
				1000	1	3	3	2						1000	3	4							
2006	1357	Savarin chantilly	Cake with eggs	100	21	30	32	29	2600	2900	3,41	3,46	3,41	100	30	28	3000	2800	3,48	3,45	3,48	5	b
				1000	4	2	1	1						1000	3	3							
2006	1358	Millefeuille	Pastry	100	49	46	43	45	4700	4300	3,67	3,63	3,67	100	41	57	4100	5600	3,61	3,75	3,61	5	c
				1000	4	4	4	2						1000	4	5							
2006	1660	Œuf entier biologique	Egg	100	35	34	54	50	3400	4900	3,53	3,69	3,53	100	39	46	3900	4600	3,59	3,66	3,59	5	a
				1000	4	1	3	1						1000	4	5							
2006	1661	Œuf dur	Egg	100	41	31	48	42	3600	4500	3,56	3,65	3,56	100	40	48	4100	4700	3,61	3,67	3,61	5	a
				1000	4	3	3	5						1000	5	4							
2006	1662	Jaune d'œuf biologique	Egg yolk	1000	11	10	18	15	10000	17000	4,00	4,23	4,00	1000	12	14	12000	14000	4,08	4,15	4,08	5	a
				10000	1	1	2	2						10000	0	0	Ne	Ne					
2006	1663	Omelette nature	Omelette	100	48	54	49	34	5200	4000	3,72	3,60	3,72	100	45	47	4700	4600	3,67	3,66	3,67	5	b
				1000	8	4	1	3						1000	7	4							
2006	1684	Omelette au fromage	Omelette with cheese	1000	8	10	6	10	9000	8000	3,95	3,90	3,95	1000	5	4	5000	4000	3,70	3,60	3,70	5	b
				10000	0	0	0	0						10000	0	0					Ne		
2006	1685	Flan	Cake with eggs	1000	4	2	5	4	3000	4500	3,48	3,65	3,48*	1000	5	7	5000	7000	3,70	3,85	3,70	5	b
				10000	0	0	0	0						10000	0	0	Ne	Ne			Ne		
2006	1686	Tartelette à la fraise	Pastry	1000	4	3	1	2	3500	1500	3,54	3,18	3,54*	1000	3	2	3000	2000	3,48	3,30	3,48*	5	c
				10000	0	0	0	0						10000	0	0							

* Analyses performed according to the COFRAC accreditation

EGGS AND EGG-EGG BASED PRODUCTS

Analysis date	Sample N°	Product (French name)	Product	Reference method: ISO 16649-2*										CHROMID® (COLI ID-F) for the enumeration of β-glucuronidase-positive <i>Escherichia coli</i> at 37°C							Category	Type	
				Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Result	Dilution	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2			Result
					CFU/plate a	CFU/plate b	CFU/plate a	CFU/plate b	CFU/g (rounded)	CFU/g (rounded)	log CFU/g	log CFU/g	log CFU/g		CFU/plate	CFU/plate	CFU/g rounded	CFU/g rounded	log CFU/g	log CFU/g			log CFU/g
2006	1687	Clafoutis aux pommes	Cake with eggs	1000	0	0	0	0	<1000	<1000	<3,00	<3,00	<3,00	1000	3	1	3000	1000	3,48	3,00	3,48*	5	b
				10000	0	0	0	0						10000	0	0							
2006	1688	Flan patissier	Cake with eggs	1000	0	0	0	0	<1000	<1000	<3,00	<3,00	<3,00	1000	0	0	<1000	<1000	<3,00	<3,00	<3,00	5	b
				10000	0	0	0	0						10000	0	0							
2006	1689	Jaune d'œuf liquide	Liquid egg yolk	100	8	8	9	9	800	900	2,90	2,95	2,90	100	12	11	1200	1100	3,08	3,04	3,08	5	a
				1000	1	1	1	2					Ne	1000	2	1	Ne	Ne					
2006	1690	Blanc d'œuf liquide	Liquid egg white	100	6	5	7	9	550	800	2,74	2,90	2,74	100	11	11	1100	1100	3,04	3,04	3,04	5	a
				1000	0	0	1	0					Ne	1000	2	1	Ne	Ne					
2006	1715	Jaune d'œuf	Egg yolk	100	22	15	29	23	2000	2500	3,30	3,40	3,30	100	28	25	2600	2400	3,41	3,38	3,41	5	a
				1000	3	4	1	2					1000	1	1								
2006	1716	Blanc d'œuf	Egg white	10	107	105	85	89	1200	980	3,08	2,99	3,08	10	90	114	950	1200	2,98	3,08	2,98	5	a
				100	24	19	21	20					100	14	19								
2006	1719	Omelette au fromage	Omelette with cheese	1000	30	42	45	34	36000	40000	4,56	4,60	4,56	1000	38	32	38000	30000	4,58	4,48	4,58	5	b
				10000	3	5	5	4					10000	4	1								
2011	2062	Tartelette cocktail	Pastry	10	24				240		2,38		2,38	10	8		80		1,90		1,90	5	c
				100	3								100	0				Ne		Ne			
2011	2063	Tartelette cocktail	Pastry	100	35				4300		3,63		3,63	100	14		1300		3,11		3,11	5	c
				1000	12								1000	0									
2011	2064	Tartelette fraise	Pastry	1000	50				49000		4,69		4,69	1000	28		26000		4,41		4,41	5	c
				10000	4								10000	1									
2018	6171	Tarte aux fraises	Pastry	10	0				<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	5	c
				100	0								100	0									
2018	6278	Quiche lorraine	Quiche with eggs	10	0				<10		<1,00		<1,00	10	1		10		1,00*		1,00*	5	b
				100	0								100	0									
2018	6281	Tarte aux fraises	Pastry	10	0				<10		<1,00		<1,00	10	0		<10		<1,00		<1,00	5	c
				100	0								100	0									
2018	6282	Pâtisserie aux fruits	Pastry with fruits	10	10				100		2,00		2,00	10	12		120		2,08		2,08	5	c
				100	0								100	0									
2018	6730	Mayonnaise fraiche	Mayonnaise	100	46				4400		3,64		3,64	100	61		6200		3,79		3,79	5	b
				1000	2								1000	7									
2018	6731	Tortilla espagnole aux oignons	Tortilla with onions	1000	39				37000		4,57		4,57	1000	54		58000		4,76		4,76	5	b
				10000	2								10000	10									
2018	6732	Eclair au chocolat	Pastry	100	16				1700		3,23		3,23	100	35		3500		3,54		3,54	5	c
				1000	3								1000	3									
2018	6733	Millefeuille	Pastry	1000	57				60000		4,78		4,78	1000	65		63000		4,80		4,80	5	c
				10000	9								10000	4									

Appendix 5 - Relative trueness study: calculations

Category	N° sample	Product	Log cfu/g		Average	Difference	Alternative method		Average <4 CFU/ plate	Difference <4 CFU/ plate	Average corrected values	Difference Corrected values
			Reference method	Alternative method			<4 CFU/ plate	<or> threshold corrected values				
1	562	Raw veal meat	1,00		#N/A			0,00	#N/A		0,50	-1,00
	563	Raw veal meat	1,00		#N/A			0,00	#N/A		0,50	-1,00
	564	Raw veal meat	0,00		#N/A			1,00	#N/A		0,50	1,00
	565	Raw meat	1,30		#N/A				#N/A		#N/A	
	566	Raw chicken meat	1,70		#N/A				#N/A		#N/A	
	594	Raw pork meat	1,60		#N/A		1,70		1,65	0,10	#N/A	
	596	Chicken meat	2,08	1,70	1,89	-0,38			#N/A		#N/A	
	628	Raw pork meat	1,60	1,85	1,72	0,24			#N/A		#N/A	
	639	Raw turkey meat	2,95	2,95	2,95	0,00			#N/A		#N/A	
	640	Raw chicken meat	0,70		#N/A			1,00	0,85	0,30	#N/A	
	1866	Raw turkey meat	2,75	2,56	2,65	-0,19			#N/A		#N/A	
	1867	Raw turkey meat	2,71	2,65	2,68	-0,05			#N/A		#N/A	
	1911	Raw meat	3,04	2,75	2,89	-0,29			#N/A		#N/A	
	1912	Raw meat	2,96	2,77	2,86	-0,19			#N/A		#N/A	
	1913	Raw turkey meat	3,73	2,45	3,09	-1,29			#N/A		#N/A	
	1915	Raw turkey meat	4,23	3,81	4,02	-0,42			#N/A		#N/A	
	1916	Raw turkey meat	3,15	2,92	3,03	-0,23			#N/A		#N/A	
	1918	Raw pork meat	4,00	3,81	3,91	-0,19			#N/A		#N/A	
	1919	Raw pork meat	4,72	4,59	4,66	-0,13			#N/A		#N/A	
	2186	Raw turkey meat	2,20	2,30	2,25	0,10			#N/A		#N/A	
	590	Sausage	1,65		#N/A			1,00	1,33	-0,65	#N/A	
	591	Sausage	1,70	1,00				1,00				
	592	Sausage	1,54	1,00				1,00				
	1288	Delicatessen terrine	3,90	3,85								
	1389	Sausage	6,08	5,98								
	1717	Bacon	3,60	3,65								
	1868	Seasoned turkey meat	3,77	3,58								
	1869	Sausage	3,00	2,88								
	1870	Sausage	2,90	2,86								
	1871	Smoked sausage	2,69	2,43								
	2152	Smoked sausage	1,60	1,70								
	2153	Smoked sausage	3,62	3,63								
	2185	Sausage	2,11	1,78								
	2369	Cooked ham	3,30	1,78								
	2470	Sausage with garlic	2,91	2,72								
	2472	Chorizo	3,57	3,04								
	2473	Sausage with garlic	3,83	3,76								
	2475	Ham	1,85	1,70	1,77	-0,15			#N/A		#N/A	
	2476	Bacon	1,70	1,95	1,83	0,26			#N/A		#N/A	
	2478	Smoked delicatessen	4,32	4,23	4,28	-0,09			#N/A		#N/A	
	2479	Ham	4,79	4,20	4,50	-0,59			#N/A		#N/A	
	589	Tartar	1,30		#N/A		1,60		1,45	0,30	#N/A	
595	RTRH pork meat	1,00		#N/A		1,30		1,15	0,30	#N/A		
1287	RTRH chicken meat	4,08	4,11	4,10	0,03			#N/A		#N/A		
1289	RTRH beef meat	4,08	3,95	4,02	-0,12			#N/A		#N/A		
2059	RTRH beef meat	3,38	3,30	3,34	-0,08			#N/A		#N/A		
2065	RTRH pork meat	3,85	3,40	3,62	-0,45			#N/A		#N/A		
2066	RTRH pork meat	3,04	2,00	2,52	-1,04			#N/A		#N/A		
2151	Sandwich with ham egg and vegetables	3,71	3,41	3,56	-0,29			#N/A		#N/A		
2184	Sandwich with chicken	3,67	3,52	3,60	-0,15			#N/A		#N/A		
2368	Sandwich with ham	3,65	2,86	3,26	-0,79			#N/A		#N/A		
2480	Sandwich with chicken	2,28	2,08	2,18	-0,20			#N/A		#N/A		
2481	Sandwich with chicken	2,11	2,15	2,13	0,03			#N/A		#N/A		
2482	RTE salad with chicken	2,97	2,20	2,59	-0,77			#N/A		#N/A		
Average category 1												
Standard deviation of differences category 1												
2	725	Raw milk	1,54	1,64	1,59	0,10			#N/A		#N/A	
	824	Raw milk	3,18	3,15	3,16	-0,03			#N/A		#N/A	
	842	Raw milk	3,38	3,00	3,19	-0,38			#N/A		#N/A	
	1478	Milk	3,70	3,49	3,60	-0,21			#N/A		#N/A	
	1479	Milk	3,53	3,54	3,54	0,01			#N/A		#N/A	
	6167	Raw milk	1,90	2,08	1,99	0,18			#N/A		#N/A	
	6168	Raw milk	2,15	2,04	2,09	-0,10			#N/A		#N/A	
	726	Cheese	0,00		#N/A			0,00	#N/A		0,00	0,00
	847	Cheese	3,93	3,99	3,96	0,06			#N/A		#N/A	
	1290	Cream	1,93	2,11	2,02	0,18			#N/A		#N/A	
	6283	Raw milk cheese	0,00		#N/A			0,00	#N/A		0,00	0,00
	6284	Raw milk cheese	0,00		#N/A			0,00	#N/A		0,00	0,00
	6404	Cream	4,72	4,81	4,77	0,08			#N/A		#N/A	
	6405	Cheese	0,00		#N/A			0,00	#N/A		0,00	0,00
	6717	Dessert (rice pudding)	2,76	2,69	2,73	-0,07			#N/A		#N/A	
	6718	Dessert (rice pudding)	3,59	3,58	3,59	-0,01			#N/A		#N/A	
	6719	Panna cotta	4,56	4,43	4,49	-0,12			#N/A		#N/A	
	6720	Cream	5,41	5,57	5,49	0,15			#N/A		#N/A	
	6297	Skimmed milk powder	0,00		#N/A			0,00	#N/A		0,00	0,00
	6298	Skimmed milk powder	0,00		#N/A			1,30	#N/A		0,65	1,30
	6299	Whole milk powder	0,00		#N/A			0,00	#N/A		0,00	0,00
	6300	Whole milk powder	0,00		#N/A			2,85	#N/A		1,43	2,85
	6301	Skimmed milk powder	1,60	3,23	2,42	1,63			#N/A		#N/A	
	6734	Semi skimmed milk powder	1,70	1,60	1,65	-0,10			#N/A		#N/A	
	6735	Skimmed milk powder	2,36	2,41	2,39	0,05			#N/A		#N/A	
	6736	Semi skimmed milk powder	2,90	3,54	3,22	0,64			#N/A		#N/A	
	6737	Milk powder	3,30	3,72	3,51	0,41			#N/A		#N/A	
	6738	Skimmed milk powder	2,96		#N/A			2,00	#N/A		2,48	-0,96
	6739	Skimmed milk powder	2,00		#N/A			3,30	#N/A		2,65	1,30
	Average category 2											
Standard deviation of differences category 2												

Category	N° sample	Product	Log cfu/g		Average	Difference	Alternative method		Average <4 CFU/ plate	Difference <4 CFU/ plate	Average corrected values	Difference Corrected values
			Reference method	Alternative method			<4 CFU/ plate	<or> threshold corrected values				
3	1342	Raw fish	2,95	2,60	2,78	-0,35			#N/A		#N/A	
	1343	Raw fish	2,93	2,90	2,92	-0,03			#N/A		#N/A	
	1385	Raw salmon	4,85	4,73	4,79	-0,11			#N/A		#N/A	
	1387	Raw trout fish filet	4,58	4,57	4,57	-0,01			#N/A		#N/A	
	6169	Raw fish	0,00		#N/A			0,00	#N/A		0,00	0,00
	6402	Raw lobster	0,00		#N/A			0,00	#N/A		0,00	0,00
	6403	Raw salmon	0,00		#N/A			0,00	#N/A		0,00	0,00
	6723	Raw fish	2,60	2,67	2,64	0,07			#N/A		#N/A	
	6724	Raw fish	3,43	3,65	3,54	0,22			#N/A		#N/A	
	6725	Raw fish	4,28	4,32	4,30	0,04			#N/A		#N/A	
	6726	Raw seafood	3,46	3,67	3,57	0,21			#N/A		#N/A	
	6727	Raw seafood	4,64	4,69	4,67	0,05			#N/A		#N/A	
	6728	Raw shrimps	3,70	4,54	4,12	0,85			#N/A		#N/A	
	6729	Scallops	4,18	4,88	4,53	0,70			#N/A		#N/A	
	1344	Smoked fish	2,65	2,70	2,68	0,05			#N/A		#N/A	
	1345	Smoked salmon	2,81	2,90	2,86	0,09			#N/A		#N/A	
	1383	Smoked salmon	5,59	5,71	5,65	0,12			#N/A		#N/A	
	1384	Smoked salmon	5,45	5,34	5,39	-0,10			#N/A		#N/A	
	1386	Smoked salmon	4,46	4,34	4,40	-0,12			#N/A		#N/A	
	1388	Smoked salmon	5,60	5,46	5,53	-0,14			#N/A		#N/A	
	6291	Marinated anchovy	3,08	3,08	3,08	0,00			#N/A		#N/A	
	6294	Marinated anchovy	3,52	3,60	3,56	0,08			#N/A		#N/A	
	2150	RTE salad with salmon	2,56	2,18	2,37	-0,38			#N/A		#N/A	
	6170	RTRH seafood	0,00		#N/A			0,00	#N/A		0,00	0,00
	6279	RTRH fish	0,00		#N/A			0,00	#N/A		0,00	0,00
	6280	RTRH salmon	0,00		#N/A			0,00	#N/A		0,00	0,00
	6292	RTE surimi	3,38	3,43	3,41	0,05			#N/A		#N/A	
	6293	RTE surimi	2,58	2,20	2,39	-0,38			#N/A		#N/A	
	6295	RTE surimi	3,81	3,88	3,84	0,06			#N/A		#N/A	
	6296	RTE surimi	4,76	4,86	4,81	0,11			#N/A		#N/A	
	6398	RTRH mussels	1,00		#N/A			0,00	#N/A		0,50	-1,00
6399	RTRH mussels	0,00		#N/A			0,00	#N/A		0,00	0,00	
6400	Scallops	0,00		#N/A			0,00	#N/A		0,00	0,00	
6401	RTRH fish	1,78		#N/A			1,30	1,54	-0,48	#N/A		
Average category 3												
Standard deviation of differences category 3							0,04					
4	629	Green beans	0,00		#N/A			0,00	#N/A		0,00	0,00
	630	Zucchini	0,00		#N/A			1,00	#N/A		0,50	1,00
	1346	Salad	2,18		#N/A			1,00	#N/A		1,59	-1,18
	1354	Salad	3,65	3,69	3,67	0,04			#N/A		#N/A	
	1390	Leeks	4,84	4,64	4,74	-0,20			#N/A		#N/A	
	1394	Broccolis	4,79	4,79	4,79	0,00			#N/A		#N/A	
	1395	Tomatoes	5,00	4,83	4,91	-0,17			#N/A		#N/A	
	1396	Red cabbage	5,11	5,04	5,08	-0,07			#N/A		#N/A	
	1397	Carrot and celery	5,48	5,53	5,50	0,05			#N/A		#N/A	
	627	Frozen Brussel sprout	0,00		#N/A			1,00	#N/A		0,50	1,00
	631	Frozen vegetables mix	0,00		#N/A			0,00	#N/A		0,00	0,00
	1348	Frozen zucchini	1,70		#N/A			1,00	1,35	-0,70	#N/A	
	1349	Frozen vegetables mix	1,70		#N/A			2,78	2,24	1,08	#N/A	
	1391	Frozen spinach	5,87	5,81	5,84	-0,06			#N/A		#N/A	
	1392	Green beans	4,89	4,89	4,89	0,00			#N/A		#N/A	
	1393	Frozen leeks	4,92	4,70	4,81	-0,23			#N/A		#N/A	
	1398	Frozen zucchini	4,75	4,83	4,79	0,08			#N/A		#N/A	
	2120	Frozen vegetables mix	2,71	2,48	2,59	-0,23			#N/A		#N/A	
	561	RTRH Spinach	1,00		#N/A				#N/A		#N/A	
	593	Piemontaise	1,18		#N/A			1,00	1,09	-0,18	#N/A	
	1347	Salad mix	1,00		#N/A			2,00	#N/A		1,50	1,00
	1718	RTE Deli salad	3,62	3,62	3,62	0,00			#N/A		#N/A	
	2058	RTRH vegetables mix	2,08	2,04	2,06	-0,04			#N/A		#N/A	
	2060	RTRH carrots	3,46	3,30	3,38	-0,16			#N/A		#N/A	
	2121	RTE salad with vegetables	4,04	3,96	4,00	-0,08			#N/A		#N/A	
	2183	RTRH leeks	4,81	4,58	4,70	-0,23			#N/A		#N/A	
	2363	RTE salad with carrots and celery	2,63	2,49	2,56	-0,14			#N/A		#N/A	
	2364	RTE salad with celery	3,36	3,40	3,38	0,04			#N/A		#N/A	
	2365	RTE vegetables mix	2,38	1,60	1,99	-0,78			#N/A		#N/A	
	2366	RTE vegetables mix	4,89	4,23	4,56	-0,66			#N/A		#N/A	
	Average category 4							-0,14				
Standard deviation of differences category 4							0,22					

Category	N° sample	Product	Log cfu/g		Average	Difference	Alternative method		Average <4 CFU/ plate	Difference <4 CFU/ plate	Average corrected values	Difference Corrected values
			Reference method	Alternative method			<4 CFU/ plate	<or> threshold corrected values				
5	728	Egg liquid	2,00		#N/A		1,48		1,74	-0,52	#N/A	
	827	Egg liquid	0,00		#N/A			0,00	#N/A		0,00	0,00
	1660	Egg	3,53	3,59	3,56	0,06			#N/A		#N/A	
	1661	Egg	3,56	3,61	3,58	0,06			#N/A		#N/A	
	1662	Egg yolk	4,00	4,08	4,04	0,08			#N/A		#N/A	
	1689	Liquid egg yolk	2,90	3,08	2,99	0,18			#N/A		#N/A	
	1690	Liquid egg white	2,74	3,04	2,89	0,30			#N/A		#N/A	
	1715	Egg yolk	3,30	3,41	3,36	0,11			#N/A		#N/A	
	1716	Egg white	3,08	2,98	3,03	-0,10			#N/A		#N/A	
	588	Chocolate meringue	0,00		#N/A			0,00	#N/A		0,00	0,00
	1292	Crepes	2,08	1,95	2,02	-0,12			#N/A		#N/A	
	1293	Crepes	2,04	2,00	2,02	-0,04			#N/A		#N/A	
	1352	Mayonnaise	2,48		#N/A		2,70		2,59	0,22	#N/A	
	1353	Custard sauce	3,00	3,15	3,07	0,15			#N/A		#N/A	
	1355	Mayonnaise	3,51	3,48	3,49	-0,03			#N/A		#N/A	
	1357	Cake with eggs	3,41	3,48	3,45	0,06			#N/A		#N/A	
	1663	Omelette	3,72	3,67	3,69	-0,04			#N/A		#N/A	
	1684	Omelette with cheese	3,95	3,70	3,83	-0,26			#N/A		#N/A	
	1685	Cake with eggs	3,48		#N/A		3,70		3,59	0,22	#N/A	
	1687	Cake with eggs	2,00		#N/A			3,48	#N/A		2,74	1,48
	1688	Cake with eggs	2,00		#N/A			2,00	#N/A		2,00	0,00
	1719	Omelette with cheese	4,56	4,58	4,57	0,02			#N/A		#N/A	
	6278	Quiche with eggs	0,00		#N/A			1,00	#N/A		0,50	1,00
	6730	Mayonnaise	3,64	3,79	3,72	0,15			#N/A		#N/A	
	6731	Tortilla with onions	4,57	4,76	4,67	0,20			#N/A		#N/A	
	587	Pastry	0,00		#N/A			1,00	#N/A		0,50	1,00
	1291	Pastry	2,18	1,90	2,04	-0,27			#N/A		#N/A	
	1350	Pastry	2,70		#N/A		2,00		2,35	-0,70	#N/A	
	1351	Pastry	2,65	2,85	2,75	0,19			#N/A		#N/A	
	1356	Pastry	3,45	3,40	3,42	-0,05			#N/A		#N/A	
	1358	Pastry	3,67	3,61	3,64	-0,06			#N/A		#N/A	
	1686	Pastry	3,54		#N/A		3,48		3,51	-0,06	#N/A	
	2062	Pastry	2,38	1,90	2,14	-0,48			#N/A		#N/A	
2063	Pastry	3,63	3,11	3,37	-0,52			#N/A		#N/A		
2064	Pastry	4,69	4,41	4,55	-0,28			#N/A		#N/A		
6171	Pastry	0,00		#N/A			0,00	#N/A		0,00	0,00	
6281	Pastry	0,00		#N/A			0,00	#N/A		0,00	0,00	
6282	Pastry with fruits	2,00	2,08	2,04	0,08			#N/A		#N/A		
6732	Pastry	3,23	3,54	3,39	0,31			#N/A		#N/A		
6733	Pastry	4,78	4,80	4,79	0,02			#N/A		#N/A		
Average category 5												
Standard deviation of differences category 5												
Average all categories						Dall						
Standard deviation of differences all categories						SDAll						

β=95%

n all	134						
T(0,05;70)=	1,98						
	0,66	Upper limit	Lower limit	Linear			
Average (minimal value)	0,00	0,60	-0,72	-0,06			
Average (maximal value)	10,00	0,60	-0,72	-0,06			
Category	n	T(0,05;70)=	SD	ISO formula	Bias	Lower limit (95%)	Upper limit (95%)
1	44	2,02	0,36	0,73	-0,26	-0,99	0,46
2	19	2,10	0,43	0,92	0,13	-0,79	1,05
3	24	2,07	0,28	0,59	0,04	-0,54	0,63
4	20	2,09	0,22	0,48	-0,14	-0,62	0,33
5	27	2,06	0,21	0,43	-0,01	-0,45	0,42
All categories	134	1,98	0,33	0,66	-0,06	-0,72	0,60

Appendix 6 - Accuracy profile study: raw data

Matrix	Strain	Level	Sample N°	ISO 16649-2*				CHROMID Coli 37°C			
				Dilution	cfu/plate	cfu/g (rounded)	log cfu/g	Dilution	cfu/plate	cfu/g (rounded number)	log cfu/g
Ground beef -Batch 1	<i>Escherichia coli</i> 13	1	7650	10	37	360	2,56	10	30	310	2,49
				100	2			100	4		
			7651	10	32	340	2,53	10	33	340	2,53
				100	5			100	4		
			7652	10	34	360	2,56	10	31	320	2,51
				100	6			100	4		
		7653	10	41	390	2,59	10	32	320	2,51	
			100	2			100	3			
		7654	10	36	350	2,54	10	40	410	2,61	
			100	2			100	5			
		2	7655	100	65	6200	3,79	100	58	5700	3,76 N'
				1000	3			1000	5		
			7656	100	79	7600	3,88	100	56	5500	3,74 N'
				1000	5			1000	5		
			7657	100	61	5900	3,77	100	64	6200	3,79 N'
				1000	4			1000	4		
		7658	100	55	5500	3,74	100	61	6700	3,83 N'	
			1000	6			1000	13			
		7659	100	56	5800	3,76	100	49	5100	3,71 N'	
			1000	8			1000	7			
		3	7660	1000	94	95000	4,98	1000	81	86000	4,93
				10000	11			10000	14		
			7661	1000	86	88000	4,94	1000	124	120000	5,08
				10000	11			10000	9		
7662	1000		93	98000	4,99	1000	110	110000	5,04		
	10000		15			10000	14				
7663	1000	115	110000	5,04	1000	127	120000	5,08			
	10000	9			10000	7					
7664	1000	88	80000	4,90	1000	131	130000	5,11			
	10000	0			10000	11					
Ground beef -Batch 2	<i>Escherichia coli</i> 13	1	7665	10	47	470	2,67	10	32	310	2,49
				100	5			100	2		
			7666	10	25	270	2,43	10	45	450	2,65
				100	5			100	4		
			7667	10	34	340	2,53	10	41	400	2,60
				100	3			100	3		
		7668	10	35	350	2,54	10	36	390	2,59	
			100	3			100	7			
		7669	10	35	370	2,57	10	31	290	2,46	
			100	6			100	1			
		2	7670	100	66	6400	3,81	100	54	5900	3,77 N'
				1000	4			1000	11		
			7671	100	56	5500	3,74	100	62	6500	3,81 N'
				1000	5			1000	9		
			7672	100	56	5800	3,76	100	69	6500	3,81 N'
				1000	8			1000	3		
		7673	100	56	5500	3,74	100	60	5900	3,77 N'	
			1000	5			1000	5			
		7674	100	58	5900	3,77	100	68	6500	3,81 N4	
			1000	7			1000	4			
		3	7675	1000	118	120000	5,08	1000	117	120000	5,08
				10000	16			10000	12		
			7676	1000	100	110000	5,04	1000	117	110000	5,04
				10000	17			10000	6		
7677	1000		125	130000	5,11	1000	124	120000	5,08		
	10000		23			10000	7				
7678	1000	100	110000	5,04	1000	133	130000	5,11			
	10000	16			10000	11					
7679	1000	86	93000	4,97	1000	98	100000	5,00			
	10000	16			10000	12					

* Analyses performed according to the COFRAC accreditation

Matrix	Strain	Level	Sample N°	ISO 16649-2*				CHROMID Coli 37°C			
				Dilution	cfu/plate	cfu/g (rounded)	log cfu/g	Dilution	cfu/plate	cfu/g (rounded number)	log cfu/g
Pasteurized milk -Batch 1 (4,0.10 ³ CFU/g)	Escherichia coli 94	1	7750	10	18	190	2,28	10	28	280	2,45
				100	3			100	3		
			7751	10	29	320	2,51	10	35	350	2,54
				100	6			100	3		
			7752	10	26	240	2,38	10	37	360	2,56
				100	0			100	2		
		7753	10	22	210	2,32	10	33	300	2,48	
			100	1			100	0			
		7754	10	16	170	2,23	10	25	270	2,43	
			100	3			100	5			
		2	7755	100	37	3600	3,56	100	45	4400	3,64
				1000	3			1000	3		
			7756	100	36	3800	3,58	100	49	5000	3,70
				1000	6			1000	6		
			7757	100	43	4500	3,65	100	44	4300	3,63
				1000	6			1000	3		
		7758	100	43	4400	3,64	100	53	5200	3,72	
			1000	5			1000	4			
		7759	100	38	3700	3,57	100	44	4600	3,66	
			1000	3			1000	7			
		3	7760	1000	56	55000	4,74	1000	69	68000	4,83
				10000	5			10000	6		
			7761	1000	67	67000	4,83	1000	73	74000	4,87
				10000	7			10000	8		
			7762	1000	68	68000	4,83	1000	83	84000	4,92
				10000	7			10000	9		
		7763	1000	72	75000	4,88	1000	69	73000	4,86	
10000	10		10000	11							
7764	1000	65	67000	4,83	1000	75	75000	4,88			
	10000	9			10000	7					
Pasteurized milk -Batch 2 (<1 CFU/g)	Escherichia coli 94	1	7765	10	34	320	2,51	10	19	200	2,30
				100	1			100	3		
			7766	10	30	330	2,52	10	31	300	2,48
				100	6			100	2		
			7767	10	33	330	2,52	10	26	270	2,43
				100	3			100	4		
		7768	10	35	340	2,53	10	30	290	2,46	
			100	2			100	2			
		7769	10	31	330	2,52	10	38	360	2,56	
			100	5			100	2			
		2	7770	100	51	4900	3,69	100	57	5500	3,74
				1000	3			1000	3		
			7771	100	52	5100	3,71	100	53	5500	3,74
				1000	4			1000	7		
			7772	100	51	5000	3,70	100	62	6200	3,79
				1000	4			1000	6		
		7773	100	48	5000	3,70	100	64	6300	3,80	
			1000	7			1000	5			
		7774	100	58	6000	3,78	100	62	6500	3,81	
			1000	8			1000	9			
		3	7775	1000	94	97000	4,99	1000	110	110000	5,04
				10000	13			10000	13		
			7776	1000	106	110000	5,04	1000	106	100000	5,00
				10000	13			10000	9		
			7777	1000	98	100000	5,00	1000	87	86000	4,93
				10000	12			10000	8		
		7778	1000	85	93000	4,97	1000	97	99000	5,00	
10000	17		10000	12							
7779	1000	93	94000	4,97	1000	83	85000	4,93			
	10000	10			10000	10					

* Analyses performed according to the COFRAC accreditation

Matrix	Strain	Level	Sample N°	ISO 16649-2 [♦]				CHROMID Coli 37°C			
				Dilution	cfu/plate	cfu/g (rounded)	log cfu/g	Dilution	cfu/plate	cfu/g (rounded number)	log cfu/g
Pasteurized liquid egg product-Batch 1 (20 CFU/g)	<i>Escherichia coli</i> 142	1	8051	10	32	330	2,52	10	41	420	2,62
				100	4			100	5		
			8052	10	31	330	2,52	10	40	400	2,60
				100	5			100	4		
			8053	10	42	420	2,62	10	32	340	2,53
		100		4	100			5			
		8054	10	32	320	2,51	10	33	350	2,54	
			100	3			100	5			
		8055	10	42	400	2,60	10	47	470	2,67	
			100	2			100	5			
		2	8056	100	50	5200	3,72	100	56	5500	3,74
				1000	7			1000	5		
			8057	100	45	4600	3,66	100	54	5100	3,71
				1000	6			1000	2		
			8058	100	51	4900	3,69	100	47	4700	3,67
				1000	3			1000	5		
		8059	100	55	5300	3,72	100	52	5500	3,74	
			1000	3			1000	8			
		8060	100	43	4100	3,61	100	37	3900	3,59	
			1000	2			1000	6			
		3	8061	1000	79	83000	4,92	1000	108	110000	5,04
				10000	12			10000	10		
			8062	1000	57	59000	4,77	1000	69	69000	4,84
				10000	8			10000	7		
8063	1000		75	84000	4,92	1000	84	91000	4,96		
	10000		17			10000	16				
8064	1000		81	84000	4,92	1000	77	78000	4,89		
	10000		11			10000	9				
8065	1000	87	90000	4,95	1000	84	83000	4,92			
	10000	12			10000	7					
Pasteurized liquid egg product-Batch 2 (20 CFU/g)	<i>Escherichia coli</i> 142	1	8066	10	20	210	2,32	10	24	260	2,41
				100	3			100	4		
			8067	10	34	340	2,53	10	37	370	2,57
				100	3			100	4		
			8068	10	27	270	2,43	10	38	400	2,60
		100		3	100			6			
		8069	10	46	450	2,65	10	42	400	2,60	
			100	3			100	2			
		8070	10	41	410	2,61	10	41	410	2,61	
			100	4			100	4			
		2	8071	100	44	4200	3,62	100	41	4000	3,60
				1000	2			1000	3		
			8072	100	58	6100	3,79	100	55	5300	3,72
				1000	9			1000	3		
			8073	100	56	5700	3,76	100	56	5500	3,74
				1000	7			1000	4		
		8074	100	59	6100	3,79	100	57	5700	3,76	
			1000	8			1000	6			
		8075	100	43	4500	3,65	100	46	4700	3,67	
			1000	7			1000	6			
		3	8076	1000	118	120000	5,08	1000	86	94000	4,97
				10000	12			10000	17		
			8077	1000	86	90000	4,95	1000	100	100000	5,00
				10000	13			10000	11		
8078	1000		93	91000	4,96	1000	79	77000	4,89		
	10000		7			10000	6				
8079	1000		83	85000	4,93	1000	90	83000	4,92		
	10000		11			10000	1				
8080	1000	101	110000	5,04	1000	105	110000	5,04			
	10000	16			10000	13					

♦ Analyses performed according to the COFRAC accreditation

Matrix	Strain	Level	Sample N°	ISO 16649-2 [♦]				CHROMID Coli 37°C			
				Dilution	cfu/plate	cfu/g (rounded)	log cfu/g	Dilution	cfu/plate	cfu/g (rounded number)	log cfu/g
Fish fillet -Batch 1 (5.2.10 ³ CFU/g)	Escherichia coli Ad228	1	8164	10	37	340	2,53	10	28	260	2,41
				100	0			100	1		
			8165	10	32	290	2,46	10	24	260	2,41
				100	0			100	4		
			8166	10	25	260	2,41	10	24	240	2,38
		100		3	100			2			
		8167	10	24	240	2,38	10	28	260	2,41	
			100	2			100	1			
		8168	10	20	190	2,28	10	29	260	2,41	
			100	1			100	0			
		2	8169	100	52	4900	3,69	100	46	4500	3,65 N'
				1000	2			1000	3		
			8170	100	47	4600	3,66	100	42	4100	3,61 N'
				1000	4			1000	3		
			8171	100	38	4300	3,63	100	44	4500	3,65 N'
				1000	9			1000	6		
		8172	100	43	4200	3,62	100	31	3000	3,48 N'	
			1000	3			1000	2			
		8173	100	40	4200	3,62	100	37	3500	3,54 N'	
			1000	6			1000	1			
		3	8174	1000	58	58000	4,76	1000	61	59000	4,77
10000	6			10000	4						
8175	1000		57	56000	4,75	1000	54	56000	4,75		
	10000		5			10000	8				
8176	1000		62	65000	4,81	1000	70	69000	4,84		
	10000		10			10000	6				
8177	1000	59	59000	4,77	1000	53	58000	4,76			
	10000	6			10000	11					
8178	1000	56	55000	4,74	1000	57	59000	4,77			
	10000	4			10000	8					
Fish fillet -Batch 2 (2.5.10 ³ CFU/g)	Escherichia coli Ad228	1	8179	10	35	370	2,57	10	28	260	2,41
				100	6			100	0		
			8180	10	27	280	2,45	10	25	280	2,45
				100	4			100	6		
			8181	10	29	260	2,41	10	36	390	2,59
		100		0	100			7			
		8182	10	27	250	2,40	10	26	270	2,43	
			100	0			100	4			
		8183	10	46	430	2,63	10	33	300	2,48	
			100	1			100	0			
		2	8184	100	50	4700	3,67	100	48	5200	3,72 N'
				1000	2			1000	9		
			8185	100	54	5500	3,74	100	55	5500	3,74 N'
				1000	6			1000	5		
			8186	100	45	4500	3,65	100	39	3600	3,56 N'
				1000	5			1000	1		
		8187	100	45	4500	3,65	100	49	5200	3,72 N'	
			1000	4			1000	8			
		8188	100	37	4100	3,61	100	53	5400	3,73 N4	
			1000	8			1000	6			
		3	8189	1000	79	78000	4,89	1000	56	59000	4,77
10000	7			10000	9						
8190	1000		79	85000	4,93	1000	67	70000	4,85		
	10000		14			10000	10				
8191	1000		70	74000	4,87	1000	73	74000	4,87		
	10000		11			10000	8				
8192	1000		70	70000	4,85	1000	78	76000	4,88		
	10000	7	10000			6					
8193	1000	66	68000	4,83	1000	67	69000	4,84			
	10000	9			10000	9					

♦ Analyses performed according to the COFRAC accreditation

Matrix	Strain	Level	Sample N°	ISO 16649-2♦				CHROMID Coli 37°C			
				Dilution	cfu/plate	cfu/g (rounded)	log cfu/g	Dilution	cfu/plate	cfu/g (rounded number)	log cfu/g
Grated carrots -Batch 1 (>3, 0.10 ⁵ CFU/g)	Escherichia coli 19	1	8239	10	25	260	2,41	10	23	240	2,38
				100	3			100	3		
			8240	10	25	240	2,38	10	23	220	2,34
				100	1			100	1		
			8241	10	15	150	2,18	10	23	220	2,34
		100		1	100			1			
		8242	10	21	200	2,30	10	15	150	2,18	
			100	1			100	1			
		8243	10	21	220	2,34	10	16	160	2,20	
			100	3			100	2			
		2	8244	100	25	2500	3,40	100	35	3400	3,53 N'
				1000	3			1000	2		
			8245	100	29	2700	3,43	100	41	3800	3,58 N'
				1000	1			1000	1		
			8246	100	38	3700	3,57	100	31	3000	3,48 N'
				1000	3			1000	2		
			8247	100	36	3800	3,58	100	34	3400	3,53 N'
				1000	6			1000	3		
			8248	100	29	2800	3,45	100	29	3200	3,51 N'
				1000	2			1000	6		
		3	8249	1000	46	48000	4,68	1000	55	57000	4,76
				10000	7			10000	8		
			8250	1000	59	63000	4,80	1000	51	47000	4,67
				10000	10			10000	1		
			8251	1000	60	58000	4,76	1000	58	56000	4,75
				10000	4			10000	4		
			8252	1000	46	45000	4,65	1000	44	46000	4,66
10000	4	10000		7							
8253	1000	48	49000	4,69	1000	57	58000	4,76			
	10000	6			10000	7					
Grated carrots -Batch 2 (>3, 0.10 ⁵ CFU/g)	Escherichia coli 19	1	8254	10	13	160	2,20	10	20	200	2,30
				100	5			100	2		
			8255	10	31	290	2,46	10	16	160	2,20
				100	1			100	2		
			8256	10	19	180	2,26	10	17	160	2,20
				100	1			100	0		
		8257	10	18	200	2,30	10	17	160	2,20	
			100	4			100	1			
		8258	10	25	250	2,40	10	21	220	2,34	
			100	2			100	3			
		2	8259	100	24	2500	3,40	100	36	3500	3,54 N'
				1000	4			1000	3		
			8260	100	22	2600	3,41	100	55	5600	3,75 N'
				1000	7			1000	7		
			8261	100	37	3500	3,54	100	36	3500	3,54 N'
				1000	2			1000	2		
			8262	100	31	3200	3,51	100	24	2400	3,38 N'
		1000		4	1000			2			
		8263	100	33	3300	3,52	100	26	2800	3,45 N4	
			1000	3			1000	5			
		3	8264	1000	48	44000	4,64	1000	47	49000	4,69
				10000	0			10000	7		
			8265	1000	49	48000	4,68	1000	53	56000	4,75
				10000	4			10000	9		
			8266	1000	45	45000	4,65	1000	56	57000	4,76
				10000	5			10000	7		
			8267	1000	43	45000	4,65	1000	43	44000	4,64
10000	7			10000	5						
8268	1000		44	44000	4,64	1000	54	57000	4,76		
	10000	4	10000			9					

♦ Analyses performed according to the COFRAC accreditation

Appendix 7 - Accuracy profile study: summarized results

(Food) Category 1		Meat products										
(Food) Type 1		Raw ground beef										
Sample Name	(Food) item	Level	Reference method result					Alternative method result				
			rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
7650-7654	Ground beef	1	360	340	360	390	350	310	340	320	320	410
7665-7669	Ground beef	1	470	270	340	350	370	310	450	400	390	290
7655-7659	Ground beef	2	6200	7600	5900	5500	5800	5700	5500	6200	6700	5100
7670-7674	Ground beef	2	6400	5500	5800	5500	5900	5900	6500	6500	5900	6500
7660-7664	Ground beef	3	95000	88000	98000	110000	80000	86000	120000	110000	120000	130000
7675-7679	Ground beef	3	120000	110000	130000	110000	93000	120000	110000	120000	130000	100000

(Food) Category 3		Seafood products										
(Food) Type 3		Raw fish fillet										
Sample Name	(Food) item	Level	Reference method result					Alternative method result				
			rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
8164-8168	Raw fish fillet	1	340	290	260	240	190	260	260	240	260	260
8179-8183	Raw fish fillet	1	370	280	260	250	430	260	280	390	270	300
8169-8173	Raw fish fillet	2	4900	4600	4300	4200	4200	4500	4100	4500	3000	3500
8184-8188	Raw fish fillet	2	4700	5500	4500	4500	4100	5200	5500	3600	5200	5400
8174-8178	Raw fish fillet	3	58000	56000	65000	59000	55000	59000	56000	69000	58000	59000
8189-8193	Raw fish fillet	3	78000	85000	74000	70000	68000	59000	70000	74000	76000	69000

(Food) Category 5		Egg products										
(Food) Type 5		Liquid egg products										
Sample Name	(Food) item	Level	Reference method result					Alternative method result				
			rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
8051-8055	Pasteurized liquid egg	1	330	330	420	320	400	420	400	340	350	470
8066-8070	Pasteurized liquid egg	1	210	340	270	450	410	260	370	400	400	410
8056-8060	Pasteurized liquid egg	2	5200	4600	4900	5300	4100	5500	5100	4700	5500	3900
8071-8075	Pasteurized liquid egg	2	4200	6100	5700	6100	4500	4000	5300	5500	5700	4700
8061-8065	Pasteurized liquid egg	3	83000	59000	84000	84000	90000	110000	69000	91000	78000	83000
8076-8080	Pasteurized liquid egg	3	120000	90000	91000	85000	110000	94000	100000	77000	83000	110000

(Food) Category 2		Dairy products										
(Food) Type 2		Pasteurised milk										
Sample Name	(Food) item	Level	Reference method result					Alternative method result				
			rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
7750-7754	Pasteurized milk	1	190	320	240	210	170	280	350	360	300	270
7765-7769	Pasteurized milk	1	320	330	330	340	330	200	300	270	290	360
7755-7759	Pasteurized milk	2	3600	3800	4500	4400	3700	4400	5000	4300	5200	4600
7770-7774	Pasteurized milk	2	4900	5100	5000	5000	6000	5500	5500	6200	6300	6500
7760-7764	Pasteurized milk	3	55000	67000	68000	75000	67000	68000	74000	84000	73000	75000
7775-7779	Pasteurized milk	3	97000	110000	100000	93000	94000	110000	100000	86000	99000	85000

(Food) Category 4		Vegetables										
(Food) Type 4		RTE grated carrots										
Sample Name	(Food) item	Level	Reference method result					Alternative method result				
			rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
8239-8243	Grated carrots	1	260	240	150	200	220	240	220	220	150	160
8254-8258	Grated carrots	1	160	290	180	200	250	200	160	160	160	220
8244-8248	Grated carrots	2	2500	2700	3700	3800	2800	3400	3800	3000	3400	3200
8259-8263	Grated carrots	2	2500	2600	3500	3200	3300	3500	5600	3500	2400	2800
8249-8253	Grated carrots	3	48000	63000	58000	45000	49000	57000	47000	56000	46000	58000
8264-8268	Grated carrots	3	44000	48000	45000	45000	44000	49000	56000	57000	44000	57000

Appendix 8 – Inclusivity / Exclusivity: raw data

INCLUSIVITY								
Year of testing	N°	Strain	Reference	Origin	PCA	V08-017 (VRBL 44,5°C) OR ISO 16649-2 (TBX)	CHROMID Coli 37°C	
					CFU/ plate (1ml -7)	CFU/plate (1ml -7)	CFU/ plate (1ml -7)	Description of the colonies
1998 Reference method: VRBL 44,5°C	1	<i>Escherichia coli</i>	Adria 1	Sausage	140	64/67	72/97	Pink
	2	<i>Escherichia coli</i>	Adria 2B	Sausage	180	58/73	58/71	Pink
	3	<i>Escherichia coli</i>	Adria 3A	Sausage	210	85/78	106/81	Pink
	4	<i>Escherichia coli</i>	Adria 6	Sausage	110	38/47	57/56	Pink
	5	<i>Escherichia coli</i>	Adria 9	Goose rillettes	130	73/70	77/68	Pink
	6	<i>Escherichia coli</i>	Adria 12	Raw poultry meat	240	68/91 (white colonies on TBX)	83/74	Blue
	7	<i>Escherichia coli</i>	Adria 13	Ground beef	200	49/61	53/79	Pink
	8	<i>Escherichia coli</i>	Adria 14	Raw milk	140	35/38	46/31	Pink
	9	<i>Escherichia coli</i>	Adria 15	Raw milk	170	32/43	30/32	Pink
	10	<i>Escherichia coli</i>	Adria 16	Raw milk	110	20/24	24/31	Pink
	11	<i>Escherichia coli</i>	Adria 17	Water	240	78/90	56/37	Pink
	12	<i>Escherichia coli</i>	Adria 18	Water	130	67/74	78/76	Pink
	13	<i>Escherichia coli</i>	Adria 19	Grated carrots	100	24/28	41/31	Pink
	14	<i>Escherichia coli</i>	Adria 20	Water	160	131/131(white colonies on TBX)	114/106	Blue
	15	<i>Escherichia coli</i>	Adria 21	Cured pork meat	150	132/87	21/16	Pink
	16	<i>Escherichia coli</i>	Adria 70	Ground meat	190	145/131	135/068	Pink
	17	<i>Escherichia coli</i>	CIP 54117	/	66	38/46	40/47	Pink
	18	<i>Escherichia coli</i>	CIP 54127	/	200	32/34	17/24	Pink
	19	<i>Escherichia coli</i>	ATCC 43888	Bovine faeces	210	75/74 (white colonies on TBX)	98/73	Blue
	20	<i>Escherichia coli</i>	CIP 7624	/	110	58/57	62/60	Pink
2006 TBX 44°C	21	<i>Escherichia coli</i>	Ad217	Meat product	35/41	2/3	3/3	Pink
	22	<i>Escherichia coli</i>	Ad218	Meat product	49/61	48/42	13/18	Pink
	23	<i>Escherichia coli</i>	Ad219	Meat product	21/19	11/9	125/14	Pink
	24	<i>Escherichia coli</i>	Ad228	Seafood product	24/16	22/17	17/30	Pink
	25	<i>Escherichia coli</i>	Ad94	Dairy product	30/20	24/21	25/25	Pink
	26	<i>Escherichia coli</i>	Adria E17	Dairy product	13/11	7/9	14/9	Pink
	27	<i>Escherichia coli</i>	Adria 144	Ready to reheat meal	15/11	13/14	16/16	Pink
	28	<i>Escherichia coli</i>	Adria142	Egg product	22/32	31/27	26/18	Pink
	29	<i>Escherichia coli</i>	Adria143	Egg product	23/29	9/18	27/25	Pink
	30	<i>Escherichia coli</i>	Ad222	Egg product	34/23	19/20	18/19	Pink

INCLUSIVITY								
Year of testing	N°	Strain	Reference	Origin	PCA	V08-017 (VRBL 44,5°C) OR ISO 16649-2 (TBX)	CHROMID Coli 37°C	
					CFU/ plate (1ml -7)	CFU/ plate (1ml -7)	CFU/ plate (1ml -7)	Description of the colonies
2018 TBX 44°C	31	<i>Escherichia coli</i> O103	Ad1743	Ground beef	58	80	44	Pink
	32	<i>Escherichia coli</i>	Ad1816	Raw milk cheese	50	37 (white colonies)	57	Blue
	33	<i>Escherichia coli</i>	Ad1828	Beef meat	61	50	64	Pink
	34	<i>Escherichia coli</i> O145	Ad1863	Ground beef	42	35	48	Pink
	35	<i>Escherichia coli</i> O26	Ad1864	Ground beef	47	34	50	Pink
	36	<i>Escherichia coli</i> O26	Ad1866	Raw milk cheese	41	47	39	Pink
	37	<i>Escherichia coli</i>	Ad1999	Chicken meat	29	36 (white colonies)	25	Grey
	38	<i>Escherichia coli</i> O26	Ad2827	Raw milk	35	39	37	Pink
	39	<i>Escherichia coli</i> O26	Ad2830	Raw ewe milk cheese	64	60	63	Pink
	40	<i>Escherichia coli</i> O26	Ad2832	Raw cow milk cheese	22	32	29	Pink
	41	<i>Escherichia coli</i> O103	Ad2839	Raw ewe milk	37	57	49	Pink
	42	<i>Escherichia coli</i> O145	Ad2841	Fermented milk	27	20	37	Pink
	43	<i>Escherichia coli</i> O26	Ad1861	Cheese	65	61	51	Pink
	44	<i>Escherichia coli</i> O103	Ad1862	Cheese	52	34	52	Pink
	45	<i>Escherichia coli</i> O26	Ad1742	Cheese	45	37	34	Pink
	46	<i>Escherichia coli</i>	A00C070	Chicken leg	24	39	54	Pink
	47	<i>Escherichia coli</i>	CIP53126	Unknown	25	25	73	Pink
	48	<i>Escherichia coli</i>	Ad1385	Sea water	59	51	57	Pink
	49	<i>Escherichia coli</i>	Ad1386	Well water	64	58 (white colonies)	61	Blue
	50	<i>Escherichia coli</i>	Ad1387	Drilling water	64	47	37	Pink

EXCLUSIVITY									
Year of analysis	N°	Strain		Reference	Origin	PCA	V08-017 (VRBL 44,5°C) OR ISO 16649-2 (TBX)	CHROMID Coli 37°C	
						CFU/plate (1ml -7)	CFU/plate (1ml -7)	CFU/plate (1ml -7)	Description of the colonies
1998 Reference method: VRBL 44,5°C	1	<i>Enterobacter</i>	<i>aerogenes</i>	CIP6086	/	30	0/0 (-6)	23/25	Blue
	2	<i>Enterobacter</i>	<i>aerogenes</i>	CIP 103659	/	90	53/37 (small)	79/55	White
	3	<i>Citrobacter</i>	<i>freundii</i>	Adria 23	Sausage	150	0/0 (-6)	82/90	Blue
	4	<i>Citrobacter</i>	<i>freundii</i>	Adria 24	Seafood cocktail	41	11/22 (small)	21/14	Dark blue
	5	<i>Klebsiella</i>	<i>oxytoca</i>	Adria 42	/	66	0/0 (-6)	51/55	Blue
	6	<i>Klebsiella</i>	<i>oxytoca</i>	CIP 7932	/	33	0/0 (-6)	127/123 (-6)	Dark blue
	7	<i>Serratia</i>	<i>liquefaciens</i>	Adria 26	Beetroot	60	0/0 (-6)	16/20	Blue
	8	<i>Serratia</i>	<i>liquefaciens</i>	Adria 81	Ham	30 (-5)	0/0 (-6)	0/0 (-5)	/
	9	<i>Shigella</i>	<i>flexneri</i>	CIP 8248	/	21	0/0 (-6)	37/39	White
	10	<i>Proteus</i>	<i>vulgaris</i>	Adria 43	Ham	30	0/0 (-6)	127/90 (-6)	White
	11	<i>Proteus</i>	<i>vulgaris</i>	Adria 56	Food product	79	0/0 (-6)	26/33	White
	12	<i>Erwinia</i>	<i>carotovora</i>	CIP 103762	Salad	8 (-6)	0/0 (-6)	0/0 (-6)	/
	13	<i>Erwinia</i>	<i>carotovora</i>	CIP 8283	Potatoes	52	0/0 (-6)	18/8	Small blue colonies
	14	<i>Bacillus</i>	<i>polymyxa</i>	CIP A39	/	32 (-6)	0/0 (-6)	0/0 (-6)	/
	15	<i>Enterococcus</i>	<i>faecalis</i>	Adria 25	Chicken leg	160	0/0 (-6)	0/0 (-6)	/
	16	<i>Staphylococcus</i>	<i>aureus</i>	Adria 501	Raw milk	92	0/0 (-6)	0/0 (-6)	/
	17	<i>Lactobacillus</i>	<i>plantarum</i>	A159	/	32 (-6)	0/0 (-6)	0/0 (-6)	/
	18	<i>Hafnia</i>	<i>alvei</i>	Adria 50	Ground meat	110	0/0 (-6)	47/59	Blue/grey
	19	<i>Candida</i>	<i>guilhermondii</i>	Adria 381	Bier	16 (-6)	0/0 (-5)	0/0 (-5)	/
	20	<i>Candida</i>	<i>liptolytica</i>	CIP 81663	/	43 (-6)	0/0 (-5)	0/0 (-5)	/
	21	<i>Salmonella</i>	Enteritidis	CIP 8297	/	220	115/108	120/87	White
	22	<i>Escherichia</i>	<i>vulneris</i>	Adria 151	Raw milk	62	0/0 (-6)	56/47	Pink/purple
	23	<i>Plesiomonas</i>	<i>shigelloides</i>	Add 673	Fish	53 (-6)	77/63 (-6)	60/53 (-6)	White/pink
2018 TBX 44°C	24	<i>Escherichia</i>	<i>vulneris</i>	Adria 127	Dairy product	16/15	0/0 (-7)	0/0 (-7)	/
	25	<i>Escherichia</i>	<i>vulneris</i>	Adria 132	Meat product	40/30	0/0 (-7)	0/0 (-7)	/
	26	<i>Escherichia</i>	<i>vulneris</i>	Adria 134	Meat product	45/44	0/0 (-7)	0/0 (-7)	/
	27	<i>Buttiauxella</i>	<i>agrestis</i>	Ad1328	Egg product	30 (-6)	0/0 (-6)	0/0 (-6)	/
	28	<i>Kluyvera</i>	<i>ascorbata</i>	Ad229	Fish	177 (-6)	0/0 (-6)	0/0 (-6)	/
	29	<i>Escherichia</i>	<i>fergusonii</i>	Ad1381	Water	184 (-6)	0/0 (-6)	0/0 (-6)	/
	30	<i>Escherichia</i>	<i>hermanii</i>	Ad464	Raw milk	248 (-6)	0/0 (-6)	0/0 (-6)	/
	31	<i>Escherichia</i>	<i>vulneris</i>	Ad2853	Dairy environment	156 (-6)	0/0 (-6)	0/0 (-6)	/