

**NF VALIDATION - Validation of alternative analysis methods
Application to the food industry**

**Summary report
according to the standard EN ISO 16140-2:2016**

Quantitative method

**NEOGEN® Petrifilm® *Enterobacteriaceae* Count Plate
(# 3M 01/06 – 09/97)
for the enumeration of *Enterobacteriaceae* in all human food
products, animal feed and production environmental samples**

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Preamble

- Protocols of validation:

- EN ISO 16140-1 and EN ISO 16140-2/A1 (September 2024): Microbiology of the food chain — Method validation
Part 1: Vocabulary.
Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method.
- Requirements regarding comparison and interlaboratory studies for implementation of the standard EN ISO 16140-2 (Version 12).

- Reference method:

- NF ISO 21528-2 (June 2017): Microbiology of food and animal feeding stuffs - Horizontal methods for the detection and enumeration of *Enterobacteriaceae* - Part 2: colony-count method

- Application scope:

- All human food products,
- Animal feed,
- Production environmental samples.

- Certification body:

- AFNOR Certification (<https://nf-validation.afnor.org/>).

Definitions

- **Method comparison study**

The method comparison study is the part of the validation process that is performed in the expert laboratory. It consists of four parts:

- A comparative study of the results of the reference method to the results of the alternative method in a variety of different items (naturally and/or artificially) contaminated samples (so-called relative trueness study).
- A comparative study of the results of the reference method to the results of the alternative method in artificially contaminated samples using replicates of a single item per category. The data are analyzed using the accuracy profile (AP) approach (so-called AP study).
- An inclusivity/exclusivity study of the alternative method.

- **Relative trueness study**

The relative trueness study is a comparative study between the results obtained by the reference method and the results of the alternative method.

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.

- **Accuracy profile study**

The accuracy profile study is a comparative study between the results obtained by the reference method and the results of the alternative method.

The accuracy profile is the 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 reference value.

- **Inclusivity and exclusivity study**

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.

- **Interlaboratory study**

The interlaboratory 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 aim of an interlaboratory study is to determine the variability of the results obtained in different laboratories using identical samples.

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Appendices

- **Initial validation study: interpretation of 2 successive dilutions**

Appendix A: Protocol of the alternative method

Appendix B: Protocol of the reference method

Appendix C: Artificial contamination

Appendix D: Relative trueness study - raw data

Appendix E: Relative trueness study - results and calculations

Appendix F: Accuracy profile study - raw data

Appendix G: Accuracy profile study - summarized results

Appendix H: Inclusivity and exclusivity study - raw data

- **Extension study: interpretation of 1 dilution and 1 plate**

Appendix I: Artificial contamination

Appendix J: Relative trueness study – raw data

Appendix K: Relative trueness study – results and calculations

Appendix L: Accuracy profile study - raw data

- **Extension study: automatic reading by PPRA**

Appendix M: Artificial contamination

Appendix N: Relative trueness study – raw data

Appendix O: Accuracy profile study - raw data

1. Introduction

The NEOGEN® Petrifilm® *Enterobacteriaceae* Count Plate (EB) was validated in September 1997 (Certificate number 3M 01/06 - 09/97) for human food products.

Date	Study	Expert Laboratory	Standards
September 1997	Initial validation	ADRIA	/
December 2001	Renewal study	ADRIA	/
June 2005	Renewal study	ADRIA	EN ISO 16140:2003
July 2009	Renewal study	ADRIA	EN ISO 16140:2003
April 2010	Extension study for animal food products	ADRIA	EN ISO 16140:2003
July 2013	Renewal study	ADRIA	EN ISO 16140:2003 EN ISO 16140/A1(2011)
February 2015	Extension study for production environmental samples	ADRIA	EN ISO 16140:2003 EN ISO 16140/A1(2011)
October 2017	Renewal study	ADRIA	EN ISO 16140-2/A1 (2016)
June 2021	Renewal study	ADRIA	ISO 16140-2 (2016)
April 2025	Extension studies for One Plate approach + extension PPRA	Laboratoire MICROSEPT	ISO 16140-2/A1 (2024)

All the results presented in this summary report were produced during the initial validation tests performed by ADRIA Développement within the framework of the brand NF VALIDATION according to the current requirements.

An extension study was carried out in 2025 with One plate approach. For this extension study, no testing was performed, but only a reinterpretation of data already validated using a single dilution for relative trueness study and accuracy profile study.

A second extension was carried out in parallel in 2025 for the implementation of an automatic reader Petrifilm Plate Reader Advanced. For this extension, a comparison between manual reading by a technician and automatic reading was carried out.

2. Protocols of the methods

2.1. Alternative method

2.1.1. Principle of the method

The NEOGEN® Petrifilm® *Enterobacteriaceae* Count (EB) Plate is a sample-ready- culture medium system which contains modified Violet Red Bile Glucose (VRBG) nutrients, a cold-water soluble gelling agent, and a tetrazolium indicator that facilitates colony enumeration. NEOGEN Petrifilm EB Plates are used for the enumeration of *Enterobacteriaceae* in the food and beverage industries. *Enterobacteriaceae* are oxidase-negative, Gram-negative rods that ferment glucose to produce acid and/or gas. On NEOGEN Petrifilm EB Plates, *Enterobacteriaceae* will appear as red colonies with yellow zones, red colonies with gas bubbles, or red colonies with yellow zones and gas bubbles

2.1.2. Protocols of the method

The flow diagram is provided in Appendix A.

2.1.3. Restrictions

There is no restriction.

2.2. Reference method

The reference method used for the renewal study is the NF ISO 21528-2 (June 2017) - Microbiology of food and animal feeding stuffs - Horizontal methods for the detection and enumeration of *Enterobacteriaceae* - Part 2: colony-count method.

The flow diagram is provided in Appendix B.

The reference method allows an incubation at 30°C or 37°C; only the incubation at 37°C was tested in this study.

2.3. Protocol applied during the initial validation and the renewal study

The minimum incubation time was applied during the validation studies: 22 h at 37°C ±1°C

3. Method comparison study initial validation study

3.1. Relative trueness study

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/>.

3.2. Number and nature of the samples

Seven categories were tested. The repartition per tested category and type is provided in Table 1. 171 samples were analyzed, leading to 144 exploitable results by both methods.

Table 1: number and nature of the samples analyzed

Category		Type		Number of analyzed samples	Number of interpretable results
1	Meat products	a	Poultry meat raw and cooked	7	7
		b	Pork, beef, veal raw and cooked	7	7
		c	Delicatessen	15	15
	Total			29	29
2	Dairy products	a	Milk and cream	5	5
		b	Cheeses	16	16
		c	Dairy desserts, milk powders	10	10
	Total			31	31
3	Seafood	a	Raw	10	6
		b	Cooked	5	5
		c	Ready to eat or to reheat	6	6
	Total			21	17
4	Vegetables	a	Fresh and frozen raw products	9	9
		b	Fresh and frozen seasoned raw products	5	5
		c	Cooked vegetables	5	5
	Total			19	19
5	Miscellaneous and Egg-based products	a	Composite food	5	5
		b	Pastries, chocolate	5	5
		c	Egg based products	6	6
	Total			16	16
6	Feed stuff	a	Fresh product	6	6
		b	Cooked or dehydrated product	5	5
		c	Raw materials	9	5
	Total			20	16
7	Production environmental samples	a	Surfaces	18	6
		b	Process water	10	5
		c	Dusts	7	5
	Total			35	16
All categories				171	144

3.2.1. Artificial contamination of the samples

Artificial contaminations were realized by spiking or seeding protocols. The inoculated strains, the contamination protocols, the injured protocols of the inoculated cells and the injury evaluation are provided in Appendix C. Injury efficiency was evaluated by enumerating the pure culture on selective and non-selective agars. The observed injury measurements vary from 0.4 to more than 3.40 log CFU/ml difference.

107 samples were naturally contaminated representing 74.3% of the samples, and 49 samples were artificially contaminated; 37 gave interpretable results.

3.2.2. Results

The raw data are provided in Appendix D.

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

The data are classified in three categories (See Table 2):

- 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 are 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 units less than the observed value in case of a lower than value. Similarly, any value greater than the upper limit should be amended by adding 1 log₁₀ unit. These results are not included in the calculations but also appear on the graphs.

Table 2: summary of the results of the relative trueness study

Category		Number of samples analyzed	Number of samples with < 4 CFU/plate	Number of samples below or above the detection limit	Number of samples with interpretable results
1	Meat products	29	0	0	29
2	Dairy products	31	0	0	31
3	Seafood	21	0	4	17
4	Vegetables	19	0	0	19
5	Miscellaneous and Egg-based products	16	0	0	16
6	Feed stuff	20	0	4	16
7	Production environmental samples	35	2	17	16
Total		171	2	25	144

The samples, which were not used in the calculations, are provided in Table 3.

Table 3: summary of the results of the relative trueness study

Sample number	Product	Reference method: ISO 21528-2	Alternative method: NEOGEN Petrifilm <i>Enterobacteriaceae</i>	Category	type
154	Raw material	<4,27	5,47	6	c
441	Raw material	<0,85	1,30*	6	c
3676	Dusts from egg industry	<1,00	<1,00	7	c
3677	Dusts	<1,00	<1,00	7	c
3841	Process water (peas)	<1,00	<1,00	7	b
3844	Wipe (peas industry)	1,30*	2,15	7	a
3845	Process water (peas)	<1,00	2,01	7	b
3904	Wipe (pastry industry)	2,00*	3,53	7	a
3905	Wipe (bechamel sauce)	<2,00	3,17	7	a
3906	Wipe (cheese industry)	<1,00	<1,00	7	a
3907	Process water (milk industry)	<2,00	<2,00	7	b
4007	Process water (fish industry)	<0,00	<0,00	7	b
4009	Process water (fish industry)	<2,00	3,63	7	b
4011	Swab after cleaning (fish industry)	<1,00	<1,00	7	a
4012	Swab after cleaning (fish industry)	<1,00	<1,00	7	a
4013	Wipe after cleaning (fish industry)	>4,13	>4,00	7	a
4015	Wipe after cleaning (fish industry)	<1,00	<1,00	7	a
4494	Wipe (dishwasher)	>4,18	>4,00	7	a
4495	Wipe (table)	>4,18	>4,00	7	a
4496	Wipe (cutter)	>4,18	>4,00	7	a
4497	Wipe (push-button)	>5,18	>5,00	7	a
6160	Raw fish	<2,00	3,69	3	a
6161	Raw fish	<3,00	4,18	3	a
6163	Poultry proteins dehydrated	<1,00	<1,00	6	c
6164	Poultry proteins dehydrated	<1,00	<1,00	6	c
6884	Hake fillet	<1,00	<1,00	3	a
6885	Cod fillet	<1,00	<1,00	3	a

3.2.3. Statistical interpretation

The calculations are provided in Appendix E.

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

The Figures 1 to 7 show the data plotted for the different studied categories, and the Figure 8 for all the products.

Figure 1: scatter plots of reference-method versus alternative-method results for meat product

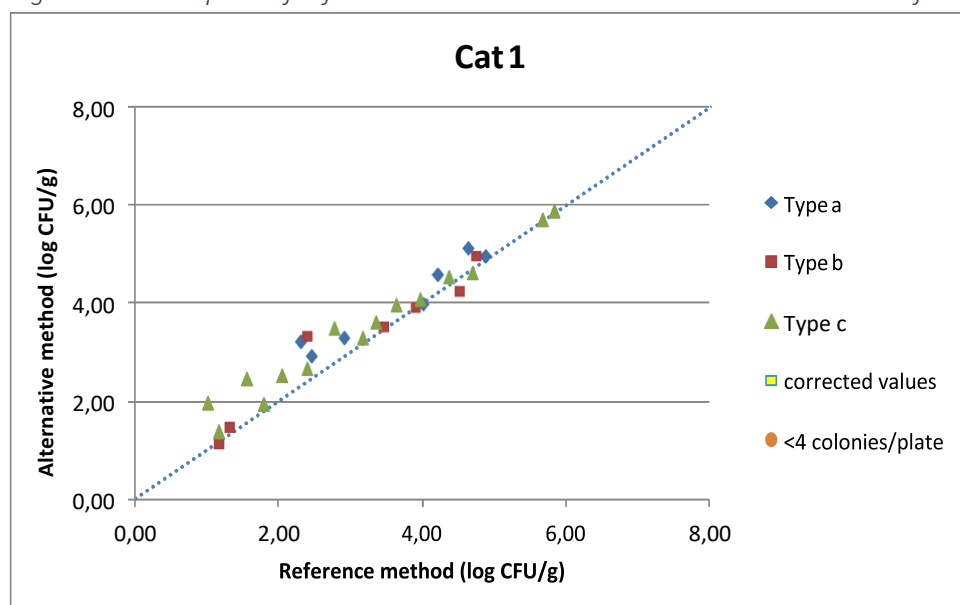


Figure 2: scatter plots of reference-method versus alternative-method results for dairy product

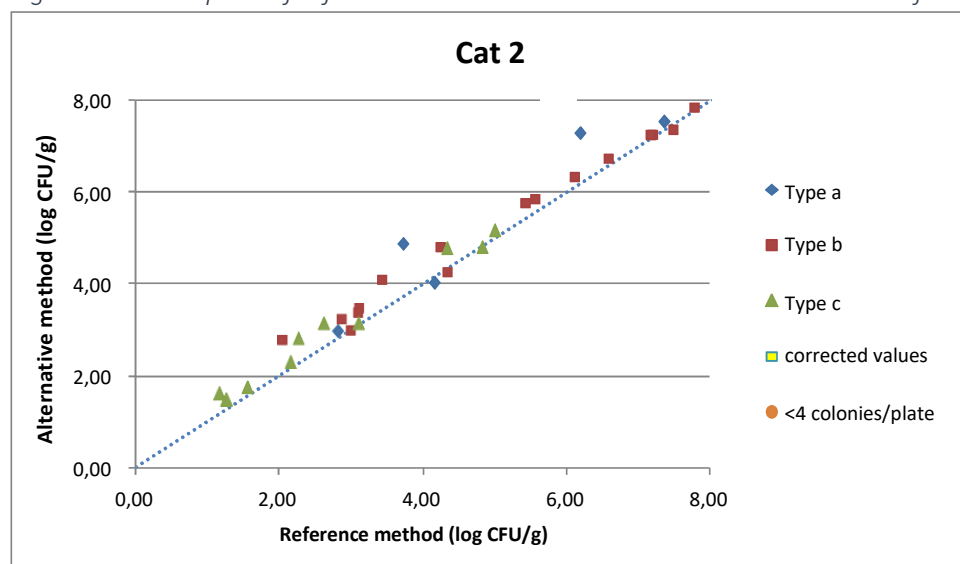


Figure 3: scatter plots of reference-method versus alternative-method results for seafood

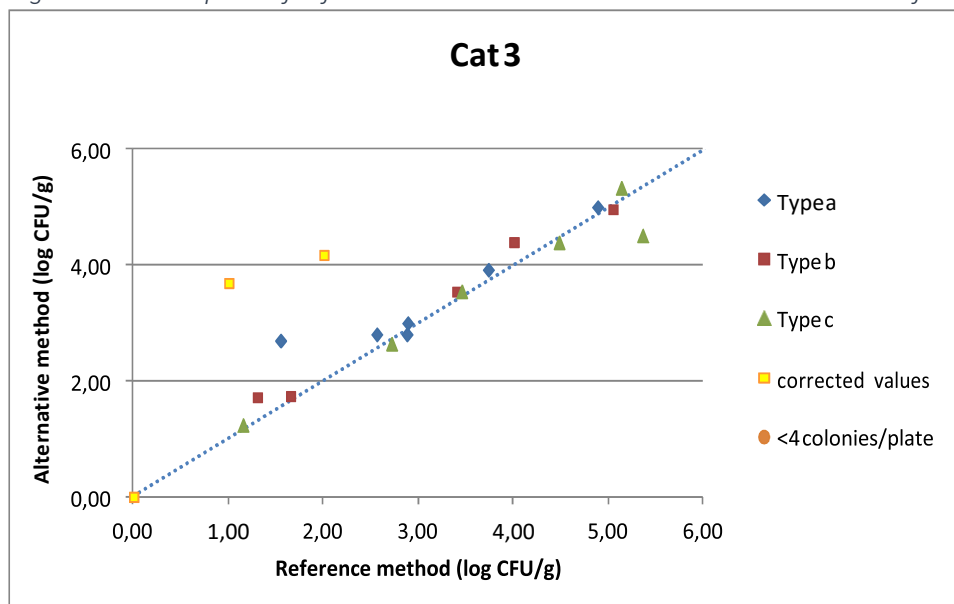


Figure 4: scatter plots of reference-method versus alternative-method results for vegetables

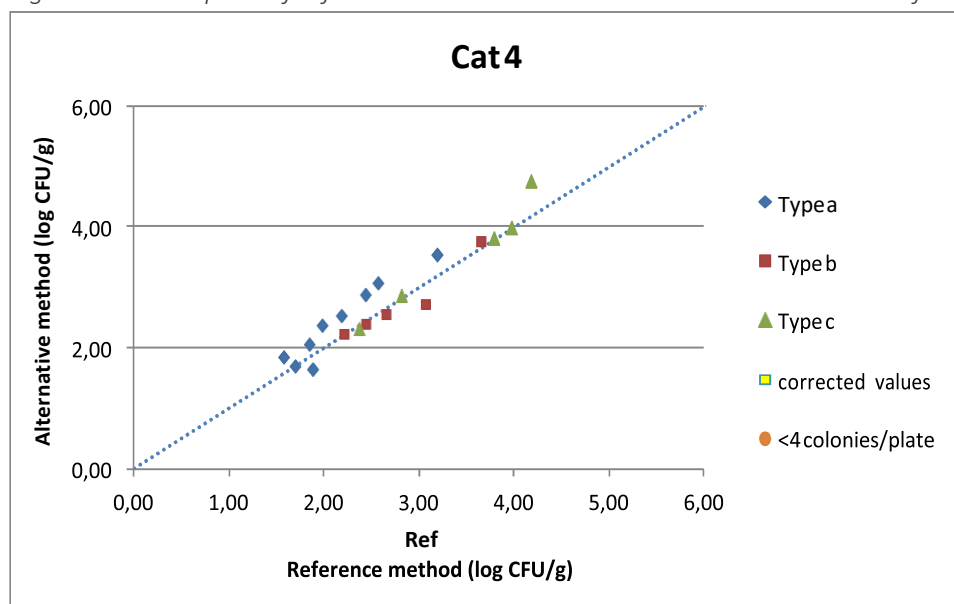


Figure 5: scatter plots of reference-method versus alternative-method results for miscellaneous and egg-based products

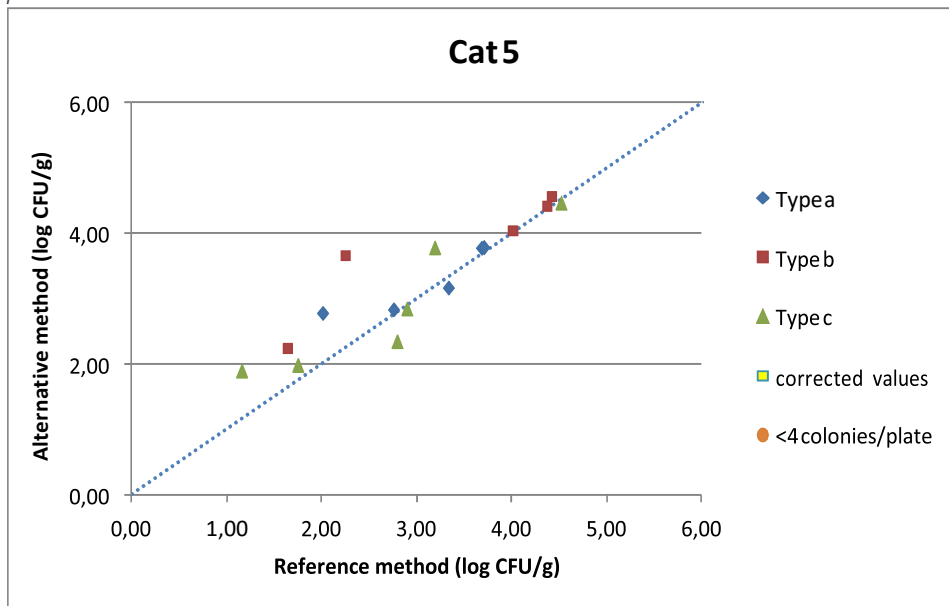


Figure 6: scatter plots of reference-method versus alternative-method results for feed stuff

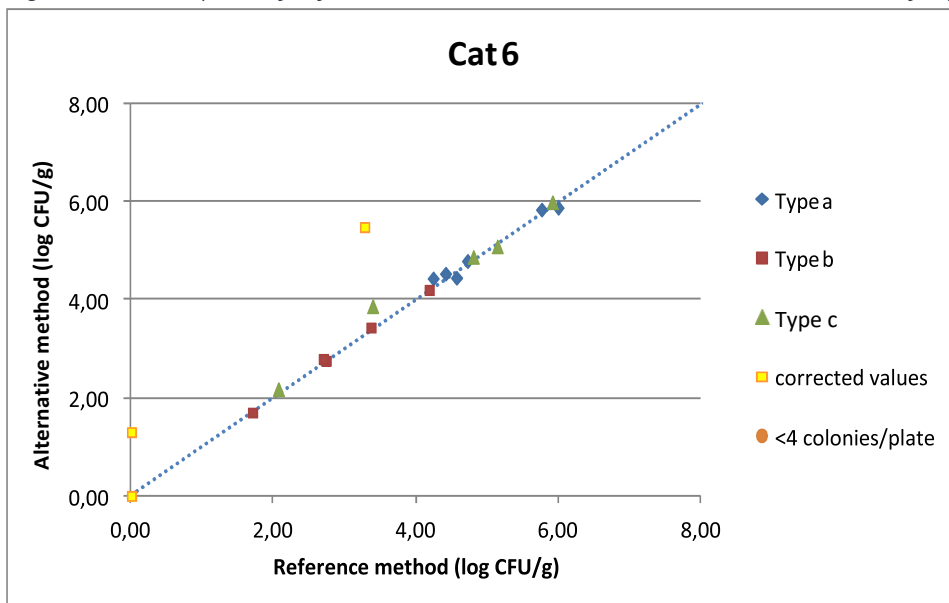


Figure 7: scatter plots of reference-method versus alternative-method results for environmental samples

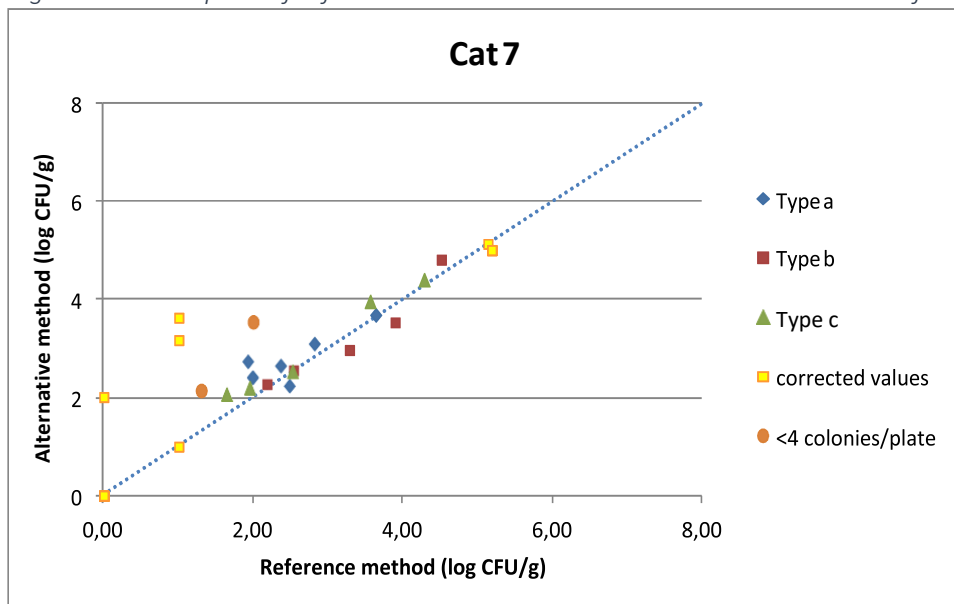
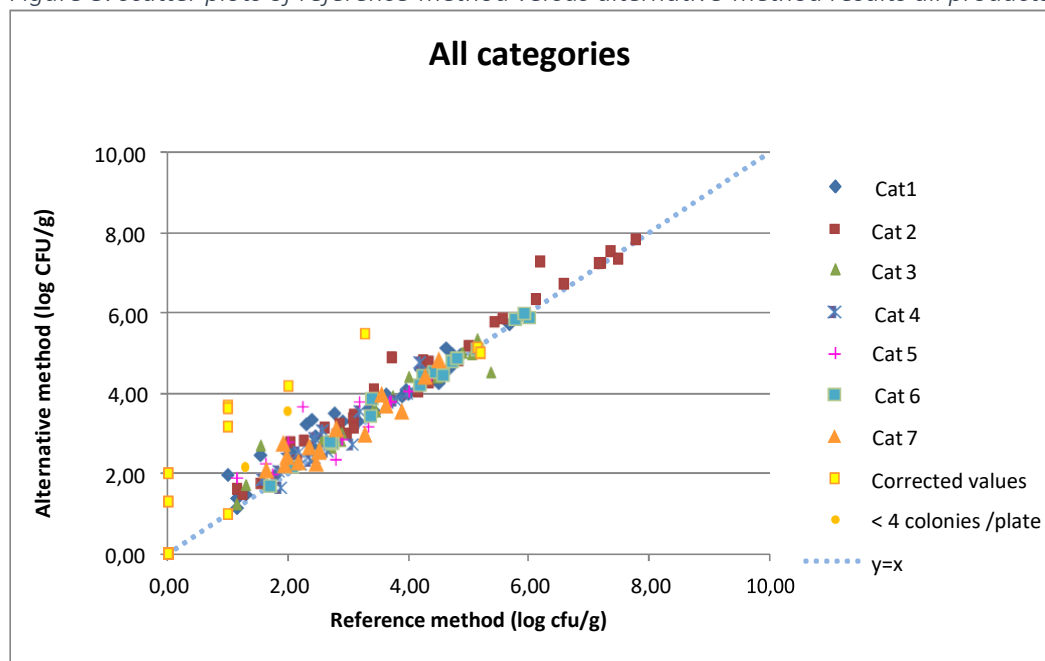


Figure 8: scatter plots of reference-method versus alternative-method results all products



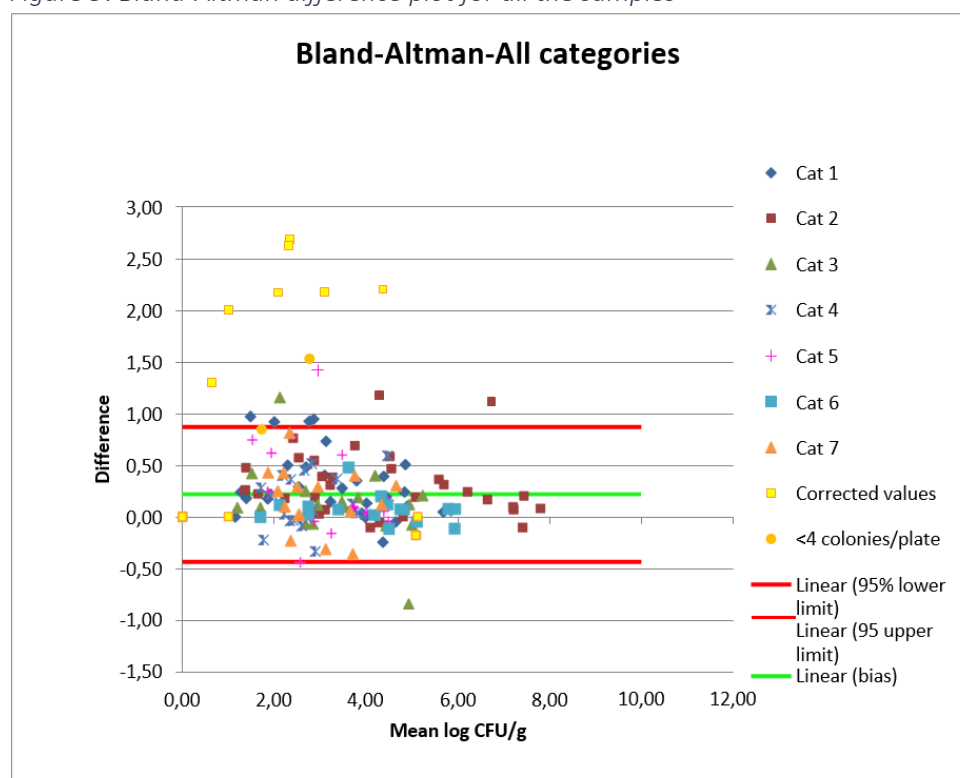
The calculated values for Average difference and Standard deviation differences per category are provided in Table 4.

Table 4: calculated values of the relative trueness study per category

	Category	n	D (bias)	SD	Linear bias	95% lower limit	95% upper limit
1	Meat products	29	0,31	0,32	0,31	-0,36	0,99
2	Dairy products	31	0,32	0,31	0,32	-0,33	0,96
3	Seafood products	17	0,12	0,38	0,12	-0,69	0,94
4	Vegetables	19	0,14	0,25	0,14	-0,40	0,69
5	Miscellaneous and Egg- based products	16	0,26	0,46	0,46	-0,55	1,46
6	Feed stuff	16	0,07	0,14	0,07	-0,23	0,37
7	Production environmental samples	16	0,16	0,30	0,16	-0,51	0,83
	All categories	144	0,22	0,33	0,22	-0,43	0,87

SD: Standard deviation of differences.

Figure 9: Bland-Altman difference plot for all the samples



The average difference observed varies from 0.07 log to 0.32 log.

Samples for which the difference between the result observed with the reference and the alternative methods is above or lower than the limits are listed in Table 5.

When the difference observed between the reference and the alternative methods were above or lower than the 95 % confidence limit of agreement, the tests described in the reference method were applied on the colonies enumerated on the Petrifilm tests. The information concerning identification and/or confirmation, is provided in Table 5.

Table 5: analysis of the data out of the confidence limits

Classification of data	Category	Type	N° Sample	Product	Reference method	Alternative method	Values before correction (Ref/Alt)	Mean	Difference	Lower / Upper limits	Comments	Result before and after confirmation (VRBG/Petrifilm)
Interpretable results by both methods	1	a	210	Poultry meat	2,30	3,23	/	2,76	0,93	-0,43/ 0,87	Colonies confirmed for both methods	2,30-2,30/3,22-3,00
	1	b	212	Brain	2,39	3,34	/	0,95	0,95		Colonies confirmed for both methods	2,39-2,39/3,33-3,33
	1	c	125	Rillettes	1,54	2,46	/	0,92	0,92		Colonies confirmed for both methods	1,54-1,54/2,46-2,46
	1	c	129	Smoked chest	1,00	1,97	/	0,97	0,97		Colonies confirmed for both methods	1,00-1,00/1,97-1,97
	2	a	106b	Cream	6,18	7,29	/	1,12	1,12		Colonies confirmed for both methods	6,18-6,18/7,29-7,25
	2	a	119	Raw milk	3,71	4,89	/	1,18	1,18		Presence of characteristic colonies in VRBG not confirmed, Colonies confirmed for Petrifilm	4,28-3,71/4,89-4,79
	3	a	124	Sardines	1,55	2,70	/	2,12	1,16		Colonies confirmed for both methods	2,28-1,55/2,70-2,14
	3	c	144	Smoked salmon	5,36	4,51	/	4,93	-0,85		Enumeration in favor of the reference method	5,36-5,36/4,51-4,51
	5	b	122	Pastry	2,24	3,66	/	2,95	1,42		Colonies on Petrifilm not confirmed as <i>Enterobacteria</i> , lack of specificity of the Petrifilm method	2,24-2,24/3,66-<2,04

Values in green: differences in favor of the alternative method. Values in red: differences in favor of the reference method. Values in black: equivalent enumeration observed with both methods.

Classification of data	Category	Type	N° Sample	Product	Reference method	Alternative method	Values before correction (Ref/Alt)	Mean	Difference	Lower / Upper limits	Comments	Result before and after confirmation (VRBG/Petrifilm)
CFU/plate	7	a	3904	Wipe (pastry industry)	2,00	3,53	/	2,77	1,53		Sample inoculated with <i>Citrobacter farmeri</i> , less colonies in VRBG	
or > the quantification limit	3	a	6160	Raw fish	1,00	3,69	<2,00	2,35	2,69		Characteristic colonies in VRBG plates, oxidase +, colonies from Petrifilm identified as <i>Aeromonas hydrophila</i>	3,62-<2,00/3,69-<2,00
	3	a	6161	Raw fish	2,00	4,18	<3,00	3,09	2,18		Characteristic colonies in VRBG plates, oxidase +, colonies from Petrifilm identified as <i>Aeromonas hydrophila</i>	4,26-<3,00/4,18-<3,00
	6	c	154	Raw material	3,27	5,47	<4,27	4,37	2,20		Characteristic colonies in VRBG plates, not confirmed	5,38-<4,27/5,47-not tested
	6	c	441	Raw material	0,00	1,30	<0,85	0,65	1,30		Same result with both method	<1,00-<1,00/1,30-not tested
	7	a	3905	Wipe (bechamel sauce)	1,00	3,17	<2,00	2,09	2,17		Sample inoculated with <i>Serratia fonticola</i> , no growth in VRBG	<2,00-<2,00/not tested (inoculation)
	7	b	3845	Process water (peas)	0,00	2,01	<1,00	1,01	2,01		Sample inoculated with <i>Escherichia coli</i> , no growth in VRBG	<2,00-<2,00/not tested (inoculation)
	7	b	4009	Process water (fish industry)	0,00	3,63	<1,00	1,82	3,63		Characteristic colonies in VRBG plates, oxidase +	3,67-<2,00/3,63-not tested

Values in green: differences in favor of the alternative method. Values in red: differences in favor of the reference method. Values in black: equivalent enumeration observed with both methods.

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

3.2.4. Discordant result

The samples are classified in three categories (See Table 6).

Table 6: classification of the samples

		Number of samples
		24 h
Interpretable results by both methods	< LCL	1
	> UCL	8
	Total	9
<4 CFU/plate	< LCL	0
	> UCL	1
	Total	1
< or > the quantification limit	< LCL	0
	> UCL	7
	Total	7
Total < LCL		1
Total >UCL		16
Total		17

For 10 samples, the difference is clearly in favor of the alternative method (confirmatory tests positive or inoculated samples). The best performances of the alternative method could be due to the fact that NEOGEN Petrifilm *Enterobacteriaceae* Count (EB) uses a cold-water soluble gelling agent while the ISO 21528-2 method uses a melted media maintained at 44-47°C before pouring in the plates, which can have an injury effect on some *Enterobacteria* strains.

For 3 samples (6160, 6161 and 122), the enumeration obtained with the alternative method is higher than the enumeration obtained with the ISO method but the enumerated colonies were not confirmed as *Enterobacteria* using the tests described in the reference method.

For 2 samples (154 and 4009), no test was applied on the colonies enumerated on Petrifilm; it is thus impossible to know if the enumerated colonies were really *Enterobacteria*.

For one sample (144), the enumeration was slightly higher with the reference method.

For one sample (441), the enumerations were similar with both methods (Ref.: < 1.00; Alt.: 1.30).

3.2.5. Conclusion

The relative trueness study of the alternative method is satisfying. The NEOGEN Petrifilm *Enterobacteriaceae* Count Plate method is reliable when compared to the ISO 21528-2 method.

3.3. Accuracy profiles

3.3.1. Matrices

Seven matrix/strain pairs were tested. A minimum of one type per category and two different batches were selected, using six samples per type. Two samples were contaminated at a low level, two at intermediate level, and two at a high level. For each sample, five replicates (five different test portions) were tested. In the end, thirty samples were tested per matrix type.

The tested categories, types, matrix and inoculated strains are provided in Table 7.

Table 7: matrix – strain pairs tested for the accuracy profile study

Category		Type	Matrix	Inoculated strain	Origin	Inoculation level (CFU/g)
1	Meat products	b: Pork, beef, veal raw and cooked	Pork pâté	<i>Enterobacter agglomerans</i> 135	Pork liver	300 10 000 100 000
2	Dairy products	a: Milk and cream	Pasteurized milk	<i>Hafnia alvei</i> 130	Raw milk	
3	Seafood	c: Raw	Salmon fillet	<i>Klebsiella oxytoca</i> 179	RTE	
4	Vegetables	a: Fresh and frozen raw products	Green beans	<i>Escherichia hermani</i> Ad1457	Spinach	
5	Miscellaneous and egg-based products	c: Egg based products	Whole liquid egg	<i>Serratia liquefaciens</i> 26	Egg product	
6	Feed stuff	b: Cooked or dehydrated products	Pâté for cat	<i>Citrobacter braakii</i> Ad833	Beef meat	
7	Production environmental samples	b: Process water (Batch 1: zucchini and split peas Batch 2: pilchards)	Process water	<i>Escherichia coli</i> 93	Dish	

3.3.2. Calculation and interpretation

The raw data are provided in Appendix F. The summary tables (in log CFU/g) and calculations are provided in Appendix G. The statistical results and the accuracy profiles are provided Figure 12.

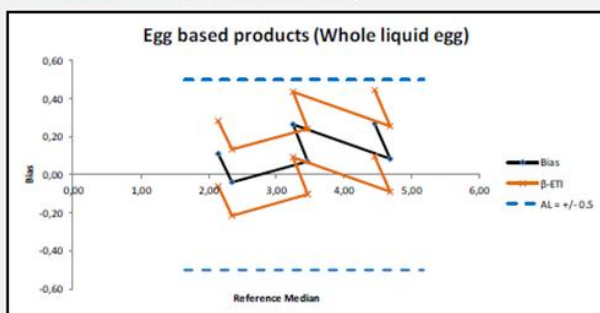
The calculations were done using the AP Calculation Tool MCS (Clause 6-1-3-3 calculation and interpretation of accuracy profile study) ver 31-07-2018 available on <http://standards.iso.org/iso/16140>.

The lower and upper β .ETI are within the acceptability limits for all the matrix/strain pairs tested. The acceptability limits are fixed at + 0.5 log and - 0.5 log for all the matrices tested.

Figure 10: accuracy profiles



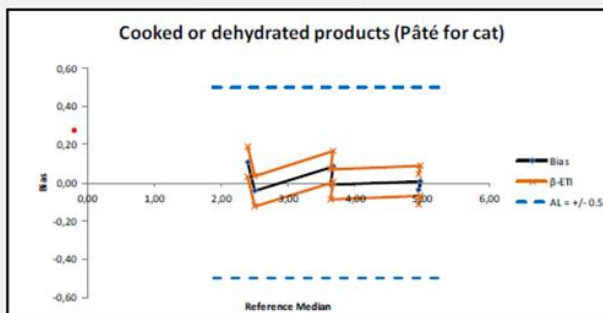
(Food) Category	Miscellaneous and egg products
(Food) Type	Egg based products (Whole)



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
6428-6432	2.15	0.109	-0.064	0.282	YES	YES
6857-6861	2.34	-0.041	-0.215	0.132	YES	YES
5093-5097	3.45	0.069	-0.104	0.242	YES	YES
5118-5122	3.26	0.263	0.090	0.436	YES	YES
5103-5107	4.68	0.082	-0.061	0.255	YES	YES
5128-5132	4.46	0.270	0.097	0.443	YES	YES

	Reference method	Alternative method	SD repeatability of reference method ≤ 0.125	Final AL
SD Repeatability	0.062	0.120	YES	+/- 0.500

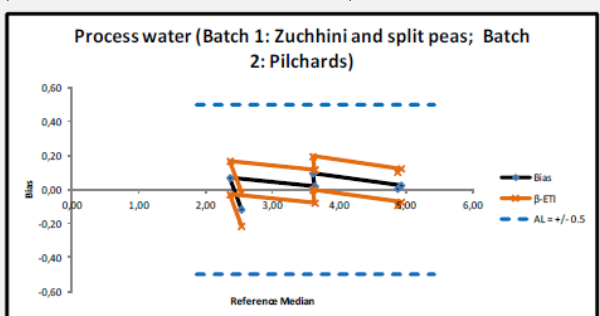
(Food) Category	Feed
(Food) Type	Cooked or dehydrated products



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
4758-4762	2.40	0.107	0.028	0.187	YES	YES
4773-4777	2.51	-0.043	-0.122	0.037	YES	YES
4763-4767	3.67	0.084	0.004	0.163	YES	YES
4778-4782	3.63	-0.010	-0.090	0.069	YES	YES
4768-4772	4.97	0.009	-0.070	0.089	YES	YES
4783-4787	4.94	-0.036	-0.115	0.043	YES	YES

	Reference method	Alternative method	SD repeatability of reference method ≤ 0.125	Final AL
SD Repeatability	0.079	0.055	YES	+/- 0.500

(Food) Category	Environmental samples
(Food) Type	Process water (Batch 1:



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
5183-5187	2.83	-0.117	-0.215	-0.018	YES	YES
5208-5212	2.36	0.070	-0.029	0.168	YES	YES
5188-5192	3.63	0.020	-0.078	0.118	YES	YES
5213-5217	3.60	0.097	-0.001	0.195	YES	YES
5198-5202	4.92	0.025	-0.073	0.123	YES	YES
5223-5227	4.87	0.006	-0.082	0.104	YES	YES

	Reference method	Alternative method	SD repeatability of reference method ≤ 0.125	Final AL
SD Repeatability	0.079	0.068	YES	+/- 0.500

3.3.3. Conclusion

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

3.4. Inclusivity / Exclusivity study

3.4.1. Protocols

Inclusivity: 23 target strains were tested for the initial validation study. The study was completed by testing 27 target strains in 2017. Each test was performed once with the alternative method, the reference method and a non-selective agar. The inoculation level shall obtain a countable number on the plate.

Exclusivity: 13 non-target strains were tested for the initial validation study. The study was completed by testing 17 strains in 2017. The pure culture was grown in a suitable non-selective broth under optimal growth conditions for at least 24 h and diluted at an appropriate level before testing. Each test was performed once with the alternative method, the reference method and a non-selective agar. The inoculation level shall obtain a countable number on the plate.

3.4.2. Results

The raw data are provided in Appendix H.

Inclusivity: among the 50 strains tested; one strain (*Erwinia carotovora* CIP 103762) did not grow on VRBG and NEOGEN Petrifilm plates. The second *Erwinia carotovora* (CIP 8289) grew on NEOGEN Petrifilm plates but did not grow on VRBG plates.

Exclusivity: 30 strains were tested; 4 strains gave typical colonies by both methods:

- *Aeromonas hydrophila* CIP 5750,
- *Aeromonas bestiarum* CIP 7430,
- *Xanthamonas maltophilia* CIP 6077,
- *Plesiomonas shigelloides* Ad673.

3.4.3. Conclusion

Similar results were observed with the reference and the alternative methods.

The NEOGEN Petrifilm *Enterobacteriaceae* Count Plate is specific and selective.

3.5. Practicability

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

Criteria to be control	Communication on criteria	Expert lab checking procedure
Storage conditions	Store the unopened NEOGEN Petrifilm pouches at frozen or refrigerated temperature less than or equal to 8°C (46°F)	Mentioned on the instruction for use
Shelf-life and modalities of utilization after first use	Store resealed pouches in a cool dry place for no longer than four weeks	Mentioned in the kit insert
Time to result	24 h $\pm$ 2 h	Mentioned in the kit insert
Common step with the reference method		Initial suspensions and dilutions

3.6. Method comparison study conclusion

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

- 139 samples were tested in the relative trueness study, 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.

4. Interlaboratory study

4.1. Organization of the study

The inter-laboratory study was run according to the ISO 16140 (2003) in 2001 for the renewal study. The study was run on pasteurized skimmed milk inoculated with *Escherichia coli* 94.

15 collaborators participated to the study; the results from 14 laboratories were kept for interpretation (late reception for one laboratory).

4.2. Analysis results

4.2.1. Results obtained by the expert Lab.

The results obtained by the expert Lab. are the following (See Table 8).

Table 8: contamination levels

Level	Reference method		Alternative method	
	Rep 1	Rep 2	Rep 1	Rep 2
L0	< 1	< 1	< 1	< 1
L1	2.18	2.26	2.26	2.15
L2	3.18	3.30	3.23	3.20
L3	4.11	4.23	4.08	4.15

4.2.2. Results obtained by the collaborators

Samples were sent to 15 collaborators.

A summary of the test results is given in Table 9 (CFU/ml) and Table 10 (log CFU/ml).

Table 9: summary of data (CFU/ml)

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	<1	<1	<1	<1	300	260	120	220	1800	1900	2000	2900	21000	15000	17000	27000
B	<1	<1	<1	<1	250	210	260	100	1200	1300	2100	1300	24000	16000	19000	23000
C	<1	<1	<1	<1	180	160	110	150	1700	1500	2100	1200	15000	14000	21000	11000
D	<1	<1	<1	<1	150	140	220	210	1400	1300	1500	2400	13000	13000	14000	14000
E	<1	<1	<1	<1	190	164	150	130	1700	1800	1300	1600	15000	22000	14000	17000
F	<1	<1	<1	<1	140	190	160	140	1900	1700	2100	1800	23000	20000	21000	19000
G	<1	<1	<1	<1	180	240	160	160	2300	2600	2100	2000	12000	15000	13000	12000
I	<1	<1	<1	<1	130	150	140	220	1200	1300	2200	1400	13000	12000	18000	20000
J	<1	<1	<1	<1	130	130	100	160	1300	1400	2100	2200	15000	14000	20000	21000
K	<1	<1	<1	<1	200	290	210	180	2100	2300	1800	1500	17000	14000	27000	14000
L	<1	<1	<1	<1	220	230	190	260	2200	2400	1700	2400	25000	23000	23000	13000
M	<1	<1	<1	<1	160	170	160	100	2000	2700	1400	2700	20000	12000	15000	17000
N	<1	<1	<1	<1	180	280	230	200	1700	1700	1600	1500	14000	11000	22000	16000
O	<1	<1	<1	<1	210	190	210	230	1400	2000	1100	900	16000	7000	9100	9400

Table 10: summary of data (CFU/ml)

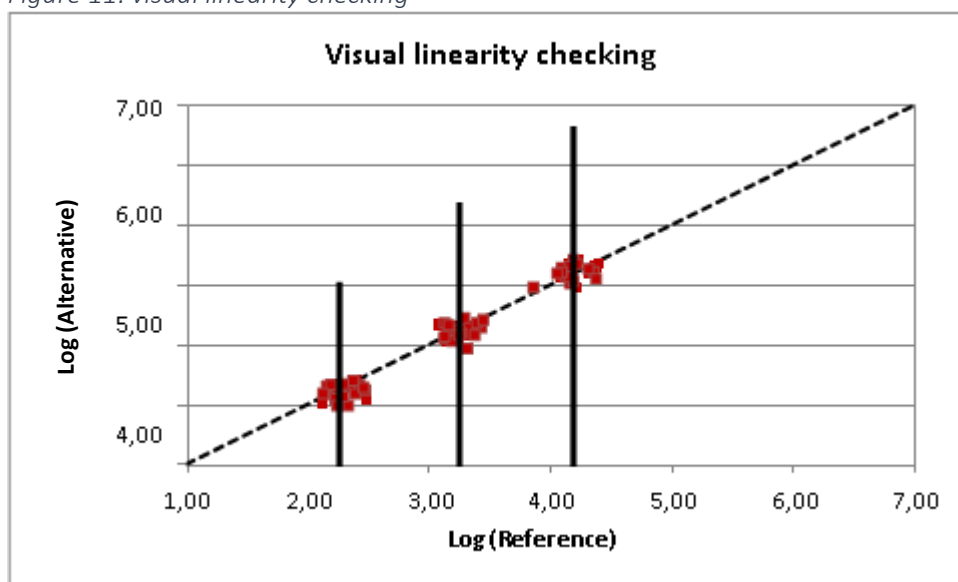
Collaborator	Level 0				Level 1				Level 2				Level 3			
	Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method	
A	<0,00	<0,00	<0,00	<0,00	2,477	2,415	2,079	2,342	3,255	3,279	3,301	3,462	4,322	4,176	4,230	4,431
B	<0,00	<0,00	<0,00	<0,00	2,398	2,322	2,415	2,000	3,079	3,114	3,322	3,114	4,380	4,204	4,279	4,362
C	<0,00	<0,00	<0,00	<0,00	2,255	2,204	2,041	2,176	3,230	3,176	3,322	3,079	4,176	4,146	4,322	4,041
D	<0,00	<0,00	<0,00	<0,00	2,176	2,146	2,342	2,322	3,146	3,114	3,176	3,380	4,114	4,114	4,146	4,146
E	<0,00	<0,00	<0,00	<0,00	2,279	2,215	2,176	2,114	3,230	3,255	3,114	3,204	4,176	4,342	4,146	4,230
F	<0,00	<0,00	<0,00	<0,00	2,146	2,279	2,204	2,146	3,279	3,230	3,322	3,255	4,362	4,301	4,322	4,279
G	<0,00	<0,00	<0,00	<0,00	2,255	2,380	2,204	2,204	3,362	3,415	3,322	3,301	4,079	4,176	4,114	4,079
I	<0,00	<0,00	<0,00	<0,00	2,114	2,176	2,146	2,342	3,079	3,114	3,342	3,146	4,114	4,079	4,255	4,301
J	<0,00	<0,00	<0,00	<0,00	2,114	2,114	2,000	2,204	3,114	3,146	3,322	3,342	4,176	4,146	4,301	4,322
K	<0,00	<0,00	<0,00	<0,00	2,301	2,462	2,322	2,255	3,322	3,362	3,255	3,176	4,230	4,146	4,431	4,146
L	<0,00	<0,00	<0,00	<0,00	2,342	2,362	2,279	2,415	3,342	3,380	3,230	3,380	4,398	4,362	4,362	4,114
M	<0,00	<0,00	<0,00	<0,00	2,204	2,230	2,204	2,000	3,301	3,431	3,146	3,431	4,301	4,079	4,176	4,230
N	<0,00	<0,00	<0,00	<0,00	2,255	2,447	2,362	2,301	3,230	3,230	3,204	3,176	4,146	4,041	4,342	4,204
O	<0,00	<0,00	<0,00	<0,00	2,322	2,279	2,322	2,362	3,146	3,301	3,041	2,954	4,204	3,845	3,959	3,973

4.3. Calculation and interpretation

4.3.1. Visual linearity checking

The Figure 11 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 11: visual linearity checking



4.3.2. Accuracy profil 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 11.

These values are collected in a graphical representation together with the acceptability limits (AL). This representation is given Figure 12.

Table 11: summary of the statistical test

Accuracy profile

Study Name

Date

Coordinator

Tolerance probability (beta)

Acceptability limit in log (lambda)

NEOGEN Petrifilm *Enterobacteriaceae*

80%80%80%

0,500,500,50

FAUX

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.

Alternative method

Reference method

Levels	Low	Medium	High
Target value	2,274	3,238	4,191
Number of participants (K)	14	14	14
Average for alternative method	2,224	3,244	4,223
Repeatability standard deviation (sr)	0,122	0,110	0,104
Between-labs standard deviation (sL)	0,031	0,052	0,071
Reproducibility standard deviation (sR)	0,126	0,122	0,126
Corrected number of dof	26,745	25,758	23,978
Coverage factor	1,339	1,343	1,349
Interpolated Student t	1,314	1,315	1,318
Tolerance interval standard deviation	0,1283	0,1245	0,1291
Lower TI limit	2,056	3,080	4,053
Upper TI limit	2,393	3,408	4,393
Bias	-0,050	0,006	0,032
Relative Lower TI limit (beta = 80%)	-0,218	-0,158	-0,138
Relative Upper TI limit (beta = 80%)	0,119	0,169	0,203
Lower Acceptability Limit	-0,50	-0,50	-0,50
Upper Acceptability Limit	0,50	0,50	0,50

Low	Medium	High
14	14	14
2,274	3,238	4,191
0,065	0,045	0,102
0,088	0,095	0,070
0,109	0,105	0,124
18,466	15,645	23,988

FAUX

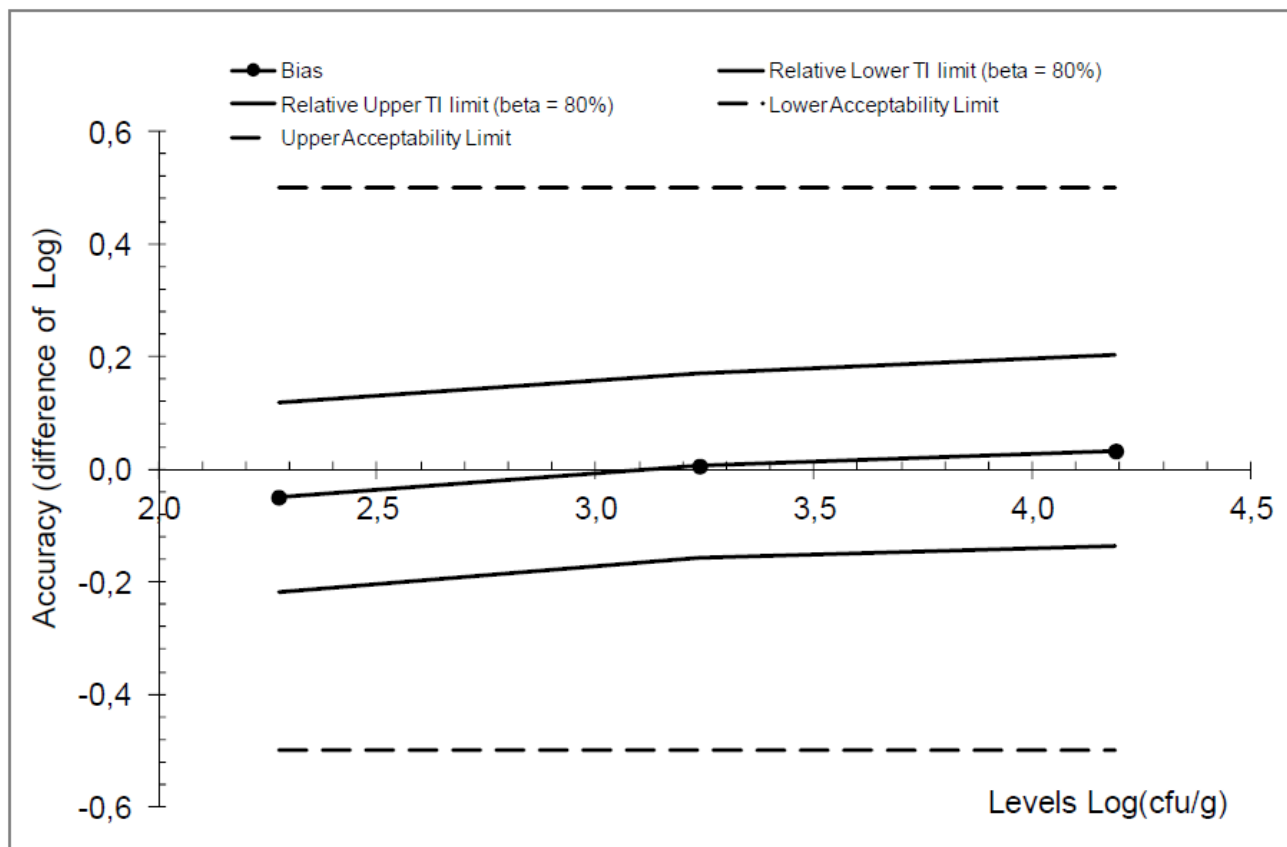
FAUX

New acceptability limits may be based on reference method pooled variance

Pooled repro standard dev of reference

0.113

Figure 12: 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.

4.4. Conclusion of the interlaboratory study

The alternative method is equivalent to the reference method.

5. General conclusion of the validation study

The method comparison study conclusions are:

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

- 171 samples were tested in the relative trueness study providing 144 interpretable results by both the reference and the alternative method, 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/A1 (2024).
- The inclusivity and exclusivity testing shows satisfying results.

The inter-laboratory study conclusions are:

- The data interpretations were done according to the EN ISO 16140- 2/A1 (2024). 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 NEOGEN Petrifilm *Enterobacteriaceae* is considered equivalent to the reference method.

6. Extension study: interpretation with one plate and one dilution (2025)

6.1. Relative trueness study

6.1.1. Number and nature of the samples

In total, seven food categories were tested.

A total of 171 samples were thus analyzed and 144 were exploited.

The distribution of the samples is presented in Table 12.

Table 12: number and nature of the samples analyzed

Category		Type		Number of analyzed samples	Number of interpretable results
1	Meat products	a	Poultry meat raw and cooked	7	7
		b	Pork, beef, veal raw and cooked	7	7
		c	Delicatessen	15	15
	Total			29	29
2	Dairy products	a	Milk and cream	5	5
		b	Cheeses	16	16
		c	Dairy desserts, milk powders	10	10
	Total			31	31
3	Seafood	a	Raw	10	6
		b	Cooked	5	5
		c	Ready to eat or to reheat	6	6
	Total			21	17
4	Vegetables	a	Fresh and frozen raw products	9	9
		b	Fresh and frozen seasoned raw products	5	5
		c	Cooked vegetables	5	5
	Total			19	19
5	Miscellaneous and Egg-based products	a	Composite food	5	5
		b	Pastries, chocolate	5	5
		c	Egg based products	6	6
	Total			16	16
6	Feed stuff	a	Fresh product	6	6
		b	Cooked or dehydrated product	5	5
		c	Raw materials	9	5
	Total			20	16
7	Production environmental samples	a	Surfaces	18	6
		b	Process water	10	5
		c	Dusts	7	5
	Total			35	16
All categories				171	144

6.1.2. Artificial contamination of the samples

Artificial contaminations were realized by spiking or seeding protocols. The inoculated strains, the contamination protocols, the injured protocols of the inoculated cells and the injury evaluation are provided in Appendix I. Injury efficiency was evaluated by enumerating the pure culture on selective and non-selective agars. The observed injury measurements vary from 0.4 to more than 3.40 log CFU/ml difference.

107 samples were naturally contaminated representing 74.3% of the samples, and 49 samples were artificially contaminated; 37 gave interpretable results.

6.1.3. Results

The data are classified in three categories:

- 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 in order to have a more precise result. These results are not included in the calculation.
- Results below or above the quantification limit: according to the ISO 16140- 2/A1:2024, 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 units less than the observed value in case of a lower than value. Similarly, any value greater than the upper limit should be amended by adding 1 log unit. These results are not included in the calculations but also appear on the graphs.

Raw results are shown in Appendix J.

The samples, which were not used in the calculations, are provided in Table 13.

Table 13: samples which were not used in the calculations

Category	Type	#	Sample	ISO CFU/g	MA CFU/g
Seafood	a	6160	Lieu noir cru	2,00	3,71
	a	6161	Dame de saumon cru	3,00	4,20
	a	6884	Filet de colin	1,00	1,00
	a	6885	Filet de cabillaud	1,00	1,00
Pet food	c	154	Matières premières pour alimentation animale	4,27	5,41
	c	6163	Protéines déshydratées de volaille	1,00	1,00
	c	441	Matières premières pour alimentation animale	0,85	1,00
	c	6164	Protéines déshydratées de volaille	1,00	1,00
Environmental samples	a	3844	Chiffonnette Microcut petits pois	1,30	2,11
	a	3904	Chiffonnette plan de travail fabrication madereine apres désinfection	2,00	3,49
	a	3905	Chiffonnette table de cuisson béchamel	2,00	3,32
	a	3906	Chiffonnette table découpe emmenthal	1,00	1,00
	a	4011	Ecouvillon tapis entrée peleuse après désinfection	1,00	1,00
	a	4012	Ecouvillon tapis diviseur après désinfection	1,00	1,00
	a	4013	Lingette tapis parage après désinfection	4,13	4,00
	a	4015	Lingette tapis parage après désinfection	1,00	1,00
	a	4494	Chiffonnette local vaisselle atelier	4,18	4,00
	a	4495	Chiffonnette table atelier	4,18	4,00
	a	4496	Chiffonnette cutter	4,18	4,00
	a	4497	Chiffonnette poussoir	5,18	5,00
	b	3841	Eau de rinçage n°2 petits pois après cuisson	1,00	1,00
	b	3845	Eau de cuisson petits pois	1,00	1,90
	b	3907	Eau de rinçage béccher (PDL+eau)	2,00	2,00
	b	4007	Eau peleuse	0,00	1,00
	b	4009	Eau laveuse poissons	2,00	3,51
	c	3676	Poussières industrie ovoproduits	1,00	1,00
	c	3677	Poussières d'aspirateur (atelier)	1,00	1,00

Green cells: values <4 CFU/Petri dish. Yellow cells: values lower and higher than the quantification limits.

Three kinds of results are not considered as part of the statistical calculations:

- Those expressed with less than 4 colonies per Petri dish for at least one method,
- those lower or higher than the quantification limits,
- Undetermined results.

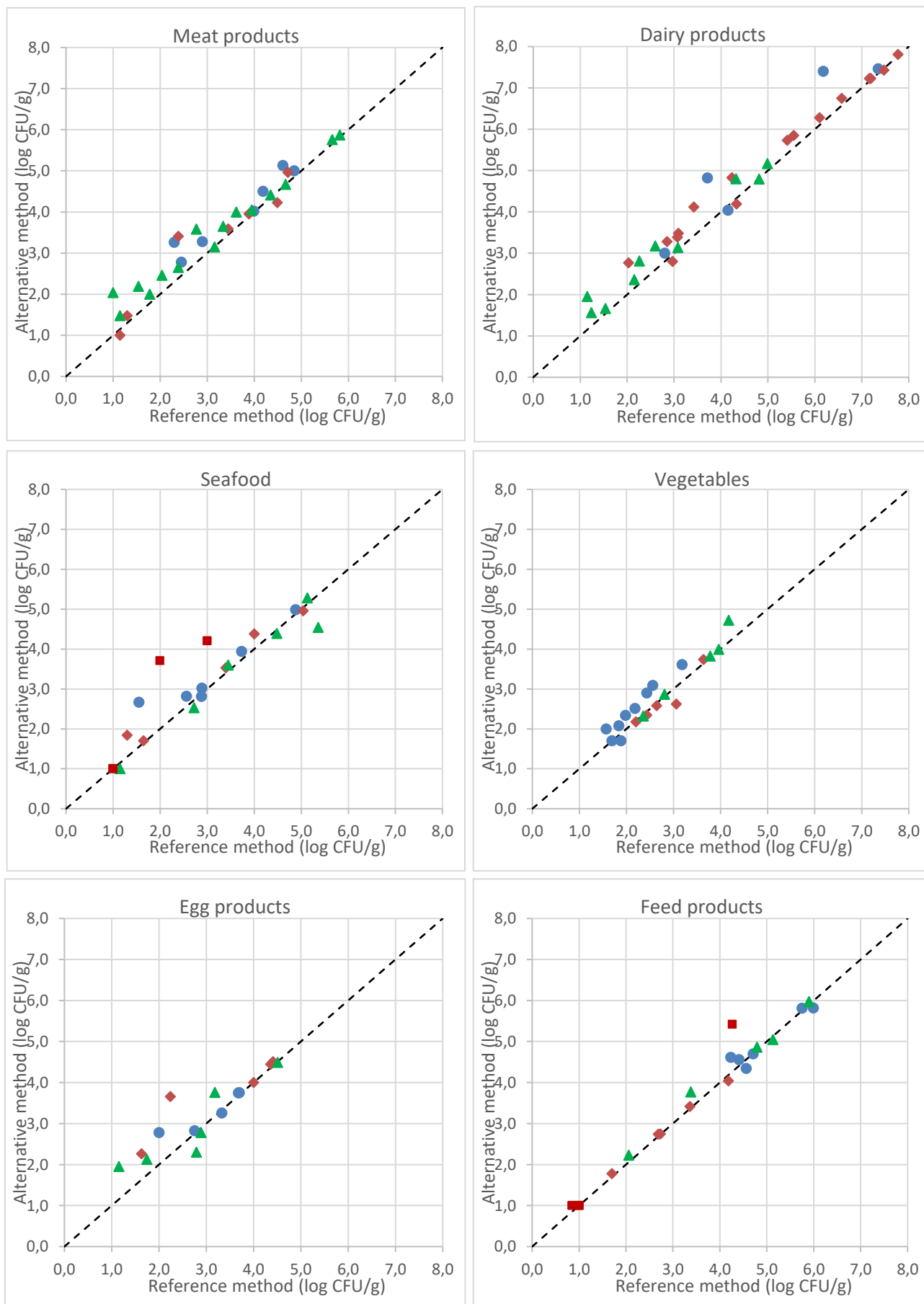
All results are presented in scatter plots per category:

- Figure 13: scatter plots for each category,
- Figure 14: scatter plots for all categories,

On scatter plots:

- Each type of food is differentiated per type on individual category scatter plots: blue circle: type a / orange diamond: type b / green triangle: type c
- Results expressed with less than 4 colonies per Petri dish for at least one method are indicated by a yellow square,
- Results lower or higher than the quantification limits for one method are indicated by a red square. The value of these results is corrected according to the EN ISO 16140-2/A1:20124 requirements.

Figure 13: scatter plots of reference-method versus alternative-method results for each category



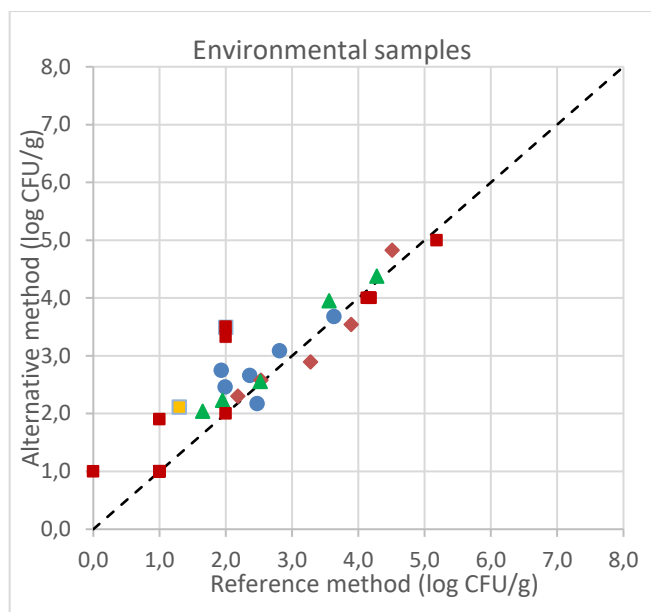
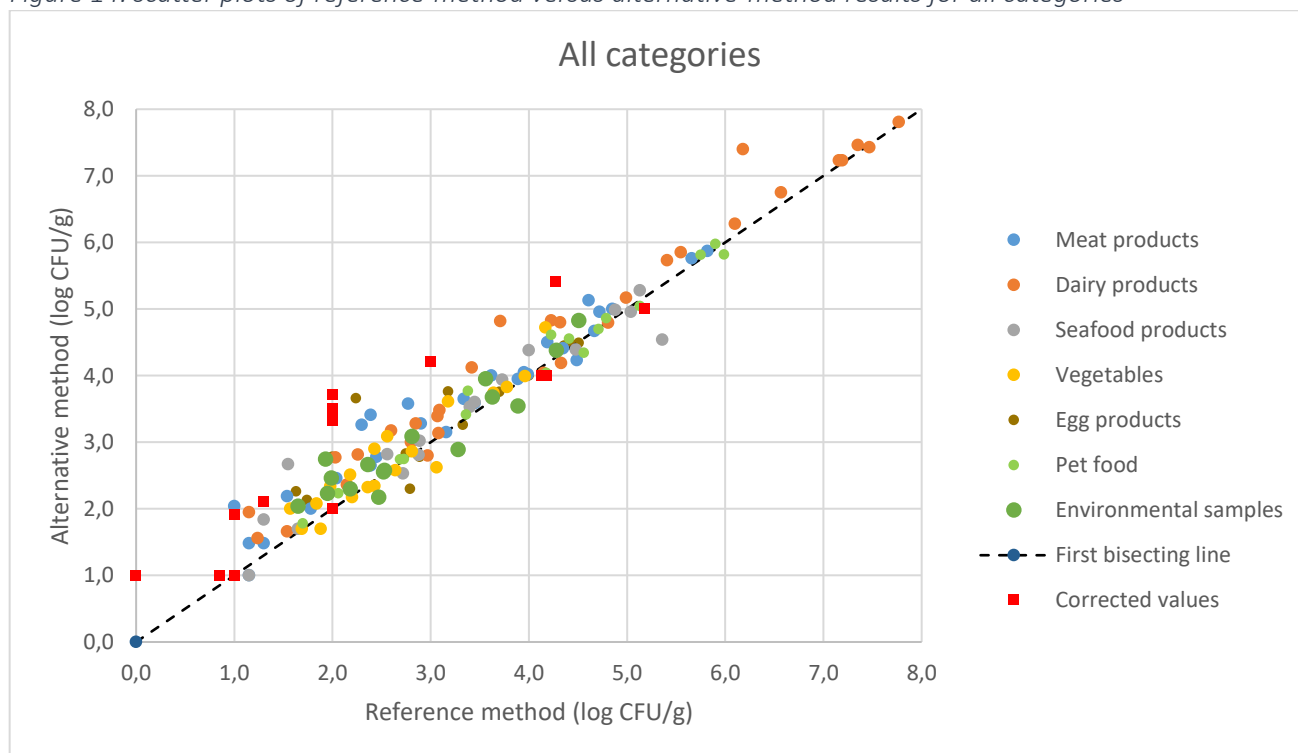


Figure 14: scatter plots of reference-method versus alternative-method results for all categories



6.1.4. Statistical interpretation

The results obtained are analyzed using the Bland-Altman method.

Statistical calculations are presented in Appendix K, as well as the results excluded from the statistical analysis per category.

Table 14 presents the summary of the average differences and standard deviation differences per category and for all categories.

Table 14: values for the Bland-Altman difference plot

Category	n	Standard deviation differences	Bias	Lower Confidence Limit	Upper Confidence Limit
Meat products	29	0.33	0.30	-0.39	0.99
Dairy products	31	0.34	0.32	-0.40	1.03
Seafood products	17	0.39	0.11	-0.75	0.96
Fruit & vegetables products	19	0.27	0.14	-0.44	0.73
Egg products	16	0.47	0.27	-0.76	1.30
Animal feed	16	0.17	0.06	-0.32	0.43
Environmental samples	16	0.32	0.16	-0.53	0.85
All cat.	144	0.34	0.21	-0.47	0.90

Overall, the average deviation is equal to 0.21, showing a positive bias between the NEOGEN Petrifilm EB method and the reference method. The average difference varies from 0.06 log CFU/g (animal feed) to 0.32 CFU/g (dairy products).

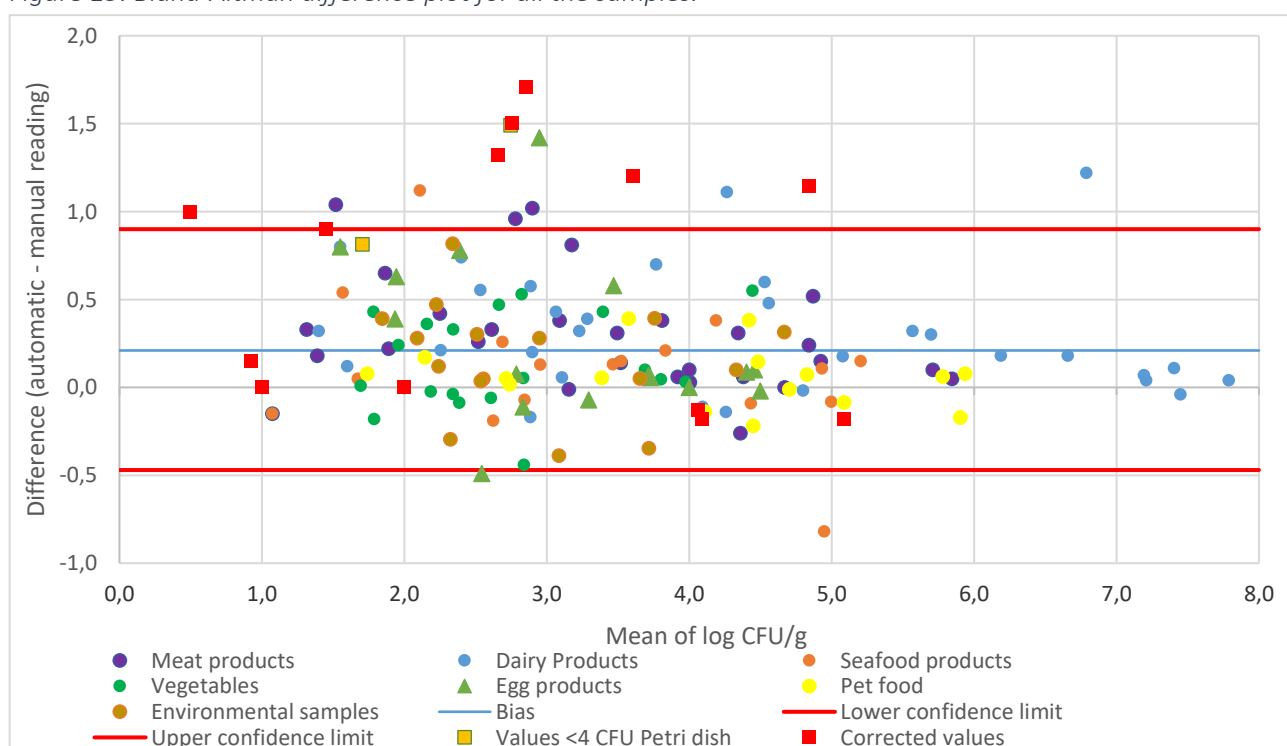
The upper and lower limits of the 95% confidence interval range from 0.90 to -0.47.

The Bland-Altman difference plots are presented in Figure 15 for all categories.

As on scatter plots:

- Each category is differentiated by a specific colour,
- Results expressed with less than 4 colonies per Petri dish for at least one method are indicated by a yellow square,
- Results lower or higher than the quantification limits for one method are indicated by a red square. The value of these results is corrected according to the EN ISO 16140-2/A1:2024 requirements.

Figure 15: Bland-Altman difference plot for all the samples.



- Observations:

Samples for which the average difference is lower or higher than the confidence limits are listed in table 15.

Table 15: values outside the confidence limits on the Bland-Altman difference plot

Category	Type	#	Matrix	ISO	Alternative	Mean	Difference	Confidence limits
				log CFU/g	log CFU/g			
Meat products	a	210	Pilons de poulet	2,30	3,26	2,78	0,96	LCL: -0,47 UCL: 0,90
	b	212	Cervelle	2,39	3,41	2,90	1,02	
	c	129	Poitrine fumée	1,00	2,04	1,52	1,04	
Dairy products	a	106b	Crème fraîche	6,18	7,40	6,79	1,22	
	a	119	Lait cru	3,71	4,82	4,27	1,11	
	a	124	Sardines	1,55	2,67	2,11	1,12	
Seafood products	c	144	Saumon fumé	5,36	4,54	4,95	-0,82	
	a	6160	Lieu noir cru	2,00	3,71	2,85	1,71	
	a	6161	Darne de saumon cru	3,00	4,20	3,60	1,20	
Egg products & pastries	b	122	Eclair vanille	2,24	3,66	2,95	1,42	
	c	58	Mayonnaise	2,79	2,30	2,55	-0,49	
Animal feed	c	154	Matières premières pour alimentation animale	4,27	5,41	4,84	1,14	
Environmental samples	a	3904	Chiffonnette plan de travail fabrication madeleine après désinfection	2,00	3,49	2,75	1,49	
	a	3905	Chiffonnette table de cuisson béchamel	2,00	3,32	2,66	1,32	
	b	3845	Eau de cuisson petits pois	1,00	1,90	1,45	0,90	
	b	4007	Eau peuleuse	0,00	1,00	0,50	1,00	
	b	4009	Eau laveuse poissons	2,00	3,51	2,75	1,51	

Green cells: values <4 CFU/Petri dish. Yellow cells: values lower and higher than the quantification limits.

Seventeen samples are out of the confidence limits:

- 8 concern corrected values or samples with less than 4 CFU/Petri dish,
- 2 are lower than the lower confidence limit,
- 15 are higher than the upper confidence limit.

When the difference observed between the reference and the alternative methods were above or lower than the 95 % confidence limit of agreement, the tests described in the reference method were applied on the colonies enumerated on the Petrifilm tests. The information concerning the identification and/or confirmation, is provided in Table 16.

Table 16: Disagreements observed between the reference and the alternative method

Classification of data	Category	Type	N° Sample	Product	Reference method	Alternative method	Value before correction (Ref/Alt)	Mean	Difference	Lower / Upper limits	Comments	Result before and after confirmation (VRBG/Petrifilm)
Interpretable results by both methods	1	a	210	Poultry meat	2,30	3,26	/	2,78	0,96	LCL: -0,47 UCL: 0,90	Colonies confirmed for both methods	2,30-2,30/3,22-3,00
	1	b	212	Brain	2,39	3,41	/	2,9	1,02		Colonies confirmed for both methods	2,39-2,39/3,33-3,33
	1	c	129	Smoked chest	1,00	2,04	/	1,52	1,04		Colonies confirmed for both methods	1,00-1,00/1,97-1,97
	2	a	106b	Cream	6,18	7,4	/	6,79	1,22		Colonies confirmed for both methods	6,18-6,18/7,29-7,25
	2	a	119	Raw milk	3,71	4,82	/	4,27	1,11		Presence of characteristic colonies in VRBG not confirmed, Colonies confirmed for Petrifilm	4,28-3,71/4,89-4,79
	3	a	124	Sardines	1,55	2,67	/	2,11	1,12		Colonies confirmed for both methods	2,28-1,55/2,70-2,14
	3	c	144	Smoked salmon	5,36	4,54	/	4,95	-0,82		Enumeration in favor of the reference method	5,36-5,36/4,51-4,51
	5	b	122	Pastry	2,24	3,66	/	2,95	1,42		Colonies on Petrifilm not confirmed as <i>Enterobacteria</i> , lack of specificity of the Petrifilm method	2,24-2,24/3,66-<2,04
<4 CFU/plate	7	a	3904	Wipe (pastry industry)	2,00	3,53	/	2,77	1,53	LCL: -0,47 UCL: 0,90	Sample inoculated with <i>Citrobacter farmeri</i> , less colonies in VRBG	/
< or > the quantification limit	3	a	6160	Raw fish	1,00	3,69	<2,00	2,85	3,71		Characteristic colonies in VRBG plates , oxidase +, colonies from Petrifilm identified as <i>Aeromonas hydrophila</i>	3,62-<2,00/3,69-<2,00
	3	a	6161	Raw fish	2,00	4,2	<3,00	3,6	1,20		Characteristic colonies in VRBG plates , oxidase +, colonies from Petrifilm identified as <i>Aeromonas hydrophila</i>	4,26-<3,00/4,18-<3,00
	6	c	154	Raw material	3,27	5,41	<4,27	4,84	1,14		Characteristic colonies in VRBG plates , not confirmed	5,38-<4,27/5,47-not tested
	7	a	3905	Wipe (bechamel sauce)	1,00	3,32	<2,00	2,66	1,32		Sample inoculated with <i>Serratia fonticola</i> , no growth in VRBG	<2,00-<2,00/not tested (inoculation)
	7	b	3845	Process water (peas)	0,00	1,90	<1,00	1,45	0,90		Sample inoculated with <i>Escherichia coli</i> , no growth in VRBG	<2,00-<2,00/not tested (inoculation)
	7	b	4009	Process water (fish industry)	0,00	3,51	<2,00	2,75	1,51		Characteristic colonies in VRBG plates , oxidase +	3,67-<2,00/3,63-not tested

For the majority of samples, the difference is clearly in favor of the alternative method (confirmatory tests positive or inoculated samples). The best performances of the alternative method could be due to the fact that NEOGEN Petrifilm *Enterobacteriaceae* Count (EB) uses a cold-water soluble gelling agent while the ISO 21528-2 method uses a melted media maintained at 44-47°C before pouring in the plates, which can have an injury effect on some *Enterobacteria* strains.

For 3 samples (6160, 6161 and 122), the enumeration obtained with the alternative method is higher than the enumeration obtained with the ISO method but the enumerated colonies were not confirmed as *Enterobacteria* using the tests described in the reference method.

For 2 samples (154 and 4009), no test was applied on the colonies enumerated on Petrifilm; it is thus impossible to know if the enumerated colonies were really *Enterobacteria*.

For one sample (144), the enumeration was slightly higher with the reference method.

6.1.5. Conclusion

The relative trueness study of the alternative method is satisfying for all categories tested even if a positive bias is observed for the NEOGEN Petrifilm *Enterobacteriaceae* method.

Table 17 summarizes the results obtained with the One Plate approach compared to the data already validated from 2 plates or 2 successive dilutions.

Table 17: summary One Plate versus initial validation

One Plate	22 h incubation time						Two Plates	22 h incubation time				
	Category	n	SD	Bias	LCL	UCL		n	SD	Bias	LCL	UCL
	Meat products	29	0.33	0.30	-0.39	0.99		29	0,32	0,31	-0,36	0,99
	Dairy products	31	0.34	0.32	-0.40	1.03		31	0,31	0,32	-0,33	0,96
	Seafood products	17	0.39	0.11	-0.75	0.96		17	0,38	0,12	-0,69	0,94
	Fruit & vegetables products	19	0.27	0.14	-0.44	0.73		19	0,25	0,14	-0,40	0,69
	Egg products	16	0.47	0.27	-0.76	1.30		16	0,46	0,46	-0,55	1,46
	Animal feed	16	0.17	0.06	-0.32	0.43		16	0,14	0,07	-0,23	0,37
	Environmental samples	16	0.32	0.16	-0.53	0.85		16	0,3	0,16	-0,51	0,83
	All cat.	144	0.34	0.21	-0.47	0.90		144	0,22	0,22	-0,43	0,87

6.2. Accuracy profiles

6.2.1. Protocols

Seven matrix/strain pairs were tested. A minimum of one type per category and two different batches were selected, using six samples per type. Two samples were contaminated at a low level, two at intermediate level, and two at a high level. For each sample, five replicates (five different test portions) were tested. In the end, thirty samples were tested per matrix type.

The tested categories, types, matrices, and inoculated strains are provided in Table 18.

Table 18: matrix – strain pairs and inoculation protocols for the accuracy profile study

Category		Type	Matrix	Inoculated strain	Origin	Inoculation level (CFU/g)
1	Meat products	b: Pork, beef, veal raw and cooked	Pork pâté	<i>Enterobacter agglomerans</i> 135	Pork liver	300 10 000 100 000
2	Dairy products	a: Milk and cream	Pasteurized milk	<i>Hafnia alvei</i> 130	Raw milk	
3	Seafood	c: Raw	Salmon fillet	<i>Klebsiella oxytoca</i> 179	RTE	
4	Vegetables	a: Fresh and frozen raw products	Green beans	<i>Escherichia hermani</i> Ad1457	Spinach	
5	Miscellaneous and egg-based products	c: Egg based products	Whole liquid egg	<i>Serratia liquefaciens</i> 26	Egg product	
6	Feed stuff	b: Cooked or dehydrated products	Pâté for cat	<i>Citrobacter braakii</i> Ad833	Beef meat	
7	Production environmental samples	b: Process water (Batch 1: zucchini and split peas Batch 2: pilchards)	Process water	<i>Escherichia coli</i> 93	Dish	

6.2.2. Results and interpretation

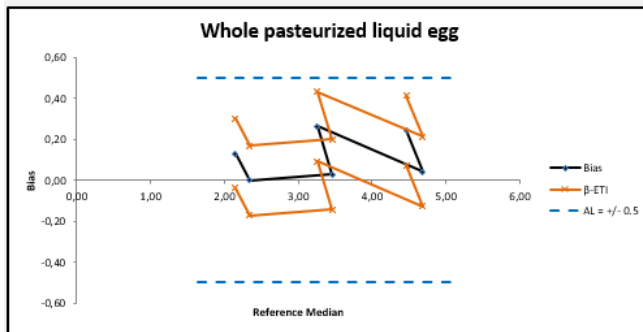
The raw data are provided in Appendix L. The summary tables (in log CFU/g) and calculations are provided in Appendix L. The statistical results and the accuracy profiles are provided in Figure 16. Statistical calculations were done according to the Excel spreadsheet named AP calculation tool_MCS_(clause_6-1-3-3 calculation_and_interpretation_of_accuracy_profile_study) available at <http://standards.iso.org/iso/16140>.

For the accuracy profiles of all the categories, the probability for the tolerance interval β is set at 80% and the acceptability limits at 0.5.

Figure 16: accuracy profiles



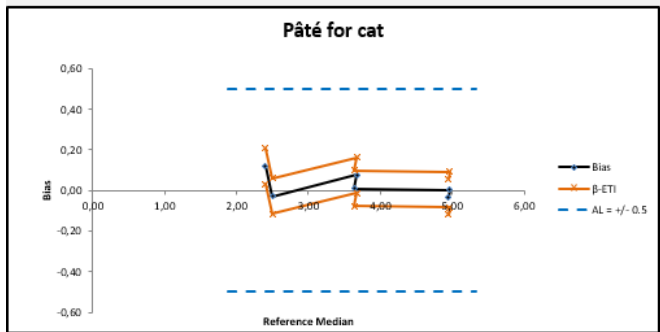
(Food) Category	Egg product and composite
(Food) Type	Whole pasteurized liquid egg



Sample Name	Reference Central value	Bias	Lower β -ETI	Upper β -ETI	β -ETI compared to AL ± 0.5 Acceptable	β -ETI compared to final AL Acceptable
	2,15	0,133	-0,038	0,303	YES	YES
	2,34	0,000	-0,170	0,170	YES	YES
	3,46	0,029	-0,141	0,199	YES	YES
	3,26	0,263	0,093	0,434	YES	YES
	4,68	0,043	-0,127	0,213	YES	YES
	4,46	0,245	0,075	0,416	YES	YES

	Reference method	Alternative method	SD repeatability of reference method ≤ 0.125	Final AL
SD Repeatability	0,092	0,118	YES	+/- 0,500

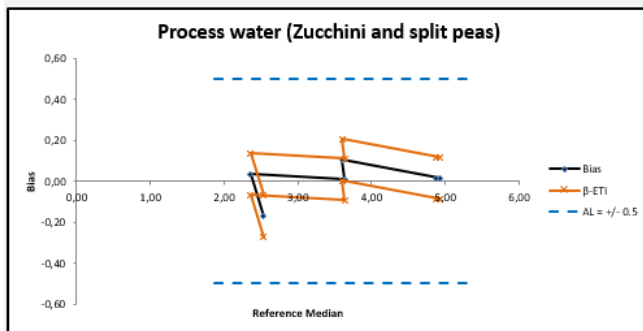
(Food) Category	Pet food
(Food) Type	Pâté for cat



Sample Name	Reference Central value	Bias	Lower β -ETI	Upper β -ETI	β -ETI compared to AL ± 0.5 Acceptable	β -ETI compared to final AL Acceptable
	2,40	0,121	0,033	0,209	YES	YES
	2,51	-0,028	-0,116	0,060	YES	YES
	3,67	0,076	-0,012	0,164	YES	YES
	3,63	0,010	-0,078	0,098	YES	YES
	4,97	0,005	-0,083	0,093	YES	YES
	4,34	-0,031	-0,119	0,057	YES	YES

	Reference method	Alternative method	SD repeatability of reference method ≤ 0.125	Final AL
SD Repeatability	0,079	0,061	YES	+/- 0,500

(Food) Category	Environmental samples
(Food) Type	Process water (Zucchini and split peas)



Sample Name	Reference Central value	Bias	Lower β -ETI	Upper β -ETI	β -ETI compared to AL ± 0.5 Acceptable	β -ETI compared to final AL Acceptable
	2,53	-0,170	-0,272	-0,067	YES	YES
	2,36	0,036	-0,066	0,139	YES	YES
	3,63	0,010	-0,093	0,112	YES	YES
	3,60	0,106	0,003	0,208	YES	YES
	4,92	0,015	-0,087	0,118	YES	YES
	4,87	0,017	-0,085	0,120	YES	YES

	Reference method	Alternative method	SD repeatability of reference method ≤ 0.125	Final AL
SD Repeatability	0,079	0,071	YES	+/- 0,500

The accuracy profiles are comprised within the Acceptability Limits fixed at ± 0.5 log CFU for all the tested matrices.

6.2.3. Conclusion

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

7. General conclusion of the extension study

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

171 samples were tested in the relative trueness study providing 144 interpretable results by both the reference and the alternative method, which clearly satisfied the required criteria for quantitative method comparison per EN ISO 16140-2/A1:2024.

The results obtained from interpretation carried out on a single dilution (or single plate) are equivalent to the reference method.

The observed profiles are comprised within the AL for all categories. All the accuracy profiles fulfill the performance criteria.

8. Extension study: reading by the Petrifilm Plate Reader Advanced (PPRA)

8.1. Relative trueness study

8.1.1. Number and nature of the samples

In total, five food categories, one pet food category and one environmental samples category were tested.

A total of 58 samples were thus analyzed and 44 exploited.

The distribution of the samples is presented in Table 19.

Table 19: number and nature of the samples analyzed

Category		Type		Analyzed samples	Exploited samples
①	Meat products	a	Poultry meat raw and cooked	3	2
		b	Pork, beef, veal, raw and cooked	3	3
		c	Delicatessen	1	1
		Total		7	6
②	Dairy products	a	Milk and cream	2	2
		b	Cheeses	2	2
		c	Dairy desserts, milk powders	2	2
		Total		6	6
③	Seafood products	a	Raw seafood	4	3
		b	Cooked	2	2
		c	RTE, RTH	3	2
		Total		9	7
④	Vegetables	a	Fresh and frozen raw products	2	1
		b	Fresh and frozen seasoned raw products	2	2
		c	Cooked vegetables	3	3
		Total		7	6
⑤	Miscellaneous and egg-based products	a	Composite food	4	1
		b	Pastries, chocolate	2	2
		c	Egg based products	3	2
		Total		9	5
⑥	Feed stuff	a	Fresh product	1	1
		b	Cooked and dehydrated product	7	4
		c	Raw material	7	5
		Total		15	10
⑦	Environmental samples	a	Surfaces (wipes, swabs...)	6	5
		b	Process water	4	2
		c	Dusts	2	2
		Total		12	9
All categories				65	49

8.1.2. Artificial contamination of the samples

For this comparison study, 13 samples were artificially contaminated among the 65 tested samples. The list of artificially contaminated samples and the details relating to inoculation are specified in Appendix M.

8.1.3. Results

The data are classified in three categories:

- Interpretable results with manual reading and automatic reading,
- Results with less than 4 colonies per plate with the manual and/or the automatic reading method in order to have a more precise result. These results are not included in the calculation.
- Results below or above the quantification limit: according to the ISO 16140- 2/A1:2024, if any result (either manual or automatic method) is below the quantification limit, the data should be plotted using a substituted value of 1 log₁₀ units less than the observed value in case of a lower than value. Similarly, any value greater than the upper limit should be amended by adding 1 log unit. These results are not included in the calculations but also appear on the graphs.

Raw results are shown in Appendix N.

The samples, which were not used in the calculations, are provided in Table 20.

Table 20: samples which were not used in the calculations

Category	Type	#	Sample	Manual	PPRA	Manual	PPRA
				CFU/g	CFU/g	log CFU/g	log CFU/g
MP	a	3005616	Chicken leg	1,0E+03	1,0E+03	3,00	3,00
SFP	a	2986185	Shrimp	1,3E+02	1,0E+01	2,11	1,00
	c	2986186	Smoked tuna	1,5E+02	3,0E+01	2,18	1,48
VP	a	3005859	Frozen zucchini	3,0E+03	3,0E+03	3,48	3,48
EP	a	3005790	Egg mayonnaise with herb salad	<10	<10	1,00	1,00
	a	3005864	Mayonnaise	<10	<10	1,00	1,00
	a	3005865	Industrial mayonnaise	<10	<10	1,00	1,00
	c	3005868	Whole egg	4,0E+03	3,0E+03	3,60	3,48
PF	b	30056670	Rabbit food	<10	<10	1,00	1,00
	b	30056671	Cat food	<10	<10	1,00	1,00
	b	3005738	Fish pate	<10	<10	1,00	1,00
	c	30056673	Wheat	<10	<10	1,00	1,00
	c	30056674	Soybean meal	<10	<10	1,00	1,00
ES	b	2986187	Process water- poultry abattoir	1,0E+01	2,0E+01	1,00	1,30
	b	2986188	Dairy rinsing water	<10	<10	1,00	1,00
	a	3005731	Surface sampling of plant preparations	2,0E+01	2,0E+01	1,30	1,30

Yellow case: corrected value. Green case: value <4 CFU/plate

Three kinds of results are not considered as part of the statistical calculations:

- Those expressed with less than 4 colonies per Petri dish for at least one method,
- those lower or higher than the quantification limits,
- Undetermined results.

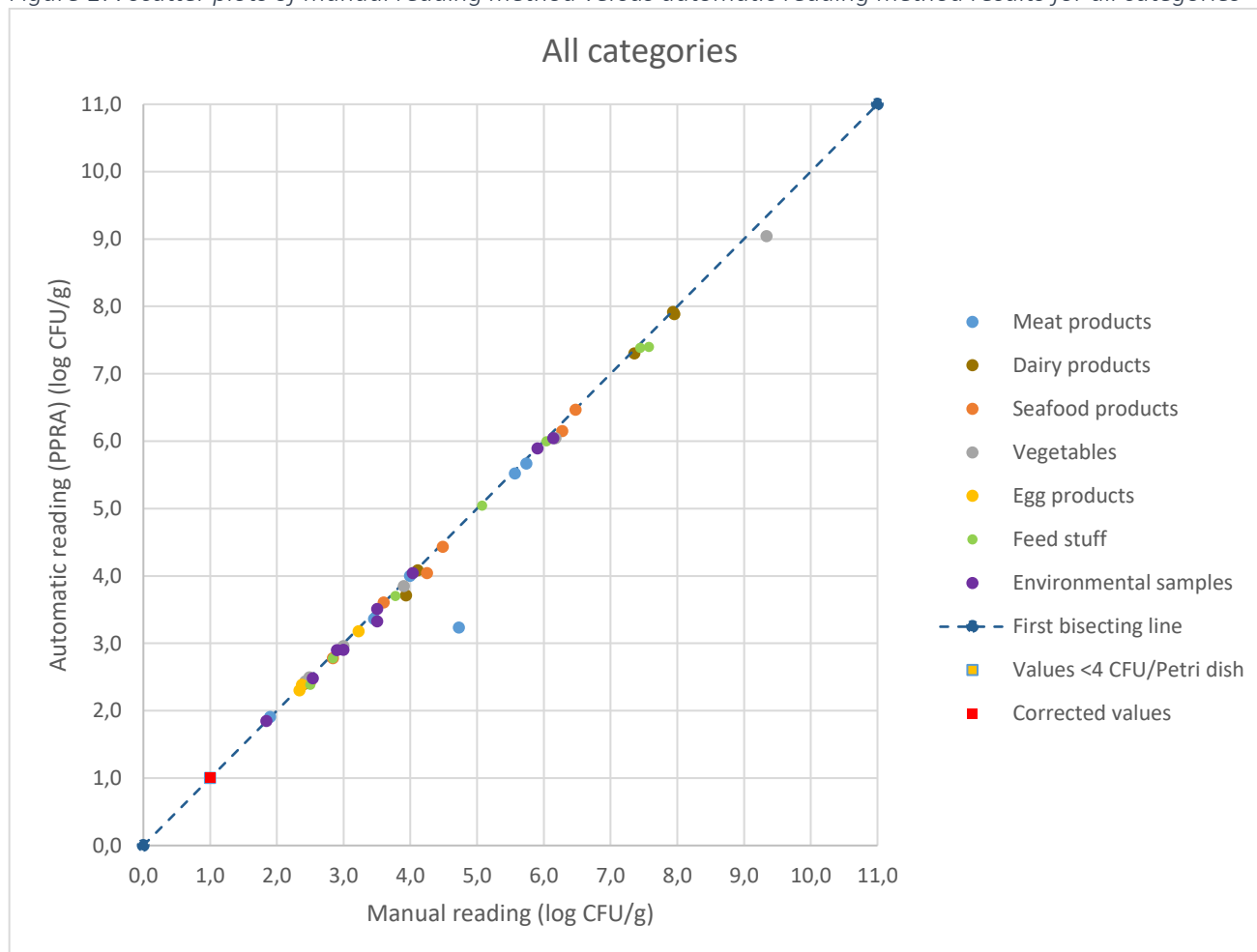
All results are presented in scatter plots per category:

- Figure 17: scatter plots for all categories.

On scatter plots:

- Results expressed with less than 4 colonies per Petri dish for at least one method are indicated by a yellow square,
- Results lower or higher than the quantification limits for one method are indicated by a red square. The value of these results is corrected according to the EN ISO 16140-2/A1:20124 requirements.

Figure 17: scatter plots of manual reading method versus automatic reading method results for all categories



8.1.4. Statistical interpretation

The results obtained are analyzed using the Bland-Altman method.

Statistical calculations are presented in Appendix O, as well as the results excluding from the statistical analysis per category.

Table 21 presents the average difference and standard deviation difference for each category and for all categories.

Table 21: values for the Bland-Altman difference plot

Category	n	Standard deviation differences	Bias	Lower Confidence Limit	Upper Confidence Limit
Meat products	6	0,60	-0,29	/	/
Dairy products	6	0,08	-0,07	/	/
Seafood products	7	0,07	-0,08	/	/
Vegetables	6	0,11	-0,09	/	/
Egg products	5	0,03	-0,03	/	/
Pet food	10	0,05	-0,07	/	/
Environmental samples	9	0,06	-0,05	/	/
All cat.	49	0,22	-0,10	-0,54	0,35

Overall, the average deviation is equal to -0.10, showing a slight negative bias between the automatic reading by PPRA and manual reading. The average difference varies from -0.29 log CFU/g (meat products) to -0.03 CFU/g (egg products).

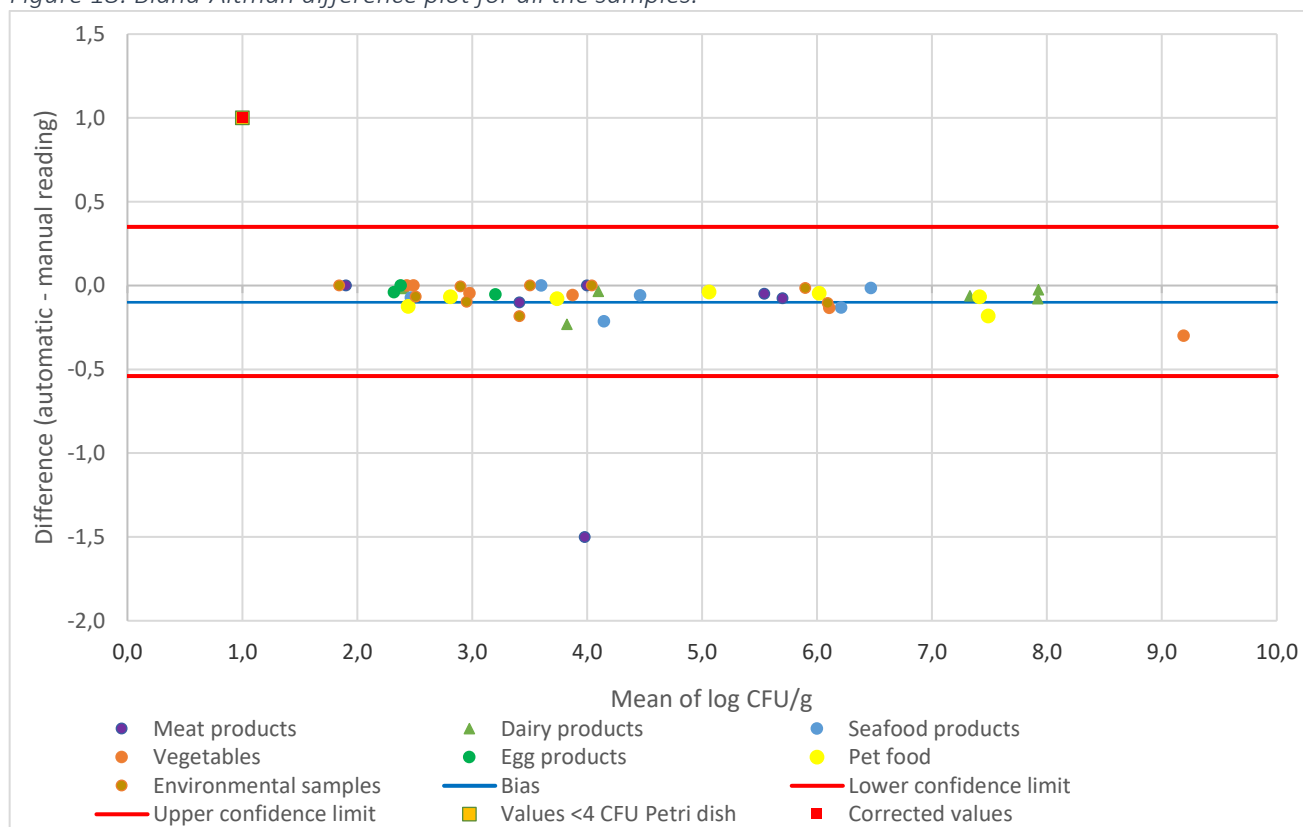
The upper and lower limits of the 95% confidence interval range from 0.35 to -0.54.

The Bland-Altman difference plots are presented in Figure 18 for all categories.

As on scatter plots:

- Each category is differentiated by a specific colour,
- Results expressed with less than 4 colonies per Petri dish for at least one method are indicated by a yellow square,
- Results lower or higher than the quantification limits for one method are indicated by a red square. The value of these results is corrected according to the EN ISO 16140-2/A1:2024 requirements.

Figure 18: Bland-Altman difference plot for all the samples.



- Observations:

Samples for which the average difference is lower or higher than the confidence limits are listed in Table 22.

Table 22: values outside the confidence limits on the Bland-Altman difference plot (green cases: values <4 CFU/Petri dish, yellow cases: values lower and higher than the quantification limits, blue: values higher than the confidence limits, red: values lower than the quantification limits)

Confidence Limits	Category	Type	Sample #	Manual reading (log)	Automatic reading (log)	Mean	Difference
LCL: -0.62 UCL: 0.36	Meat	b	3005619	4.73	3.23	3.98	-1.50
	Seafood	a	2986185	2.11	1.00	1.56	-1.11
	Seafood	c	2986175	2.18	1.48	1.83	-0.70

Three samples are out of the confidence limits (lower than the lower confidence limit) and 2 concern corrected values or samples with less than 4 CFU/Petri dish.

Only one sample interpretable is outside the confidence limits (3005619) and concerns meat products category.

8.2. Accuracy profile study

8.2.1. Protocols

For this study, only one accuracy profile was tested to compare automatic reading with manual reading. The Expert laboratory chose to test a fish terrine matrix inoculated with a strain of *Escherichia coli* AZD018 isolated from a raw fish.

Two different batches of matrix were tested, and two samples were 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. A total of 30 samples were analyzed per matrix.

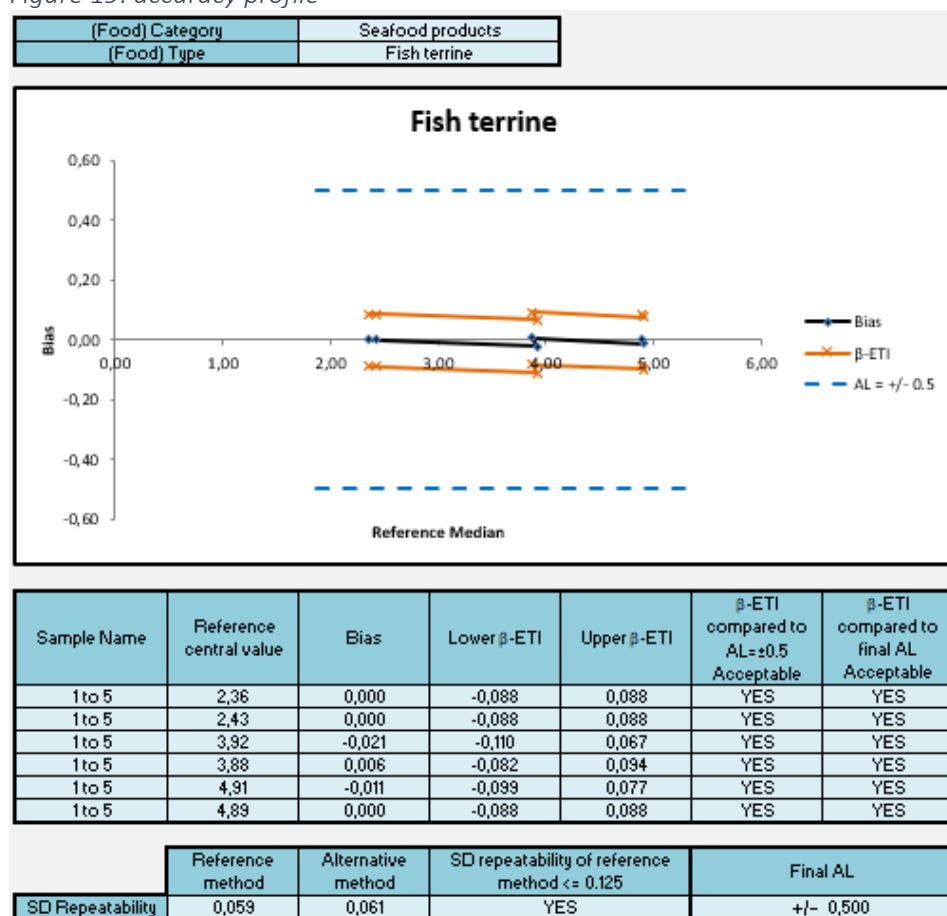
8.2.2. Results and interpretation

Raw data are provided in Appendix O.

Statistical calculations were done according to the Excel spreadsheet named AP calculation tool_MCS_(clause_6-1-3-3 calculation_and_interpretation_of_accuracy_profile_study) ver. 27-01-2015.xlsx available at <http://standards.iso.org/iso/16140>.

For the accuracy profiles of the category, the probability for the tolerance interval β is set at 80% and the acceptability limits at 0.5.

Figure 19: accuracy profile



For the matrix-pair tested, no statistical difference was observed between the two methods.

9. General conclusion extension study PPRA

In this study, Petrifilm method was tested to compare the results obtained by automatic reading performed by the PPRA and manual reading performed by a qualified technician. For this Petrifilm, a reduced study (minimum 5 samples per category) of relative trueness and an accuracy profile were carried out. For the Petrifilm tested, no significant difference related to automatic reading was observed.

Furthermore, all the accuracy profiles produced show a very good correlation between the two reading modes tested.

10. General conclusion

- **Initial validation:**

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

- 171 samples were tested in the relative trueness study providing 144 interpretable results by both the reference and the alternative method, 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/A1 (2024).
- The inclusivity and exclusivity testing shows satisfying results.

The inter-laboratory study conclusions are:

- The data interpretations were done according to the EN ISO 16140- 2/A1 (2024). 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 NEOGEN Petrifilm *Enterobacteriaceae* is considered equivalent to the reference method.

- **Extension study with one plate and one dilution interpretation:**

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

The relative trueness study of the alternative method is satisfying for all categories tested even if a positive bias is observed for the NEOGEN Petrifilm *Enterobacteriaceae* method.

The results obtained from interpretation carried out on a single dilution (or single plate) are equivalent to the reference method.

- **Extension study using Petrifilm Plate Reader Advanced:**

For the Petrifilm tested, no significant difference related to automatic reading was observed.

Le Lion d'Angers, November 25, 2025

Guillaume MESNARD
Technical deputy manager

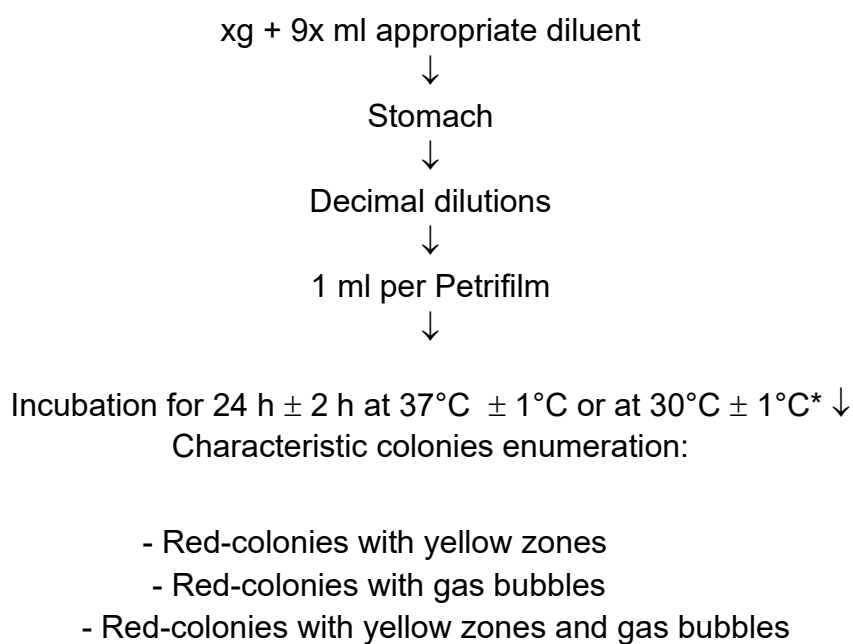


François Le Nestour
Head of the Methods Validation studies and R&D



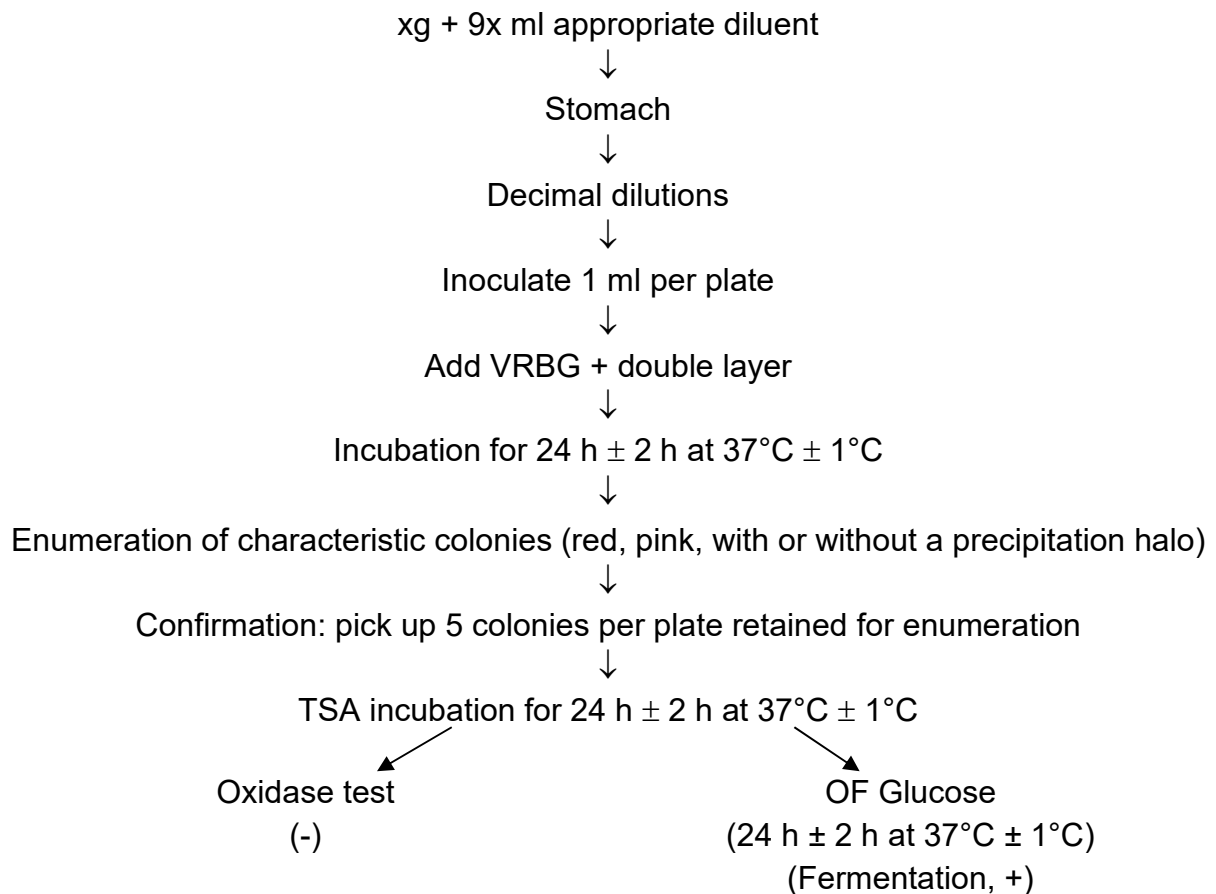
APPENDICES

**Appendix A – Flow diagram of the alternative method:
NEOGEN Petrifilm *Enterobacteriaceae* Count Plate**



*During the NF Validation study, the 37°C temperature was used.

Appendix B – Flow diagrams of the reference method:
NF ISO 21528-2 (June 2017) - Microbiology of food and animal feeding stuffs -
Horizontal methods for the detection and enumeration of *Enterobacteriaceae* -
Part 2: colony-count method



Appendix C – Artificial contaminations of samples

Date of analyse	Sample number	Product (French name)	Product	Artificial contaminations			
				Strain	Origin	Injury protocol	Injury measurement
2010	763	Saucisson pour chien	Sausage for dog	<i>Escherichia coli</i> 12	Turkey meat	TT 30min 55°C	0,66
2010	765	Saucisson pour chien	Sausage for dog	<i>Escherichia coli</i> 101	Pork brain	TT 30min 55°C	0,47
2010	774	Mini filets pour chat au lapin	Pâté for cat	<i>Escherichia coli</i> Ad233	Veal	-20°C	0,54
2015	3844	Chiffonnette Microcut petits pois	Wipe (peas industry)	<i>Escherichia coli</i> 19	Grated carrots	HT 56°C 30min	1,20
2015	3845	Eau de cuisson petits pois	Process water (peas)	<i>Escherichia coli</i> 19	Grated carrots	HT 56°C 30min	1,20
2015	3903	Chiffonnette balance après désinfection cuisson riz	Wipe (rice industry)	<i>Citrobacter farmerii</i> Ad 1116	Environment	pH4 for 11 days	1,90
2015	3904	Chiffonnette plan de travail fabrication madeleine après désinfection	Wipe (pastry industry)	<i>Citrobacter farmerii</i> Ad 1116	Environment	pH4 for 11 days	1,90
2015	3905	Chiffonnette table de cuisson béchamel	Wipe (bechamel sauce)	<i>Serratia fonticola</i> Ad 1376	Water	HT 56°C 25 min	3,40
2015	3906	Chiffonnette table découpe Emmenthal	Wipe (cheese industry)	<i>Escherichia coli</i> Ad 1395	Water	HT 56°C 25 min	1,44
2015	3907	Eau de rinçage becher (PDL+eau)	Process water (milk industry)	<i>Serratia fonticola</i> Ad 1376	Water	HT 56°C 25 min	3,40
2015	4494	Chiffonnette local vaisselle atelier	Wipe (dishwasher)	<i>Enterobacter fergusonii</i> 2876	Environment	16 days pH4	0,42
2015	4495	Chiffonnette table atelier	Wipe (table)	<i>Enterobacter fergusonii</i> 2876	Environment	16 days pH4	0,42
2015	4496	Chiffonnette cutter	Wipe (cutter)	<i>Citrobacter youngae</i> Ad1372	Water	HT 50°C 10 min	0,5
2015	4497	Chiffonnette poussoir	Wipe (push-button)	<i>Citrobacter youngae</i> Ad1372	Water	HT 50°C 10 min	0,5
2015	4562	Chiffonnette table préparation pâte	Wipe	<i>Escherichia coli</i> Ad1388	Water	16 days pH4	0,42
2015	4563	Chiffonnette cuve broyeur après nettoyage	Wipe after cleaning	<i>Escherichia coli</i> 101	Pork meat	16 days 4°C	1,07
2015	4564	Chiffonnette grille four fumage après nettoyage	Wipe after cleaning	<i>Escherichia coli</i> Ad1828	Beef meat	HT 50°C 10 min	0,4
2015	4565	Chiffonnette table découpe après nettoyage	Wipe after cleaning	<i>Escherichia coli</i> Ad1388	Water	16 days pH4	0,42
2017	6226	Crème dessert à la vanille	Dairy dessert	<i>Enterobacter kobei</i> Ad706	Milk powder	Seeding 48h 2-8°C	/
2017	6227	Riz au lait	Dairy dessert	<i>Enterobacter kobei</i> Ad706	Milk powder	Seeding 48h 2-8°C	/
2017	6228	Nem au crabe	RTRH Seafood	<i>Enterobacter cloacae</i> Ad230	Tuna	Seeding 48h 2-8°C	/
2017	6229	Beignets de crevettes	RTRH Seafood	<i>Enterobacter cloacae</i> Ad230	Tuna	Seeding 48h 2-8°C	/
2017	6230	Parmentier de poisson ciboulette	RTRH seafood	<i>Escherichia coli</i> Ad228	Fish	Seeding 48h 2-8°C	/

Date of analyse	Sample number	Product (French name)	Product	Artificial contaminations			
				Strain	Origin	Injury protocol	Injury measurement
2017	6231	Betteraves rouges assaisonnées	Seasoned red beetroot	<i>Escherichia hermanii</i> Ad457	Spinach	Seeding 48h 2-8°C	/
2017	6232	Carottes râpées au citron	Seasoned grated carrots	<i>Escherichia hermanii</i> Ad457	Spinach	Seeding 48h 2-8°C	/
2017	6233	Duo carottes céleri assaisonnés	Seasoned grated celery carrots	<i>Klebsiella pneumoniae</i> 139	Soya	Seeding 48h 2-8°C	/
2017	6234	Boulettes aux légumes carottes petits pois mais	RTRH beef	<i>Escherichia hermanii</i> Ad457	Spinach	Seeding 48h 2-8°C	/
2017	6235	Boulettes aux légumes carottes petits pois mais	RTRH beef	<i>Klebsiella pneumoniae</i> 139	Soya	Seeding 48h 2-8°C	/
2017	6236	Galettes gourmandes lentilles carottes	RTRH vegetables	<i>Klebsiella pneumoniae</i> 139	Soya	Seeding 48h 2-8°C	/
2017	6237	Falafels pois chiches fèves coriandre menthe	RTRH vegetables	<i>Klebsiella pneumoniae</i> 139	Soya	Seeding 48h 2-8°C	/
2017	6238	Cannelloni pur bœuf	RTRH beef	<i>Enterobacter kobei</i> Ad342	Ham	Seeding 48h 2-8°C	/
2017	6239	Pizza jambon fromage	RTRH pizza	<i>Enterobacter kobei</i> Ad342	Ham	Seeding 48h 2-8°C	/
2017	6240	Flan pâtissier	Custard pastry	<i>Escherichia hermanii</i> Ad461	Custard	Seeding 48h 2-8°C	/
2017	6241	Eclair au chocolat	Pastry	<i>Escherichia hermanii</i> Ad461	Custard	Seeding 48h 2-8°C	/
2017	6242	Saucisson pour chien	Sausage for dog	<i>Enterobacter kobei</i> Ad342	Ham	Seeding 48h 2-8°C	/
2017	6243	Eau de rinçage (industrie porc)	Rinsed water (Pork industry)	<i>Hafnia alvei</i> 167	Sausages	Seeding 48h 2-8°C	/
2017	6244	Eau de lavage sciage viande (industrie porc)	Wash water (pork industry)	<i>Hafnia alvei</i> 167	Sausages	Seeding 48h 2-8°C	/
2017	6884	Filet de colin	Hake fillet	<i>Rhanella aquatilis</i> 67	Delicatessen	Seeding 48h 2-8°C	/
2017	6885	Filet de cabillaud	Cod fillet	<i>Rhanella aquatilis</i> 67	Delicatessen	Seeding 48h 2-8°C	/
2017	6907	Protéines déshydratées de volaille	Dehydrated poultry proteins	<i>Enterobacter aerogenes</i> Ad889	Meat meal	Spiking-HT 8 min 56°C	/
2017	6908	Protéines déshydratées de volaille	Dehydrated poultry proteins	<i>Enterobacter aerogenes</i> Ad889	Meat meal	Spiking-HT 8 min 56°C	/
2017	6909	Colin d'Alaska	Hake	<i>Enterobacter cloacae</i> Ad230	Tuna	Seeding 48h 2-8°C	/
2017	6910	Colin d'Alaska	Hake	<i>Enterobacter cloacae</i> Ad230	Tuna	Seeding 48h 2-8°C	/
2017	6911	Saumon	Salmon	<i>Citrobacter braakii</i> Ad2701	Squids	Seeding 48h 2-8°C	/
2017	6912	Poudre de lait écrémée	Skimmed milk powder	<i>Escherichia vulneris</i> 127	Raw milk	Spiking HT 8min 56°C	0,5
2017	6913	Poudre de lait écrémée	Skimmed milk powder	<i>Escherichia coli</i> Ad1422	Infant formula	Spiking HT 8min 56°C	1,0
2017	6914	Poudre de lait infantile sans probiotiques	Infant formula without probiotics	<i>Escherichia vulneris</i> 127	Raw milk	Spiking HT 8min 56°C	0,5
2017	6915	Poudre de lait infantile avec probiotiques	Infant formula with probiotics	<i>Escherichia hermanii</i> Ad463	Raw milk	Spiking HT 8min 56°C	1,7
2017	6916	Poudre de lait infantile avec probiotiques	Infant formula with probiotics	<i>Escherichia coli</i> Ad1422	Infant formula	Spiking HT 8min 56°C	1,0

Appendix D - Relative trueness study: raw data

Ne: estimated number *: less than 4 colonies/plate N: arithmetic average Data not available

MEAT PRODUCTS																												
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2*										Alternative method : 3M™ Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type	
						Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean	Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean			
				before	after		cfu/plate a	cfu/plate b	cfu/plate a	cfu/plate b	cfu/g	cfu/g	log cfu/g	log cfu/g			Total cfu/plate	Gaz + cfu/plate	Total cfu/plate	Gaz + cfu/plate	cfu/g	cfu/g	log cfu/g	log cfu/g				
1997	11	Escalope de dinde	Poultry meat										4,03	3,95	3,99									4,02	3,95	3,99	1	a
1997	206	Foie de poulet	Poultry liver										4,19	4,19	4,19									4,5	4,66	4,58	1	a
1997	207	Foie de lapin	Rabbit liver										2,60	2,30	2,45									2,78	3,08	2,93	1	a
1997	210	Pilons de poulet	Poultry meat										2,00	2,60	2,30									3,26	3,19	3,23	1	a
1997	211	Ailes de poulet	Poultry meat										4,62	4,60	4,61									5,13	5,1	5,12	1	a
1997	68	Caille aux raisins	Ready to reheat meat-based product										2,84	2,96	2,90									3,28	3,32	3,30	1	a
1997	113	Gésiers de canard confits	Shredded duck confit										4,75	4,95	4,85									5	4,91	4,96	1	a
1997	50	Steak haché	Ground beef										4,96	4,48	4,72									4,96	4,96	4,96	1	b
1997	116	Minerai	Trimming										3,90	3,87	3,89									3,95	3,89	3,92	1	b
1997	208	Foie de porc	Pork liver										3,48	3,41	3,45									3,59	3,46	3,53	1	b
1997	212	Cervelle	Brain										2,48	2,30	2,39									3,41	3,26	3,34	1	b
1997	4	Rognons au Madère	Ready to reheat meat-based product										1,30	1,30	1,30									1,48	1,48	1,48	1	b
1997	70	Côte de veau à la crème	Ready to reheat meat-based product										1,00	1,30	1,15									1	1,3	1,15	1	b
1997	101	Bœuf carottes	Ready to reheat meat-based product										4,49	4,49	4,49									4,23	4,26	4,25	1	b
1997	17	Chair à tomates	Sausage										5,90	5,74	5,82									5,87	5,89	5,88	1	c
1997	19	Poitrine demi-sel	Half-salt chest										3,48	3,76	3,62									4	3,94	3,97	1	c
1997	20	Rillettes	Rillettes										4,41	4,28	4,35									4,41	4,66	4,54	1	c
1997	23	Jambon blanc	Ham										2,38	2,40	2,39									2,65	2,71	2,68	1	c
1997	25	Chipolatas	Chipolatas										2,13	1,95	2,04									2,46	2,62	2,54	1	c
1997	48	Chipolatas	Chipolatas										3,21	3,10	3,16									3,15	3,45	3,30	1	c
1997	90	Boudin noir	Black sausage										1,95	1,60	1,78									2	1,9	1,95	1	c
1997	91	Rillettes	Rillettes										4,7	4,64	4,67									4,67	4,57	4,62	1	c
1997	92	Poitrine crue	Raw chest										1,00	1,30	1,15									1,48	1,3	1,39	1	c
1997	121	Chipolatas	Chipolatas										5,76	5,56	5,66									5,76	5,65	5,71	1	c
1997	125	Rillettes	Rillettes										1,60	1,48	1,54									2,19	2,73	2,46	1	c
1997	126	Jambon	Ham										3,90	4,00	3,95									4,05	4,11	4,08	1	c
1997	129	Poitrine fumée	Smoked chest										1,00	1,00	1,00									2,04	1,9	1,97	1	c
1997	130	Boudin noir	Black sausage										2,81	2,72	2,77									3,58	3,41	3,50	1	c
1997	205	Chipolatas	Chipolatas										3,49	3,19	3,34									3,65	3,58	3,62	1	c

♦ Analyses performed according to the COFRAC accreditation

DAIRY PRODUCTS																												
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2*										Alternative method : 3M™ Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type	
						Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean	Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean			
				before	after		cfu/plate a	cfu/plate b	cfu/plate a	cfu/plate b	cfu/g	cfu/g	log cfu/g	log cfu/g	Total cfu/plate		Gaz + cfu/plate	Total cfu/plate	Gaz + cfu/plate	cfu/g	cfu/g	log cfu/g	log cfu/g					
1997	38	Lait cru	Raw milk											2,74	2,85	2,80								3	2,96	2,98	2	a
1997	106b	Crème fraîche	Cream											6,19	6,16	6,18								7,4	7,18	7,29	2	a
1997	107b	Crème fraîche	Cream											7,41	7,28	7,35								7,46	7,63	7,55	2	a
1997	119	Lait cru	Raw milk											3,91	3,51	3,71								4,82	4,95	4,89	2	a
2017	6159	Lait cru	Raw milk	7,02	/	100	134				14000	/	4,15	/	4,15	100	109	97	/	/	11000	/	4,04	/	4,04	2	a	
						1000	18									1000	14	12	/	/								
1997	9	Fromage de chèvre	Goat milk cheese											3,13	3,04	3,09								3,48	3,45	3,47	2	b
1997	10	Tomme de brebis	Ewe milk cheese											4,16	4,30	4,23								4,83	4,8	4,82	2	b
1997	42	Munster	Munster											6,59	6,55	6,57								6,75	6,72	6,74	2	b
1997	75	Fromage de chèvre	Goat milk cheese											2,93	3,01	2,97								2,8	3,19	3,00	2	b
1997	85	Raclette au lait cru	Raw milk cheese											3,08	3,06	3,07								3,39	3,36	3,38	2	b
1997	86	Brie de Meaux au lait cru	Brie de Meaux (raw milk)											7,16	7,21	7,19								7,23	7,28	7,26	2	b
1997	110	Brebis demi-sec	Ewe milk cheese											3,39	3,44	3,42								4,12	4,08	4,10	2	b
1997	111	Tomme Mont d'Arrée	Cheese											5,41	5,41	5,41								5,73	5,81	5,77	2	b
1997	120	Brie	Brie											4,37	4,28	4,33								4,19	4,34	4,27	2	b
1997	128	Vieux pané	Cheese											1,95	2,11	2,03								2,77	2,81	2,79	2	b
1997	131	Livarot	Livarot											2,82	2,87	2,85								3,28	3,19	3,24	2	b
1997	132	Munster	Munster											5,55	5,54	5,55								5,85	5,86	5,86	2	b
1997	201	Camembert	Camembert											7,71	7,82	7,77								7,81	7,88	7,85	2	b
1997	202	Reblochon	Reblochon											7,48	7,46	7,47								7,43	7,3	7,37	2	b
1997	203	Camembert	Camembert											7,19	7,12	7,16								7,23	7,27	7,25	2	b
1997	204	Camembert	Camembert											6,19	6,00	6,10								6,28	6,39	6,34	2	b
1997	140	Nougat glacé	Iced nougat											1,30	1,00	1,15								1,95	1,3	1,63	2	c
1997	141	Nougat glacé	Iced nougat											1,00	1,48	1,24								1,56	1,44	1,50	2	c
1997	142	Nougat glacé	Iced nougat											1,48	1,60	1,54								1,66	1,86	1,76	2	c
2017	6226	Crème dessert à la vanille	Dairy dessert	6,95	/	10	15				140	/	2,15	/	2,15	10	23	23	/	/	210	/	2,32	/	2,32	2	c	
						100	0									100	0	0	/	/								
2017	6227	Riz au lait	Dairy dessert	6,98	/	1000	21				21000	/	4,32	/	4,32	1000	63	63	/	/	61000	/	4,79	/	4,79	2	c	
						10000	2									100100	4	4	/	/								
2017	6912	Poudre de lait écrémée	Skimmed milk powder	6,87	/	10	13				180	/	2,26	/	2,26	10	65				670	/	2,83	/	2,83	2	c	
						100	7									100	9											
2017	6913	Poudre de lait écrémée	Skimmed milk powder	6,80	/	1000	97				97000	/	4,99	/	4,99	1000	147				150000	/	5,18	/	5,18	2	c	
						10000	10									10000	18											
2017	6914	Poudre de lait infantile sans probiotiques	Infant formula without probiotics	6,93	/	100	4				400	/	2,60	/	2,60	100	15				1400	/	3,15	/	3,15	2	c	
						1000	2							Ne			1000	0										
2017	6915	Poudre de lait infantile avec probiotiques	Infant formula with probiotics	6,86	/	10	116				1200	/	3,08	/	3,08	10	137				1400	/	3,15	/	3,15	2	c	
						100	12										100	13										
2017	6916	Poudre de lait infantile avec probiotiques	Infant formula with probiotics	6,89	/	1000	60				65000	/	4,81	/	4,81	1000	62				65000	/	4,81	/	4,81	2	c	

• Analyses performed according to the COFRAC accreditation

SEAFOOD																											
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2*										Alternative method : 3M™ Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type
						Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean	Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean		
				before	after		cfu/ plate a	cfu/ plate b	cfu/ plate a	cfu/ plate b	cfu/g	cfu/g	log cfu/g	log cfu/g	Total cfu/plate		Gaz + cfu/plate	Total cfu/plate	Gaz + cfu/plate	cfu/g	cfu/g	log cfu/g	log cfu/g				
1997	124	Sardines	Sardines										1,58	1,51	1,55								2,67	2,73	2,70	3	a
1997	163	Maquereau	Mackerel										3,04	2,73	2,89								3,02	2,98	3,00	3	a
2017	6160	Lieu noir cru	Raw fish	7,06	/	100	Positive oxidase-A.hydrophila /V.fluvialis				<100	/	<2,00	/	<2,00	100	51	8	/	/	4900	/	3,69	/	3,69	3	a
						1000	Positive oxidase-A.hydrophila/ V.fluvialis									1000	3	2	/	/							
2017	6161	Darne de saumon cru	Raw fish	7,05	/	1000	Positive oxidase-A.hydrophila/ V.fluvialis				<1000	/	<3,00	/	<3,00	1000	16	4	/	/	15000	/	4,18	/	4,18	3	a
						10000	Positive oxidase-A.hydrophila/ V.fluvialis									10000	1	0	/	/							
2017	6162	Filet de saumon surgelé	Frozen salmon	6,93	/	10	73				750	/	2,88	/	2,88	10	65	46	/	/	640	/	2,81	/	2,81	3	a
2017	6884	Filet de colin	Hake fillet	7,01	/	10	0				<10	/	<1,00	/	<1,00	10	0	0			<10	/	<1,00	/	<1,00	3	a
						100	0								100	0	0										
2017	6885	Filet de cabillaud	Cod fillet	7,03	/	100	0				<10	/	<1,00	/	<1,00	100	0	0			<10	/	<1,00	/	<1,00	3	a
						1000	0								1000	0	0										
2017	6909	Colin d'Alaska	Hake	6,91	/	10	36				360	/	2,56	/	2,56	10	66				640	/	2,81	/	2,81	3	a
						100	3								100	4											
2017	6910	Colin d'Alaska	Hake	6,95	/	100	56				5400	/	3,73	/	3,73	100	87				8300	/	3,92	/	3,92	3	a
						1000	3								1000	4											
2017	6911	Saumon	Salmon	6,80	/	1000	74				76000	/	4,88	/	4,88	1000	97				100000	/	5,00	/	5,00	3	a
						10000	10								10000	16											
1997	88	Cocktail de fruits de mer	Precooked seafood										1,60	1,70	1,65								1,7	1,78	1,74	3	b
1997	36	Moules	Mussels										1,30	1,30	1,30								1,84	1,6	1,72	3	b
2017	6228	Nem au crabe	RTRH Seafood	6,90	/	100	27				2500	/	3,40	/	3,40	100	34	34	/	/	3500	/	3,54	/	3,54	3	b
						1000	1									1000	4	4	/	/							
2017	6229	Beignets de crevettes	RTRH Seafood	6,82	/	1000	9				10000	/	4,00	/	4,00	1000	24	24	/	/	25000	/	4,40	/	4,40	3	b
						10000	2									10000	3	3	/	/							
2017	6230	Parmentier de poisson ciboulette	RTRH seafood	6,79	/	1000	108				110000	/	5,04	/	5,04	1000	91	91	/	/	92000	/	4,96	/	4,96	3	b
						10000	11									10000	10	10	/	/							
1997	60	Feuilleté fruits de mer	Ready to reheat seafood product										4,49	4,46	4,48								4,39	4,39	4,39	3	c
1997	62	Coquille à la bretonne	Ready to reheat seafood product										1,00	1,30	1,15								1	1,48	1,24	3	c
1997	67	Filet de julienne en sauce	Ready to reheat seafood product										2,85	2,58	2,72								2,53	2,76	2,65	3	c
1997	73	Saumon fumé	Smoked salmon										3,56	3,34	3,45								3,6	3,49	3,55	3	c
1997	105b	Saumon fumé	Smoked salmon										5,26	5,00	5,13								5,28	5,39	5,34	3	c
1997	144	Saumon fumé	Smoked salmon										5,26	5,45	5,36								4,54	4,48	4,51	3	c

♦ Analyses performed according to the COFRAC accreditation

VEGETABLES																											
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2*										Alternative method : 3M™ Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type
						Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean	Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean		
				before	after		cfu/plate a	cfu/plate b	cfu/plate a	cfu/plate b	cfu/g	cfu/g	log cfu/g	log cfu/g			Total cfu/plate	Gaz + cfu/plate	Total cfu/plate	Gaz + cfu/plate	cfu/g	cfu/g	log cfu/g	log cfu/g			
1997	39	Courgette	Zucchini										1,30	1,84	1,57								2	1,7	1,85	4	a
1997	81	Chou rouge râpé	Grated red cabbage										2,20	2,15	2,18								2,51	2,56	2,54	4	a
1997	154	Brocolis surgelés	Frozen broccolis										1,48	1,90	1,69								1,7	1,7	1,70	4	a
1997	155	Brocolis surgelés	Frozen broccolis										1,85	1,90	1,88								1,7	1,6	1,65	4	a
1997	156	Brocolis surgelés	Frozen broccolis										2,58	2,54	2,56								3,09	3,06	3,08	4	a
1997	159	Carottes surgelées	Frozen carrots										3,18	3,18	3,18								3,61	3,48	3,55	4	a
1997	160	Tomates surgelées	Frozen tomatoes										2,00	1,95	1,98								2,34	2,41	2,38	4	a
1997	161	Tomates surgelées	Frozen tomatoes										2,44	2,42	2,43								2,9	2,86	2,88	4	a
1997	162	Pommes de terre surgelées	Frozen potatoes										1,78	1,90	1,84								2,08	2,04	2,06	4	a
1997	82	Céleri râpé	Grated celery										3,08	3,04	3,06								2,62	2,83	2,73	4	b
1997	102	Salade primavera	Salad										3,67	3,61	3,64								3,74	3,79	3,77	4	b
2017	6231	Betteraves rouges assaisonnées	Seasoned red beetroot	6,81	/	10	26				270	/	2,43	/	2,43	10	22	22	/	/	250	/	2,40	/	2,40	4	b
						100	4							100	5	5	/	/									
2017	6232	Carottes râpées au citron	Seasoned grated carrots	6,78	/	10	41				440	/	2,64	/	2,64	10	38	0	/	/	360	/	2,56	/	2,56	4	b
						100	7						100	2	0	/	/										
2017	6233	Duo carottes céleri assaisonnés	Seasoned grated celery carrots	6,75	/	10	16				160	/	2,20	/	2,20	10	15	15	/	/	170	/	2,23	/	2,23	4	
						100	2						100	4	4	/	/										
1997	35	Pomme de terre	Potatoes										4,53	3,81	4,17								4,72	4,8	4,76	4	c
2017	6234	Boulettes aux légumes carottes petits pois mais	RTRH beef	7,00	/	100	62				6000	/	3,78	/	3,78	100	67	67	/	/	6500	/	3,81	/	3,81	4	c
						1000	4							1000	4	4	/	/									
2017	6235	Boulettes aux légumes carottes petits pois mais	RTRH beef	7,00	/	10	24				230	/	2,36	/	2,36	10	21	21	/	/	210	/	2,32	/	2,32	4	c
						100	1							100	2	2	/	/									
2017	6236	Gallettes gourmandes lentilles carottes	RTRH vegetables	6,97	/	10	62				640	/	2,81	/	2,81	10	73	73	/	/	740	/	2,87	/	2,87	4	c
						100	8							100	8	8	/	/									
2017	6237	Fallafels pois chiches fèves coriandre menthe	RTRH vegetables	6,80	/	100	90				9200	/	3,96	/	3,96	100	98	98	/	/	9700	/	3,99	/	3,99	4	c
						1000	11							1000	9	9	/	/									

♦ Analyses performed according to the COFRAC accreditation

MISCELLANEOUS AND EGG-BASED PRODUCTS																													
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2*									Alternative method : 3M™ Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Trace			
						Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean	Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2			Log cfu/g Mean		
				before	after		cfu/plate a	cfu/plate b	cfu/plate a	cfu/plate b							cfu/g	cfu/g	log cfu/g	log cfu/g								Total cfu/plate	Gaz + cfu/plate
1997	54	Bouchée à la reine	Ready to reheat meat-based product											3,28	3,37	3,33									3,26	3,07	3,17	5	a
1997	64	Croque-monsieur	Croque-monsieur											3,57	3,78	3,68									3,75	3,8	3,78	5	a
1997	117	Raviolis	Raviolis											2	2	2,00									2,78	2,78	2,78	5	a
2017	6238	Cannelloni pur bœuf	RTRH beef	7,05	/	10	55				560	/	2,75	/	2,75	10	67	67	/	/	680	/	2,83	/	2,83	5	a		
						100	7									100	8	8	/	/									
2017	6239	Pizza jambon fromage	RTRH pizza	7,03	/	100	48				5000	/	3,70	/	3,70	100	57	57	/	/	6100	/	3,79	/	3,79	5	a		
						1000	7									1000	10	10	/	/									
1997	122	Eclair vanille	Pastry											2,48	2	2,24									3,66	3,66	3,66	5	b
1997	78	Chocolats	Chocolates											1,78	1,48	1,63									2,26	2,23	2,25	5	b
1997	118	Chou chantilly	Pastry											4,34	4,48	4,41									4,51	4,62	4,57	5	b
2017	6240	Flan pâtissier	Custard pastry	7,10	/	1000	10				10000	/	4,00	/	4,00	1000	10	10	/	/	11000	/	4,04	/	4,04	5	b		
						10000	1									10000	2	2	/	/									
2017	6241	Eclair au chocolat	Pastry	7,11	/	1000	22				23000	/	4,36	/	4,36	1000	28	28	/	/	26000	/	4,41	/	4,41	5	b		
						10000	3									10000	1	1	/	/									
1997	29	Crème pâtissière	Custard											1	1,3	1,15									1,95	1,84	1,90	5	c
1997	56	Œuf en gelée	Egg in jelly											2,89	2,89	2,89									2,78	2,91	2,85	5	c
1997	58	Mayonnaise	Mayonnaise											2,71	2,86	2,79									2,3	2,39	2,35	5	c
1997	84	Crème pâtissière	Custard											1,78	1,7	1,74									2,13	1,84	1,99	5	c
1997	104	Mayonnaise	Mayonnaise											3,15	3,21	3,18									3,76	3,8	3,78	5	c
1997	112	Coule d'œuf	Whole egg											4,48	4,54	4,51									4,49	4,44	4,47	5	c

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FEED PRODUCTS																											
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2*									Alternative method : 3M™ Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type	
						Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean	Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2			Log cfu/g Mean
				before	after		cfu/plate a	cfu/plate b	cfu/plate a	cfu/plate b							cfu/g	cfu/g	log cfu/g	log cfu/g							
2010	150	Viande bovine hachée pour animaux	Beef meat for animals			1000	44	66	48	54	53000	50000	4,72	4,70	4,71	10000	5	5	9	7	45000	82000	4,65	4,91	4,78	6	a
						10000	5	1	6	2						100000	0	0	0	0							
2010	151	Viande bovine pour animaux en morceaux	Beef meat for animals			100	>150	>150	>150	>150	25000	26000	4,40	4,41	4,41	100	>100	77	>100	81	36000	31000	4,56	4,49	4,52	6	a
						1000	20	30	23	28						N'	N'	N'	N'	1000							
2010	152	Viande bovine pour animaux	Beef meat for animals			100	>150	>150	>150	>150	49000	27000	4,69	4,43	4,56	100	Unreadable				22000	35000	4,34	4,54	4,44	6	a
						1000	57	41	22	32						N'	N'	N'	N'	1000							
2010	153	Abats frais pour animaux	Fresh offal for animals			1000	15	18	23	13	17000	17000	4,23	4,23	4,23	1000	41	15	20	8	38000	19000	4,58	4,28	4,43	6	a
						10000	2	2	1	0						10000	1	0	1	1							
2010	657	Flanchet sans os pour animaux	Beef meat for animals			1000	>150	>150	>150	>150	850000	1100000	5,93	6,04	5,99	1000	>100	>100	>100	>100	660000	840000	5,82	5,92	5,87	6	a
						10000	87	82	>150	110						10000	66	36	84	53							
2010	659	Cous de volaille pour animaux	Poultry neck for animals			1000	>150	>150	>150	>150	620000	520000	5,79	5,72	5,75	1000	>100	>100	>100	>100	650000	710000	5,81	5,85	5,83	6	a
						10000	83	41	41	63						N'	N'	N'	N'	10000							
2010	440	Brisures de riz pour chien	Broken rice for dog			100	>150	117	>150	>150	12000	19000	4,08	4,28	4,18	100	94	0	>150	0	9500	26000	3,98	4,41	4,20	6	b
						1000	24	5	14	24						N'	N'	N'	N'	1000							
2010	763	Saucisson pour chien	Sausage for dog			10	4	6	6	4	50	50	1,70	1,70	1,70	10	6	6	4	4	55	45	1,74	1,65	1,70	6	b
						100	0	0	0	0						100	0	0	1	1							
2010	765	Saucisson pour chien	Sausage for dog			10	61	61	44	52	600	480	2,78	2,68	2,73	10	56	56	61	61	540	590	2,73	2,77	2,75	6	b
						100	4	6	4	5						100	3	3	4	4							
2010	774	Mini filets pour chat au lapin	Pâté for cat			10	56	52	49	42	510	470	2,71	2,67	2,69	10	55	55	70	70	560	680	2,75	2,83	2,79	6	b
						100	1	2	7	6						100	7	7	5	5							
2017	6242	Saucisson pour chien	Sausage for dog	6,60	6,93	100	24				2300	/	3,36	/	3,36	100	26	26	/	/	2700	/	3,43	/	3,43	6	b
						1000	1									1000	4	4	/	/							
2010	154	Matières premières pour alimentation animale	Raw material			1000	>150	>150	>150	>150	<10000	35000	<4,00	4,54	<4,27	1000	>100	1	>100	0	260000	340000	5,41	5,53	5,47	6	c
						10000	0	0	0	7						10000	26	0	34	0							
2010	155	Matières premières pour alimentation animale	Raw material			100	54	52	23	0	5300	1100	3,72	3,04	3,38	100	59	0	89	0	6000	8800	3,78	3,94	3,86	6	c
						1000	4	7	1	1						1000	7	0	8	0							
2010	441	Matières premières pour alimentation animale	Raw material			10	0	1	0	0	<5	<10	0,70*	<1,00	<0,85	10	1	1	4	4	10	40	1,00	1,60	1,30*	6	c
						100	0	0	0	0						100	0	0	0	0							
2010	661	Matières premières pour alimentation animale	Raw material			10	7	13	14	12	95	140	1,98	2,15	2,06	10	17	15	14	12	160	140	2,20	2,15	2,18	6	c
						100	1	0	3	2						100	0	0	1	1							
2010	662	Matières premières pour alimentation animale	Raw material			1000	134	140	>150	143	130000	140000	5,11	5,15	5,13	1000	111	0	132	0	120000	121000	5,08	5,08	5,08	6	c
						10000	10	11	15	10						10000	16	0	1	1							
2017	6163	Protéines déshydratées de volaille	Poultry proteins dehydrated	6,76	/	10	0				<10	/	<1,00	/	<1,00	10	0	0	/	/	<10	/	<1,00	/	<1,00	6	c
						100	0									100	0	0	/	/							
2017	6164	Protéines déshydratées de volaille	Poultry proteins dehydrated	6,76	/	10	0				<10	/	<1,00	/	<1,00	10	0	0	/	/	<10	/	<1,00	/	<1,00	6	c
						100	0									100	0	0	/	/							
2017	6907	Protéines déshydratées de volaille	Dehydrated poultry proteins	6,71	/	100	>150				62000	/	4,79	/	4,79	100	>100	>100			73000	/	4,86	/	4,86	6	c
						1000	62									N'	N'	N'	N'	1000							
2017	6908	Protéines déshydratées de volaille	Dehydrated poultry proteins	6,83	/	1000	>150				800000	/	5,90	/	5,90	1000	>100	>100			950000	/	5,98	/	5,98	6	c
						10000	80									N'	N'	N'	N'	10000							

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ENVIRONMENTAL SAMPLES																											
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2*									Alternative method : 3M™ Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type	
						Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean	Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2			Log cfu/g Mean
				before	after		cfu/plate a	cfu/plate b	cfu/plate a	cfu/plate b	cfu/g	cfu/g	log cfu/g	log cfu/g			Total cfu/plate	Gaz + cfu/plate	Total cfu/plate	Gaz + cfu/plate	cfu/g	cfu/g	log cfu/g	log cfu/g			
2015	3844	Chiffonnette Microcut petits pois	Wipe (peas industry)	7,00	/	10	2	/	2	/	20	20	1,30*	1,30*	1,30*	10	13	/	14	/	130	150	2,11	2,18	2,15	7	a
						100	0	/	0	/						100	1	/	2	/							
2015	3903	Chiffonnette balance après désinfection cuisson riz	Wipe (rice industry)	7,20	/	10	6	/	13	/	60	120	1,78	2,08	1,93	10	56	/	47	/	600	500	2,78	2,70	2,74	7	a
						100	0	/	0	/						100	10	/	8	/							
2015	3904	Chiffonnette plan de travail fabrication madeleine après désinfection	Wipe (pastry industry)	7,16	/	100	1	/	1	/	100	100	2,00*	2,00*	2,00*	100	31	/	40	/	2900	4000	3,46	3,60	3,53	7	a
						1000	0	/	0	/						1000	1	/	4	/							
2015	3905	Chiffonnette table de cuisson béchamel	Wipe (bechamel sauce)	7,00	/	100	0	/	0	/	<100	<100	<2,00	<2,00	<2,00	100	21	/	12	/	2000	1100	3,30	3,04	3,17	7	a
						1000	0	/	0	/						1000	1	/	0	/							
2015	3906	Chiffonnette table découpe emmenthal	Wipe (cheese industry)	6,97	/	10	0	/	1	/	<10	10	<1,00	1,00*	<1,00	10	1	/	0	/	10	<10	1,00* Detection	<1,00	<1,00	7	a
						100	0	/	0	/						100	0	/	0	/							
2015	4011	Ecouvillon tapis entrée peleuse après désinfection	Swab after cleaning (fish industry)	7,08	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	a
						100	0	/	0	/						100	0	/	0	/							
2015	4012	Ecouvillon tapis diviseur après désinfection	Swab after cleaning (fish industry)	7,06	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	a
						100	0	/	0	/						100	0	/	0	/							
2015	4013	Lingette tapis parage après désinfection	Wipe after cleaning (fish industry)	7,19	/	10	>150	/	>150	/	>15000	12000	>4,18	4,08	>4,13	10	>100	/	>100	/	>10000	>10000	>4,00	>4,00	>4,00	7	a
						100	>150	/	124	/						100	>100	/	>100	/							
2015	4014	Lingette maille sortie parage après désinfection	Wipe after cleaning (fish industry)	7,19	/	10	>150	/	>150	/	3800	4800	3,58	3,68	3,63	10	>100	/	>100	/	4800	4800	3,68	3,68	3,68	7	a
						100	38	/	48	/						100	48	/	48	/							
2015	4015	Lingette tapis parage après désinfection	Wipe after cleaning (fish industry)	7,18	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	a
						100	0	/	0	/						100	0	/	0	/							
2015	4494	Chiffonnette local vaisselle atelier	Wipe (dishwasher)	7,01	/	10	>1500	/	>1500	/	>15000	>15000	>4,18	>4,18	>4,18	10	>1000	/	>1000	/	>10000	>10000	>4,00	>4,00	>4,00	7	a
						100	>15000	/	>15000	/						100	>10000	/	>10000	/							
2015	4495	Chiffonnette table atelier	Wipe (table)	6,97	/	10	>1500	/	>1500	/	>15000	>15000	>4,18	>4,18	>4,18	10	>1000	/	>1000	/	>10000	>10000	>4,00	>4,00	>4,00	7	a
						100	>15000	/	>15000	/						100	>10000	/	>10000	/							
2015	4496	Chiffonnette cutter	Wipe (cutter)	7,00	/	10	>1500	/	>1500	/	>15000	>15000	>4,18	>4,18	>4,18	10	>1000	/	>1000	/	>10000	>10000	>4,00	>4,00	>4,00	7	a
						100	>15000	/	>15000	/						100	>10000	/	>10000	/							
2015	4497	Chiffonnette poussoir	Wipe (push-button)	7,03	/	100	>15000	/	>15000	/	>150000	>150000	>5,18	>5,18	>5,18	100	>10000	/	>10000	/	>100000	>100000	>5,00	>5,00	>5,00	7	a
						1000	>150000	/	>150000	/						1000	>100000	/	>100000	/							
2015	4562	Chiffonnette table préparation pâte	Wipe	6,92	/	10	11	/	8	/	120	80	2,08	1,90 Ne	1,99	10	29	/	24	/	270	250	2,43	2,40	2,41	7	a
						100	2	/	1	/						100	1	/	3	/							
2015	4563	Chiffonnette cuve broyeur après nettoyage	Wipe after cleaning	7,05	/	10	71	/	61	/	670	610	2,83	2,79	2,81	10	123	/	132	/	1200	1300	3,08	3,11	3,10	7	a
						100	3	/	6	/						100	13	/	15	/							
2015	4564	Chiffonnette grille four fumage après nettoyage	Wipe after cleaning	6,94	/	10	36	/	29	/	330	270	2,52	2,43	2,47	10	15	/	23	/	140	220	2,15	2,34	2,24	7	a
						100	0	/	1	/						100	0	/	1	/							
2015	4565	Chiffonnette table découpe après nettoyage	Wipe after cleaning	6,91	/	10	22	/	26	/	220	240	2,34	2,38	2,36	10	46	/	46	/	460	440	2,66	2,64	2,65	7	a
						100	2	/	0	/						100	5	/	2	/							
2015	3841	Eau de rinçage n°2 petits pois après cuisson	Process water (peas)	7,01	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	b
						100	0	/	0	/						100	0	/	0	/							
2015	3845	Eau de cuisson petits pois	Process water (peas)	7,00	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	8	/	13	/	80	130	1,90 Ne	2,11	2,01	7	b
						100	0	/	0	/						100	0	/	1	/							
2015	3907	Eau de rinçage bēcher (PDL+eau)	Process water (milk industry)	6,98	/	100	0	/	0	/	<100	<100	<2,00	<2,00	<2,00	100	1	/	0	/	100	<100	2,00*	<2,00	<2,00	7	b
						1000	0	/	0	/						1000	0	/	0	/							

ENVIRONMENTAL SAMPLES																											
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2*										Alternative method : 3M™ Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type
						Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean	Dilution	Rep 1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g Mean		
				before	after		cfu/plate a	cfu/plate b	cfu/plate a	cfu/plate b	cfu/g	cfu/g	log cfu/g	log cfu/g			Total cfu/plate	Gaz + cfu/plate	Total cfu/plate	Gaz + cfu/plate	cfu/g	cfu/g	log cfu/g	log cfu/g			
2015	4006	Eau dessalage	Process water (fish industry)	6,95	/	10	25	/	11	/	230	100	2,36	2,00	2,18	10	20	/	22	/	180	200	2,26	2,30	2,28	7	b
						100	0	/	0	/						100	0	/	0	/							
2015	4007	Eau peleuse	Process water (fish industry)	7,20	/	1	0	/	0	/	<1	<1	<0,00	<0,00	<0,00	1	0	/	0	/	<1	<1	<0,00	<0,00	<0,00	7	b
						10	0	/	0	/						10	0	/	0	/							
2015	4008	Eau pareuse	Process water (fish industry)	7,14	/	10	>150	/	>150	/	5500	11000	3,74	4,04	3,89	10	>100	/	>100	/	3500	3300	3,54	3,52	3,53	7	b
						100	55	/	106	/						100	35	/	33	/							
2015	4009	Eau laveuse poissons	Process water (fish industry)	7,12	/	10	(>150)	/	(>150)	/	<2,00	<2,00	<2,00	<2,00	<2,00	10	>100	/	>100	/	3200	5600	3,51	3,75	3,63	7	b
						100	0 (ox+)	/	0	/						100	32	/	56	/							
2015	4010	Eau épineuse	Process water (fish industry)	7,20	/	10	>150	/	>150	/	2800	1300	3,45	3,11	3,28	10	78	/	98	/	860	1000	2,93	3,00	2,97	7	b
						100	28	/	13	/						100	17	/	14	/							
2017	6243	Eau de rinçage (industrie porc)	Rinsed water (Pork industry)	7,01	/	10	35				340	/	2,53	/	2,53	10	38	38	/	/	360	/	2,56	/	2,56	7	b
						100	2									100	1	1	/	/							
2017	6244	Eau de lavage sciage viande (porc industrie)	Wash water (pork industry)	7,03	/	1000	33				32000	/	4,51	/	4,51	1000	67	67	/	/	64000	/	4,81	/	4,81	7	b
						10000	2									10000	3	3	/	/							
2015	3676	Poussières industrie ovoproduits	Dusts from egg industry	6,76	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	c
						100	0	/	0	/						100	0	/	0	/							
2015	3677	Poussières d'aspirateur (atelier)	Dusts	6,93	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	c
						100	0	/	0	/						100	0	/	0	/							
2015	3678	Poussières industrie laitière	Dusts from dairy industry	6,36	/	10	5	/	4	/	50	40	1,70 Ne	1,60 Ne	1,65	10	11	/	13	/	110	130	2,04	2,11	2,08	7	c
						100	0	/	0	/						100	1	/	1	/							
2015	3679	Poussières industrie laitière	Dusts from dairy industry	6,48	/	100	32	/	26	/	3500	3700	3,54	3,57	3,56	1000	9	/	9	/	9000	9000	3,95 Ne	3,95 Ne	3,95	7	c
						1000	6	/	4	/						10000	1	/	1	/							
2017	6165	Déchets au sol découpe porc n°1	Dusts n°1 (pork industry)	7,17	/	10	9				90 Ne	/	1,95	/	1,95	10	17	12	/	/	160	/	2,20	/	2,20	7	c
						100	1									100	0	0	/	/							
2017	6166	Déchets au sol découpe porc n°2	Dusts n°2 (pork industry)	7,14	/	1000	21				19000	/	4,28	/	4,28	1000	24	0	/	/	25000	/	4,40	/	4,40	7	c
						10000	0									10000	4	0	/	/							
2017	6167	Déchets au sol découpe porc n°3	Dusts n°3 (pork industry)	7,16	/	10	35				330	/	2,52	/	2,52	10	36	0	/	/	340	/	2,53	/	2,53	7	c
						100	1									100	1	1	/	/							

Appendix E - Relative trueness study: summarized results and calculations

Category	Type	N°sample	Incubation : 22 h									
			Log cfu/g		Mean	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	a	11	3,99	3,99	3,99	-0,01			#N/A		#N/A	
	a	206	4,19	4,58	4,39	0,39			#N/A		#N/A	
	a	207	2,45	2,93	2,69	0,48			#N/A		#N/A	
	a	210	2,30	3,23	2,76	0,93			#N/A		#N/A	
	a	211	4,61	5,12	4,86	0,51			#N/A		#N/A	
	a	68	2,90	3,30	3,10	0,40			#N/A		#N/A	
	a	113	4,85	4,96	4,90	0,11			#N/A		#N/A	
	b	50	4,72	4,96	4,84	0,24			#N/A		#N/A	
	b	116	3,89	3,92	3,90	0,04			#N/A		#N/A	
	b	208	3,45	3,53	3,49	0,08			#N/A		#N/A	
	b	212	2,39	3,34	2,86	0,95			#N/A		#N/A	
	b	4	1,30	1,48	1,39	0,18			#N/A		#N/A	
	b	70	1,15	1,15	1,15	0,00			#N/A		#N/A	
	b	101	4,49	4,25	4,37	-0,25			#N/A		#N/A	
	c	17	5,82	5,88	5,85	0,06			#N/A		#N/A	
	c	19	3,62	3,97	3,80	0,35			#N/A		#N/A	
	c	20	4,35	4,54	4,44	0,19			#N/A		#N/A	
	c	23	2,39	2,68	2,54	0,29			#N/A		#N/A	
	c	25	2,04	2,54	2,29	0,50			#N/A		#N/A	
	c	48	3,16	3,30	3,23	0,15			#N/A		#N/A	
	c	90	1,78	1,95	1,86	0,18			#N/A		#N/A	
	c	91	4,67	4,62	4,65	-0,05			#N/A		#N/A	
	c	92	1,15	1,39	1,27	0,24			#N/A		#N/A	
	c	121	5,66	5,71	5,68	0,04			#N/A		#N/A	
	c	125	1,54	2,46	2,00	0,92			#N/A		#N/A	
	c	126	3,95	4,08	4,02	0,13			#N/A		#N/A	
	c	129	1,00	1,97	1,49	0,97			#N/A		#N/A	
	c	130	2,77	3,50	3,13	0,73			#N/A		#N/A	
	c	205	3,34	3,62	3,48	0,28			#N/A		#N/A	
Average category 1						0,31						
Standard deviation of differences category 1						0,32						
2	a	38	2,80	2,98	2,89	0,19			#N/A		#N/A	
	a	106b	6,18	7,29	6,73	1,12			#N/A		#N/A	
	a	107b	7,35	7,55	7,45	0,20			#N/A		#N/A	
	a	119	3,71	4,89	4,30	1,18			#N/A		#N/A	
	a	6159	4,15	4,04	4,09	-0,10			#N/A		#N/A	
	b	9	3,09	3,47	3,28	0,38			#N/A		#N/A	
	b	10	4,23	4,82	4,52	0,58			#N/A		#N/A	
	b	42	6,57	6,74	6,65	0,16			#N/A		#N/A	
	b	75	2,97	3,00	2,98	0,03			#N/A		#N/A	
	b	85	3,07	3,38	3,22	0,31			#N/A		#N/A	
	b	86	7,19	7,26	7,22	0,07			#N/A		#N/A	
	b	110	3,42	4,10	3,76	0,69			#N/A		#N/A	
	b	111	5,41	5,77	5,59	0,36			#N/A		#N/A	
	b	120	4,33	4,27	4,30	-0,06			#N/A		#N/A	
	b	128	2,03	2,79	2,41	0,76			#N/A		#N/A	
	b	131	2,85	3,24	3,04	0,39			#N/A		#N/A	
	b	132	5,55	5,86	5,70	0,31			#N/A		#N/A	
	b	201	7,77	7,85	7,81	0,08			#N/A		#N/A	
	b	202	7,47	7,37	7,42	-0,11			#N/A		#N/A	
	b	203	7,16	7,25	7,20	0,09			#N/A		#N/A	
	b	204	6,10	6,34	6,22	0,24			#N/A		#N/A	
	c	140	1,15	1,63	1,39	0,48			#N/A		#N/A	
	c	141	1,24	1,50	1,37	0,26			#N/A		#N/A	
	c	142	1,54	1,76	1,65	0,22			#N/A		#N/A	
	c	6226	2,15	2,32	2,23	0,18			#N/A		#N/A	
	c	6227	4,32	4,79	4,55	0,46			#N/A		#N/A	
	c	6912	2,26	2,83	2,54	0,57			#N/A		#N/A	
	c	6913	4,99	5,18	5,08	0,19			#N/A		#N/A	
	c	6914	2,60	3,15	2,87	0,54			#N/A		#N/A	
	c	6915	3,08	3,15	3,11	0,07			#N/A		#N/A	
	c	6916	4,81	4,81	4,81	0,00			#N/A		#N/A	
Average category 2						0,32						
Standard deviation of differences category 2						0,31						
3	a	124	1,55	2,70	2,12	1,16			#N/A		#N/A	
	a	163	2,89	3,00	2,94	0,12			#N/A		#N/A	
	a	6160	1,00		#N/A			3,69	#N/A		2,35	2,69
	a	6161	2,00		#N/A			4,18	#N/A		3,09	2,18
	a	6162	2,88	2,81	2,84	-0,07			#N/A		#N/A	
	a	6884	0,00		#N/A			0,00	#N/A		0,00	0,00
	a	6885	0,00		#N/A			0,00	#N/A		0,00	0,00
	a	6909	2,56	2,81	2,68	0,25			#N/A		#N/A	
	a	6910	3,73	3,92	3,83	0,19			#N/A		#N/A	
	a	6911	4,88	5,00	4,94	0,12			#N/A		#N/A	
	b	88	1,65	1,74	1,70	0,09			#N/A		#N/A	
	b	36	1,30	1,72	1,51	0,42			#N/A		#N/A	
	b	6228	3,40	3,54	3,47	0,15			#N/A		#N/A	
	b	6229	4,00	4,40	4,20	0,40			#N/A		#N/A	
	b	6230	5,04	4,96	5,00	-0,08			#N/A		#N/A	
	c	60	4,48	4,39	4,43	-0,09			#N/A		#N/A	
	c	62	1,15	1,24	1,20	0,09			#N/A		#N/A	
	c	67	2,72	2,65	2,68	-0,07			#N/A		#N/A	
	c	73	3,45	3,55	3,50	0,09			#N/A		#N/A	
	c	105b	5,13	5,34	5,23	0,21			#N/A		#N/A	
	c	144	5,36	4,51	4,93	-0,85			#N/A		#N/A	
Average category 3						0,12						
Standard deviation of differences category 3						0,38						

Category	Type	N°sample	Incubation : 22 h									
			Log cfu/g		Mean	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				
4	a	39	1,57	1,85	1,71	0,28			#N/A		#N/A	
	a	81	2,18	2,54	2,36	0,36			#N/A		#N/A	
	a	154	1,69	1,70	1,70	0,01			#N/A		#N/A	
	a	155	1,88	1,65	1,76	-0,23			#N/A		#N/A	
	a	156	2,56	3,08	2,82	0,52			#N/A		#N/A	
	a	159	3,18	3,55	3,36	0,37			#N/A		#N/A	
	a	160	1,98	2,38	2,18	0,40			#N/A		#N/A	
	a	161	2,43	2,88	2,66	0,45			#N/A		#N/A	
	a	162	1,84	2,06	1,95	0,22			#N/A		#N/A	
	b	82	3,06	2,73	2,89	-0,34			#N/A		#N/A	
	b	102	3,64	3,77	3,70	0,13			#N/A		#N/A	
	b	6231	2,43	2,40	2,41	-0,03			#N/A		#N/A	
	b	6232	2,64	2,56	2,60	-0,09			#N/A		#N/A	
	b	6233	2,20	2,23	2,22	0,03			#N/A		#N/A	
	c	35	4,17	4,76	4,47	0,59			#N/A		#N/A	
	c	6234	3,78	3,81	3,80	0,03			#N/A		#N/A	
	c	6235	2,36	2,32	2,34	-0,04			#N/A		#N/A	
	c	6236	2,81	2,87	2,84	0,06			#N/A		#N/A	
	c	6237	3,96	3,99	3,98	0,02			#N/A		#N/A	
Average category 4						0,14						
Standard deviation of differences category 4						0,25						
5	a	54	3,33	3,17	3,25	-0,16			#N/A		#N/A	
	a	64	3,68	3,78	3,73	0,10			#N/A		#N/A	
	a	117	2,00	2,78	2,39	0,78			#N/A		#N/A	
	a	6238	2,75	2,83	2,79	0,08			#N/A		#N/A	
	a	6239	3,70	3,79	3,74	0,09			#N/A		#N/A	
	b	122	2,24	3,66	2,95	1,42			#N/A		#N/A	
	b	78	1,63	2,25	1,94	0,62			#N/A		#N/A	
	b	118	4,41	4,57	4,49	0,15			#N/A		#N/A	
	b	6240	4,00	4,04	4,02	0,04			#N/A		#N/A	
	b	6241	4,36	4,41	4,39	0,05			#N/A		#N/A	
	c	29	1,15	1,90	1,52	0,75			#N/A		#N/A	
	c	56	2,89	2,85	2,87	-0,05			#N/A		#N/A	
	c	58	2,79	2,35	2,57	-0,44			#N/A		#N/A	
	c	84	1,74	1,99	1,86	0,25			#N/A		#N/A	
	c	104	3,18	3,78	3,48	0,60			#N/A		#N/A	
	c	112	4,51	4,47	4,49	-0,04			#N/A		#N/A	
Average category 5						0,26						
Standard deviation of differences category 5						0,46						
6	a	150	4,71	4,78	4,75	0,07			#N/A		#N/A	
	a	151	4,41	4,52	4,47	0,12			#N/A		#N/A	
	a	152	4,56	4,44	4,50	-0,12			#N/A		#N/A	
	a	153	4,23	4,43	4,33	0,20			#N/A		#N/A	
	a	657	5,99	5,87	5,93	-0,11			#N/A		#N/A	
	a	659	5,75	5,83	5,79	0,08			#N/A		#N/A	
	b	440	4,18	4,20	4,19	0,02			#N/A		#N/A	
	b	763	1,70	1,70	1,70	0,00			#N/A		#N/A	
	b	765	2,73	2,75	2,74	0,02			#N/A		#N/A	
	b	774	2,69	2,79	2,74	0,10			#N/A		#N/A	
	b	6242	3,36	3,43	3,40	0,07			#N/A		#N/A	
	c	154	3,27		#N/A			5,47	#N/A		4,37	2,20
	c	155	3,38	3,86	3,62	0,48			#N/A		#N/A	
	c	441	0,00		#N/A			1,30	#N/A		0,65	1,30
	c	661	2,06	2,18	2,12	0,11			#N/A		#N/A	
	c	662	5,13	5,08	5,11	-0,05			#N/A		#N/A	
	c	6163	0,00		#N/A			0,00	#N/A		0,00	0,00
	c	6164	0,00		#N/A			0,00	#N/A		0,00	0,00
	c	6907	4,79	4,86	4,83	0,07			#N/A		#N/A	
	c	6908	5,90	5,98	5,94	0,07			#N/A		#N/A	
Average category 6						0,07						
Standard deviation of differences category 6						0,14						

Category	Type	N°sample	Incubation : 22 h									
			Log cfu/g		Mean	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				
4	a	39	1,57	1,85	1,71	0,28			#N/A		#N/A	
	a	81	2,18	2,54	2,36	0,36			#N/A		#N/A	
	a	154	1,69	1,70	1,70	0,01			#N/A		#N/A	
	a	155	1,88	1,65	1,76	-0,23			#N/A		#N/A	
	a	156	2,56	3,08	2,82	0,52			#N/A		#N/A	
	a	159	3,18	3,55	3,36	0,37			#N/A		#N/A	
	a	160	1,98	2,38	2,18	0,40			#N/A		#N/A	
	a	161	2,43	2,88	2,66	0,45			#N/A		#N/A	
	a	162	1,84	2,06	1,95	0,22			#N/A		#N/A	
	b	82	3,06	2,73	2,89	-0,34			#N/A		#N/A	
	b	102	3,64	3,77	3,70	0,13			#N/A		#N/A	
	b	6231	2,43	2,40	2,41	-0,03			#N/A		#N/A	
	b	6232	2,64	2,56	2,60	-0,09			#N/A		#N/A	
	b	6233	2,20	2,23	2,22	0,03			#N/A		#N/A	
	c	35	4,17	4,76	4,47	0,59			#N/A		#N/A	
	c	6234	3,78	3,81	3,80	0,03			#N/A		#N/A	
	c	6235	2,36	2,32	2,34	-0,04			#N/A		#N/A	
	c	6236	2,81	2,87	2,84	0,06			#N/A		#N/A	
	c	6237	3,96	3,99	3,98	0,02			#N/A		#N/A	
Average category 4						0,14						
Standard deviation of differences category 4						0,25						
5	a	54	3,33	3,17	3,25	-0,16			#N/A		#N/A	
	a	64	3,68	3,78	3,73	0,10			#N/A		#N/A	
	a	117	2,00	2,78	2,39	0,78			#N/A		#N/A	
	a	6238	2,75	2,83	2,79	0,08			#N/A		#N/A	
	a	6239	3,70	3,79	3,74	0,09			#N/A		#N/A	
	b	122	2,24	3,66	2,95	1,42			#N/A		#N/A	
	b	78	1,63	2,25	1,94	0,62			#N/A		#N/A	
	b	118	4,41	4,57	4,49	0,15			#N/A		#N/A	
	b	6240	4,00	4,04	4,02	0,04			#N/A		#N/A	
	b	6241	4,36	4,41	4,39	0,05			#N/A		#N/A	
	c	29	1,15	1,90	1,52	0,75			#N/A		#N/A	
	c	56	2,89	2,85	2,87	-0,05			#N/A		#N/A	
	c	58	2,79	2,35	2,57	-0,44			#N/A		#N/A	
	c	84	1,74	1,99	1,86	0,25			#N/A		#N/A	
	c	104	3,18	3,78	3,48	0,60			#N/A		#N/A	
	c	112	4,51	4,47	4,49	-0,04			#N/A		#N/A	
Average category 5						0,26						
Standard deviation of differences category 5						0,46						
6	a	150	4,71	4,78	4,75	0,07			#N/A		#N/A	
	a	151	4,41	4,52	4,47	0,12			#N/A		#N/A	
	a	152	4,56	4,44	4,50	-0,12			#N/A		#N/A	
	a	153	4,23	4,43	4,33	0,20			#N/A		#N/A	
	a	657	5,99	5,87	5,93	-0,11			#N/A		#N/A	
	a	659	5,75	5,83	5,79	0,08			#N/A		#N/A	
	b	440	4,18	4,20	4,19	0,02			#N/A		#N/A	
	b	763	1,70	1,70	1,70	0,00			#N/A		#N/A	
	b	765	2,73	2,75	2,74	0,02			#N/A		#N/A	
	b	774	2,69	2,79	2,74	0,10			#N/A		#N/A	
	b	6242	3,36	3,43	3,40	0,07			#N/A		#N/A	
	c	154	3,27		#N/A			5,47	#N/A		4,37	2,20
	c	155	3,38	3,86	3,62	0,48			#N/A		#N/A	
	c	441	0,00		#N/A			1,30	#N/A		0,65	1,30
	c	661	2,06	2,18	2,12	0,11			#N/A		#N/A	
	c	662	5,13	5,08	5,11	-0,05			#N/A		#N/A	
	c	6163	0,00		#N/A			0,00	#N/A		0,00	0,00
	c	6164	0,00		#N/A			0,00	#N/A		0,00	0,00
	c	6907	4,79	4,86	4,83	0,07			#N/A		#N/A	
	c	6908	5,90	5,98	5,94	0,07			#N/A		#N/A	
Average category 6						0,07						
Standard deviation of differences category 6						0,14						

Category	Type	N°sample	Incubation : 22 h									
			Log cfu/g		Mean	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				
7	a	3844	1,30		#N/A		2,15		1,72	0,85	#N/A	
	a	3903	1,93	2,74	2,33	0,81			#N/A		#N/A	
	a	3904	2,00		#N/A		3,53		3,07	1,53	#N/A	
	a	3905	1,00		#N/A			3,17	#N/A		2,09	2,17
	a	3906	0,00		#N/A			0,00	#N/A		0,00	0,00
	a	4011	0,00		#N/A			0,00	#N/A		0,00	0,00
	a	4012	0,00		#N/A			0,00	#N/A		0,00	0,00
	a	4013	5,13		#N/A			5,13	#N/A		5,13	0,00
	a	4014	3,63	3,68	3,66	0,05			#N/A		#N/A	
	a	4015	0,00		#N/A			0,00	#N/A		0,00	0,00
	a	4494	5,18		#N/A			5,00	#N/A		5,09	-0,18
	a	4495	5,18		#N/A			5,00	#N/A		5,09	-0,18
	a	4496	5,18		#N/A			5,00	#N/A		5,09	-0,18
	a	4497	5,18		#N/A			5,00	#N/A		5,09	-0,18
	a	4562	1,99	2,41	2,20	0,42			#N/A		#N/A	
	a	4563	2,81	3,10	2,95	0,29			#N/A		#N/A	
	a	4564	2,47	2,24	2,36	-0,23			#N/A		#N/A	
	a	4565	2,36	2,65	2,51	0,29			#N/A		#N/A	
	b	3841	0,00		#N/A			0,00	#N/A		0,00	0,00
	b	3845	0,00		#N/A			2,01	#N/A		1,00	2,01
	b	3907	1,00		#N/A			1,00	#N/A		1,00	0,00
	b	4006	2,18	2,28	2,23	0,10			#N/A		#N/A	
	b	4007	0,00		#N/A			0,00	#N/A		0,00	0,00
	b	4008	3,89	3,53	3,71	-0,36			#N/A		#N/A	
	b	4009	1,00		#N/A			3,63	#N/A		2,31	2,63
	b	4010	3,28	2,97	3,12	-0,31			#N/A		#N/A	
	b	6243	2,53	2,56	2,54	0,02			#N/A		#N/A	
	b	6244	4,51	4,81	4,66	0,30			#N/A		#N/A	
	c	3676	0,00		#N/A			0,00	#N/A		0,00	0,00
	c	3677	0,00		#N/A			0,00	#N/A		0,00	0,00
	c	3678	1,65	2,08	1,86	0,43			#N/A		#N/A	
	c	3679	3,56	3,95	3,76	0,40			#N/A		#N/A	
	c	6165	1,95	2,20	2,08	0,25			#N/A		#N/A	
	c	6166	4,28	4,40	4,34	0,12			#N/A		#N/A	
	c	6167	2,52	2,53	2,52	0,01			#N/A		#N/A	
Average category 7						0,16						
Standard deviation of differences category 7						0,30						
Average all categories				Dall		0,22						
Standard deviation of differences all categories				SDall		0,33						

β=95%	n all	144				
	T(0,05;70)=	1,976692167				
		0,652338902	Upper limit	Lower limit	Linear	
	Average (minimal value)	0,00	0,87	-0,43		0,22
	Average (maximal value)	10,00	0,87	-0,43		0,22

Category	n	T(0,05;70)=	SD	ISO formula	Bias	Lower limit (95%)	Upper limit (95%)
1	29	2,05	0,32	0,68	0,31	-0,36	0,99
2	39	2,02	0,31	0,65	0,32	-0,33	0,96
3	22	2,08	0,38	0,82	0,12	-0,69	0,94
4	22	2,08	0,25	0,54	0,14	-0,40	0,69
5	16	2,13	0,46	1,00	0,46	-0,55	1,46
6	16	2,13	0,14	0,30	0,07	-0,23	0,37
7	16	2,13	0,30	0,67	0,16	-0,51	0,83
All categories	144	1,98	0,33	0,65	0,22	-0,43	0,87

Appendix F - Accuracy profile study: raw data

N': arithmetic average

Matrix	Strain	Level	N° sample	Reference method : ISO 21528-2*				Alternative method: 3M™ Petrifilm <i>Enterobacteriaceae</i>			
				Dilution	cfu/plate	cfu/g	log cfu/g	24h ± 2h at 37°C ± 1°C			
								Dilution	cfu/Petrifilm test	cfu/g	log cfu/g
Pork pâté Batch 1 Aerobic mesophilic flora: 20 CFU/g	<i>Enterobacter agglomerans</i> 135	1	6862	10	14	140	2,15	10	24	240	2,38
				100	1			100	2		
			6863	10	16	160	2,20	10	22	230	2,36
				100	2			100	3		
			6864	10	15	140	2,15	10	27	280	2,45
				100	0			100	4		
		2	6865	10	16	170	2,23	10	30	320	2,51
				100	3			100	5		
			6866	10	24	260	2,41	10	25	240	2,38
				100	4			100	1		
			4818	100	136	14000	4,15	100	135	12000	4,08
				1000	16			1000	12		N'
			4819	100	111	11000	4,04	100	153	12000	4,08
				1000	13			1000	12		N'
			4820	100	140	14000	4,15	100	150	18000	4,26
				1000	11			1000	18		N'
			4821	100	133	14000	4,15	100	165	15000	4,18
				1000	17			1000	15		N'
		3	4822	100	112	12000	4,08	100	105	11000	4,04
				1000	15			1000	11		
			4828	1000	27	26000	4,41	1000	26	25000	4,40
				10000	2			10000	1		
			4829	1000	26	25000	4,40	1000	28	27000	4,43
				10000	2			10000	2		
			4830	1000	19	18000	4,26	1000	20	20000	4,30
				10000	1			10000	2		
			4831	1000	24	24000	4,38	1000	32	31000	4,49
				10000	2			10000	2		
			4832	1000	22	23000	4,36	1000	22	22000	4,34
				10000	3			10000	2		
Pork pâté Batch 2 Aerobic mesophilic flora: 0 CFU/g	<i>Enterobacter agglomerans</i> 135	1	6867	10	20	190	2,28	10	25	250	2,40
				100	1			100	2		
			6868	10	33	340	2,53	10	26	250	2,40
				100	4			100	1		
			6869	10	20	200	2,30	10	31	300	2,48
				100	2			100	2		
		2	6870	10	29	290	2,46	10	30	290	2,46
				100	3			100	2		
			6871	10	21	240	2,38	10	16	160	2,20
				100	5			100	2		
			4843	1000	18	18000	4,26	100	178	16000	4,20
				10000	2			1000	16		N'
			4844	1000	13	15000	4,18	100	169	18000	4,26
				10000	3			1000	18		N'
			4845	1000	16	15000	4,18	100	159	11000	4,04
				10000	1			1000	11		N'
			4846	1000	17	17000	4,23	100	178	12000	4,08
				10000	2			1000	12		N'
		3	4847	1000	16	16000	4,20	100	143	17000	4,23
				10000	2			1000	17		N'
			4853	1000	28	29000	4,46	1000	31	33000	4,52
				10000	4			10000	5		
			4854	1000	24	24000	4,38	1000	30	29000	4,46
				10000	2			10000	2		
			4855	1000	25	25000	4,40	1000	27	26000	4,41
				10000	2			10000	2		
			4856	1000	26	25000	4,40	1000	29	32000	4,51
				10000	2			10000	6		
			4857	1000	24	23000	4,36	1000	30	28000	4,45
				10000	1			10000	1		

* Analyses performed according to the COFRAC accreditation

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2*				Alternative method: 3M™ Petrifilm Enterobacteriaceae			
								24h ± 2h at 37°C ± 1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm test	cfu/g	log cfu/g
Pasteurized milk Batch 1 Aerobic mesophilic flora: 0 CFU/g	<i>Hafnia alvei</i> 130	1	5403	10	24	240	2,38	10	28	260	2,41
				100	2			100	1		
			5404	10	23	220	2,34	10	24	220	2,34
				100	1			100	0		
			5405	10	34	340	2,53	10	25	270	2,43
				100	3			100	5		
		2	5406	10	31	310	2,49	10	34	310	2,49
				100	3			100	0		
			5407	10	27	280	2,45	10	33	320	2,51
				100	4			100	2		
			5408	100	53	5200	3,72	100	43	4500	3,65
				1000	4			1000	6		
			5409	100	48	4700	3,67	100	49	4900	3,69
				1000	4			1000	5		
			5410	100	41	3700	3,57	100	46	4400	3,64
				1000	0			1000	2		
			5411	100	46	4700	3,67	100	45	4500	3,65
				1000	6			1000	4		
		3	5412	100	34	3400	3,53	100	36	3600	3,56
				1000	3			1000	4		
			5413	1000	104	100000	5,00	1000	90	93000	4,97
				10000	6			10000	12		
			5414	1000	88	85000	4,93	1000	87	86000	4,93
				10000	6			10000	8		
			5415	1000	85	83000	4,92	1000	96	91000	4,96
				10000	6			10000	4		
			5416	1000	88	87000	4,94	1000	81	83000	4,92
				10000	8			10000	10		
			5417	1000	81	77000	4,89	1000	94	95000	4,98
				10000	4			10000	10		
Pasteurized milk Batch 2 Aerobic mesophilic flora: 10 CFU/g	<i>Hafnia alvei</i> 130	1	5418	10	32	310	2,49	10	28	270	2,43
				100	2			100	2		
			5419	10	28	280	2,45	10	38	360	2,56
				100	3			100	1		
			5420	10	24	240	2,38	10	21	210	2,32
				100	2			100	2		
		2	5421	10	17	170	2,23	10	27	250	2,40
				100	2			100	0		
			5422	10	22	250	2,40	10	22	210	2,32
				100	5			100	1		
			5423	100	52	5100	3,71	100	46	4300	3,63
				1000	4			1000	1		
			5424	100	43	4200	3,62	100	63	6300	3,80
				1000	3			1000	6		
			5425	100	39	3900	3,59	100	50	4900	3,69
				1000	4			1000	4		
			5426	100	41	4000	3,60	100	41	3900	3,59
				1000	3			1000	2		
		3	5427	100	51	5000	3,70	100	55	5200	3,72
				1000	4			1000	2		
			5428	1000	84	82000	4,91	1000	85	85000	4,93
				10000	6			10000	9		
			5429	1000	86	85000	4,93	1000	95	98000	4,99
				10000	7			10000	13		
			5430	1000	91	87000	4,94	1000	89	92000	4,96
				10000	5			10000	12		
			5431	1000	93	97000	4,99	1000	87	88000	4,94
				10000	14			10000	10		
			5432	1000	83	84000	4,92	1000	85	87000	4,94
				10000	9			10000	11		

* Analyses performed according to the COFRAC accreditation

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2*				Alternative method: 3M™ Petrifilm <i>Enterobacteriaceae</i>			
								24h ± 2h at 37°C ± 1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm test	cfu/g	log cfu/g
Frozen salmon fillet Batch 1 Aerobic mesophilic flora: 20 CFU/g	<i>Klebsiella oxytoca</i> 179	1	5626	10	39	390	2,59	10	22	240	2,38
				100	4			100	4		
			5627	10	42	430	2,63	10	38	360	2,56
				100	5			100	2		
			5628	10	32	360	2,56	10	26	310	2,49
				100	8			100	8		
		2	5629	10	42	400	2,60	10	32	290	2,46
				100	2			100	0		
			5630	10	30	300	2,48	10	19	210	2,32
				100	3			100	4		
			5631	100	39	4000	3,60	100	35	3500	3,54
				1000	5			1000	3		
			5632	100	60	5600	3,75	100	48	4500	3,65
				1000	2			1000	1		
			5633	100	64	6300	3,80	100	53	5200	3,72
				1000	5			1000	4		
			5634	100	45	4500	3,65	100	48	4700	3,67
				1000	5			1000	4		
		3	5635	100	49	4800	3,68	100	52	4800	3,68
				1000	4			1000	1		
			5636	1000	88	83000	4,92	1000	98	100000	5,00
				10000	3			10000	12		
			5637	1000	110	110000	5,04	1000	104	97000	4,99
				10000	11			10000	3		
			5638	1000	116	110000	5,04	1000	120	120000	5,08
				10000	8			10000	10		
Frozen salmon fillet Batch 2 Aerobic mesophilic flora: 50 CFU/g	<i>Klebsiella oxytoca</i> 179	1	5639	1000	89	91000	4,96	1000	114	110000	5,04
				10000	11			10000	10		
			5640	1000	110	110000	5,04	1000	92	93000	4,97
				10000	8			10000	10		
		2	5824	10	53	520	2,72	10	45	460	2,66
				100	4			100	5		
			5825	10	37	360	2,56	10	37	380	2,58
				100	2			100	5		
			5826	10	50	520	2,72	10	51	490	2,69
				100	7			100	3		
			5827	10	45	430	2,63	10	42	410	2,61
				100	2			100	3		
			5828	10	50	520	2,72	10	57	580	2,76
				100	7			100	7		
		3	5829	100	40	3700	3,57	100	54	5500	3,74
				1000	1			1000	7		
			5830	100	51	4800	3,68	100	49	4800	3,68
				1000	2			1000	4		
			5831	100	50	4900	3,69	100	46	4700	3,67
				1000	4			1000	6		
			5832	100	52	5000	3,70	100	55	5300	3,72
				1000	3			1000	3		
	<i>Klebsiella oxytoca</i> 179	2	5833	100	54	5100	3,71	100	53	4800	3,68
				1000	2			1000	0		
			5834	1000	100	98000	4,99	1000	92	92000	4,96
				10000	8			10000	9		
			5835	1000	107	100000	5,00	1000	99	100000	5,00
				10000	8			10000	12		
		3	5836	1000	112	110000	5,04	1000	111	110000	5,04
				10000	10			10000	12		
			5837	1000	93	93000	4,97	1000	113	110000	5,04
				10000	9			10000	6		
			5838	1000	93	92000	4,96	1000	89	90000	4,95
				10000	8			10000	10		

* Analyses performed according to the COFRAC accreditation

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2*				Alternative method: 3M™ Petrifilm <i>Enterobacteriaceae</i>			
								24h ± 2h at 37°C ± 1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm test	cfu/g	log cfu/g
Green beans Batch 1 Aerobic mesophilic flora: <10 CFU/g	<i>Escherichia hermanii</i> Ad1457	1	4544	10	25	250	2,40	10	35	330	2,52
				100	2			100	1		
			4545	10	26	250	2,40	10	25	240	2,38
				100	1			100	1		
			4546	10	25	230	2,36	10	34	310	2,49
				100	0			100	0		
			4547	10	24	250	2,40	10	28	270	2,43
				100	3			100	2		
			4548	10	25	240	2,38	10	29	280	2,45
				100	1			100	2		
		2	4549	100	25	2600	3,41	100	41	4200	3,62
				1000	4			1000	5		
			4550	100	37	3600	3,56	100	52	5200	3,72
				1000	3			1000	5		
			4551	100	39	3800	3,58	100	45	4300	3,63
				1000	3			1000	2		
			4552	100	32	3300	3,52	100	47	4500	3,65
				1000	4			1000	3		
			4553	100	44	4300	3,63	100	48	4600	3,66
				1000	3			1000	3		
		3	4554	1000	64	60000	4,78	1000	80	74000	4,87
				10000	2			10000	1		
			4555	1000	71	71000	4,85	1000	88	85000	4,93
				10000	7			10000	5		
			4556	1000	79	79000	4,90	1000	89	83000	4,92
				10000	8			10000	2		
			4557	1000	68	69000	4,84	1000	75	72000	4,86
				10000	8			10000	4		
			4558	1000	50	51000	4,71	1000	83	84000	4,92
				10000	6			10000	9		
Green beans Batch 2 Aerobic mesophilic flora: <10 CFU/g	<i>Escherichia hermanii</i> Ad1457	1	4559	10	21	240	2,38	10	26	270	2,43
				100	5			100	4		
			4560	10	14	150	2,18	10	21	210	2,32
				100	2			100	2		
			4561	10	32	310	2,49	10	22	230	2,36
				100	2			100	3		
			4562	10	19	200	2,30	10	33	320	2,51
				100	3			100	2		
			4563	10	24	240	2,38	10	19	200	2,30
				100	2			100	3		
		2	4564	100	34	3300	3,52	100	47	4400	3,64
				1000	2			1000	1		
			4565	100	25	2500	3,40	100	43	4400	3,64
				1000	3			1000	5		
			4566	100	28	2900	3,46	100	43	4300	3,63
				1000	4			1000	4		
			4567	100	32	3300	3,52	100	29	3200	3,51
				1000	4			1000	6		
			4568	100	29	2900	3,46	100	41	4000	3,60
				1000	3			1000	3		
		3	4569	1000	52	51000	4,71	1000	75	77000	4,89
				10000	4			10000	10		
			4570	1000	61	62000	4,79	1000	84	82000	4,91
				10000	7			10000	6		
			4571	1000	56	55000	4,74	1000	87	85000	4,93
				10000	5			10000	7		
			4572	1000	63	63000	4,80	1000	90	95000	4,98
				10000	6			10000	15		
			4573	1000	65	64000	4,81	1000	100	95000	4,98
				10000	5			10000	4		

* Analyses performed according to the COFRAC accreditation

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2*				Alternative method: 3M™ Petrifilm Enterobacteriaceae			
				Dilution	cfu/plate	cfu/g	log cfu/g	24h ± 2h at 37°C ± 1°C			
								Dilution	cfu/Petrifilm test	cfu/g	log cfu/g
Whole pasteurized liquid egg Batch 1 Aerobic mesophilic flora: 0 CFU/g	<i>Serratia liquefaciens</i> 26	1	6428	10	14	140	2,15	10	23	230	2,36
				100	1			100	2		
			6429	10	15	150	2,18	10	19	180	2,26
				100	1			100	1		
			6430	10	12	110	2,04	10	14	140	2,15
				100	0			100	1		
		2	6431	10	10	91	1,96	10	21	220	2,34
				100	0			100	3		
			6432	10	15	140	2,15	10	16	160	2,20
				100	0			100	1		
			5093	100	27	2700	3,43	100	27	2700	3,43
				1000	3			1000	3		
			5094	100	29	2800	3,45	100	31	3400	3,53
				1000	2			1000	6		
			5095	100	34	3400	3,53	100	36	3600	3,56
				1000	3			1000	4		
			5096	100	30	2900	3,46	100	15	1500	3,18
				1000	2			1000	2		
		3	5097	100	28	3000	3,48	100	37	3900	3,59
				1000	5			1000	6		
			5103	1000	25	28000	4,45	1000	45	44000	4,64
				10000	6			10000	3		
			5104	1000	49	48000	4,68	1000	55	60000	4,78
				10000	4			10000	11		
			5105	1000	40	39000	4,59	1000	33	32000	4,51
				10000	3			10000	2		
Whole pasteurized liquid egg Batch 2 Aerobic mesophilic flora: 0 CFU/g	<i>Serratia liquefaciens</i> 26	1	6857	10	23	220	2,34	10	22	200	2,30
				100	1			100	0		
			6858	10	22	230	2,36	10	16	160	2,20
				100	3			100	1		
			6859	10	27	280	2,45	10	15	150	2,18
				100	4			100	1		
		2	6860	10	20	190	2,28	10	22	240	2,38
				100	1			100	4		
			6861	10	21	210	2,32	10	29	290	2,46
				100	2			100	3		
			5118	100	18	1800	3,26	100	47	4500	3,65
				1000	2			1000	3		
			5119	100	17	1500	3,18	100	30	3300	3,52
				1000	0			1000	6		
			5120	100	18	1600	3,20	100	42	3900	3,59
				1000	0			1000	1		
		3	5121	100	27	2700	3,43	100	33	3200	3,51
				1000	3			1000	2		
			5122	100	21	1900	3,28	100	31	3100	3,49
				1000	0			1000	3		
			5128	1000	29	29000	4,46	1000	69	67000	4,83
				10000	3			10000	5		
			5129	1000	29	29000	4,46	1000	63	62000	4,79
				10000	3			10000	5		
			5130	1000	35	34000	4,53	1000	35	37000	4,57
				10000	2			10000	6		
			5131	1000	40	39000	4,59	1000	51	54000	4,73
				10000	3			10000	8		
			5132	1000	25	24000	4,38	1000	49	52000	4,72
				10000	1			10000	8		

* Analyses performed according to the COFRAC accreditation

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2*				Alternative method: 3M™ Petrifilm <i>Enterobacteriaceae</i>			
								24h ± 2h at 37°C ± 1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm test	cfu/g	log cfu/g
Pâté for cat Batch 1 Aerobic mesophilic flora: <10CFU/g	<i>Citrobacter braakii</i> Ad833	1	4758	10	25	230	2,36	10	34	320	2,51
				100	0			100	1		
			4759	10	28	270	2,43	10	40	390	2,59
				100	2			100	3		
			4760	10	22	220	2,34	10	30	290	2,46
				100	2			100	2		
		2	4761	10	27	270	2,43	10	31	300	2,48
				100	3			100	2		
			4762	10	25	250	2,40	10	33	320	2,51
				100	2			100	2		
			4763	100	49	4700	3,67	100	60	5700	3,76
				1000	3			1000	3		
			4764	100	52	5300	3,72	100	57	5800	3,76
				1000	6			1000	7		
			4765	100	58	5900	3,77	100	38	4200	3,62
				1000	7			1000	8		
		3	4766	100	35	3500	3,54	100	49	5200	3,72
				1000	4			1000	8		
			4767	100	41	4500	3,65	100	56	6000	3,78
				1000	9			1000	10		
			4768	1000	74	75000	4,88	1000	112	110000	5,04
				10000	8			10000	9		
			4769	1000	97	95000	4,98	1000	99	100000	5,00
				10000	8			10000	16		
			4770	1000	91	93000	4,97	1000	90	91000	4,96
				10000	11			10000	10		
Pâté for cat Batch 2 Aerobic mesophilic flora: <10CFU/g	<i>Citrobacter braakii</i> Ad833	1	4771	1000	84	81000	4,91	1000	94	95000	4,98
				10000	5			10000	10		
			4772	1000	101	100000	5,00	1000	85	85000	4,93
				10000	11			10000	8		
			4773	10	31	320	2,51	10	24	230	2,36
				100	4			100	1		
		2	4774	10	19	180	2,26	10	33	320	2,51
				100	1			100	3		
			4775	10	31	310	2,49	10	30	290	2,46
				100	3			100	2		
			4776	10	44	420	2,62	10	34	320	2,51
				100	2			100	1		
			4777	10	36	360	2,56	10	24	260	2,41
				100	4			100	4		
			4778	100	41	4000	3,60	100	40	4100	3,61
				1000	3			1000	5		
		3	4779	100	40	4300	3,63	100	52	5000	3,70
				1000	7			1000	3		
			4780	100	39	3900	3,59	100	44	4100	3,61
				1000	4			1000	1		
			4781	100	46	5000	3,70	100	44	4200	3,62
				1000	9			1000	2		
			4782	100	47	4800	3,68	100	47	4800	3,68
				1000	6			1000	6		
			4783	1000	84	88000	4,94	1000	79	79000	4,90
				10000	13			10000	8		
		3	4784	1000	74	73000	4,86	1000	88	83000	4,92
				10000	6			10000	3		
			4785	1000	110	110000	5,04	1000	111	110000	5,04
				10000	11			10000	10		
			4786	1000	85	83000	4,92	1000	74	73000	4,86
				10000	6			10000	6		
		3	4787	1000	98	97000	4,99	1000	82	81000	4,91
				10000	9			10000	7		

* Analyses performed according to the COFRAC accreditation

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2*				Alternative method: 3M™ Petrifilm <i>Enterobacteriaceae</i>			
				Dilution	cfu/plate	cfu/g	log cfu/g	24h ± 2h at 37°C ± 1°C			
								Dilution	cfu/Petrifilm test	cfu/g	log cfu/g
Process water (zucchini and split peas) Batch 1 Aerobic mesophilic flora: 0 CFU/g	<i>Escherichia coli</i> 93	1	5183	10	38	360	2,56	10	23	230	2,36
				100	2			100	2		
			5184	10	29	290	2,46	10	18	180	2,26
				100	3			100	2		
			5185	10	33	340	2,53	10	22	260	2,41
				100	4			100	6		
		2	5186	10	35	340	2,53	10	27	280	2,45
				100	2			100	4		
			5187	10	24	240	2,38	10	32	340	2,53
				100	2			100	5		
			5188	100	51	5400	3,73	100	51	5100	3,71
				1000	8			1000	5		
			5189	100	42	4000	3,60	100	42	4100	3,61
				1000	2			1000	3		
			5190	100	83	8000	3,90	100	44	4500	3,65
				1000	5			1000	6		
			5191	100	41	3800	3,58	100	40	4000	3,60
				1000	1			1000	4		
			5192	100	44	4300	3,63	100	59	5800	3,76
				1000	3			1000	5		
		3	5198	1000	88	84000	4,92	1000	81	75000	4,88
				10000	4			10000	2		
			5199	1000	88	89000	4,95	1000	84	82000	4,91
				10000	10			10000	6		
			5200	1000	81	84000	4,92	1000	90	95000	4,98
				10000	11			10000	15		
			5201	1000	92	90000	4,95	1000	87	91000	4,96
				10000	7			10000	13		
			5202	1000	81	81000	4,91	1000	89	89000	4,95
				10000	8			10000	9		
Process water (pilchards) Batch 2 Aerobic mesophilic flora: 0 CFU/g	<i>Escherichia coli</i> 93	1	5208	10	16	190	2,28	10	37	370	2,57
				100	5			100	4		
			5209	10	24	230	2,36	10	25	270	2,43
				100	1			100	5		
			5210	10	18	180	2,26	10	35	350	2,54
				100	2			100	3		
		2	5211	10	28	260	2,41	10	22	270	2,43
				100	0			100	8		
			5212	10	33	330	2,52	10	23	260	2,41
				100	3			100	5		
			5213	100	34	3500	3,54	100	51	5000	3,70
				1000	5			1000	4		
			5214	100	41	3700	3,57	100	52	5700	3,76
				1000	0			1000	11		
			5215	100	45	4300	3,63	100	59	5600	3,75
				1000	2			1000	3		
			5216	100	42	4000	3,60	100	50	4800	3,68
				1000	2			1000	3		
			5217	100	41	4000	3,60	100	44	4500	3,65
				1000	3			1000	5		
		3	5223	1000	64	68000	4,83	1000	77	75000	4,88
				10000	11			10000	5		
			5224	1000	71	74000	4,87	1000	82	79000	4,90
				10000	10			10000	5		
			5225	1000	66	67000	4,83	1000	63	63000	4,80
				10000	8			10000	6		
			5226	1000	90	87000	4,94	1000	77	74000	4,87
				10000	6			10000	4		
			5227	1000	79	76000	4,88	1000	89	92000	4,96
				10000	5			10000	12		

* Analyses performed according to the COFRAC accreditation

Appendix G - Accuracy profile study: summarized results

(Food) Category 1			Meat products									
(Food) Type 1			Pork, beef, veal raw and cooked (pork pâté)									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
6862-6866	Pork pâté	1	140	160	140	170	260	240	230	280	320	240
6867-6871	Pork pâté	1	190	340	200	290	240	250	250	300	290	160
4818-4822	Pork pâté	2	14000	11000	14000	14000	12000	12000	12000	18000	15000	11000
4843-4847	Pork pâté	2	18000	15000	15000	17000	16000	16000	18000	11000	12000	17000
4828-4832	Pork pâté	3	26000	25000	18000	24000	23000	25000	27000	20000	31000	22000
4853-4857	Pork pâté	3	29000	24000	25000	25000	23000	33000	29000	26000	32000	28000

(Food) Category 3			Seafood									
(Food) Type 3			Raw seafood (salmon fillet)									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
5626-5630	Frozen salmon fillet	1	390	430	360	400	300	240	360	310	290	210
5824-5828	Frozen salmon fillet	1	520	360	520	430	520	460	380	490	410	580
5631-5635	Frozen salmon fillet	2	4000	5600	6300	4500	4800	3500	4500	5200	4700	4800
5829-5833	Frozen salmon fillet	2	3700	4800	4900	5000	5100	5500	4800	4700	5300	4800
5636-5640	Frozen salmon fillet	3	83000	110000	110000	91000	110000	100000	97000	120000	110000	93000
5834-5838	Frozen salmon fillet	3	98000	100000	110000	93000	92000	92000	100000	110000	110000	90000

(Food) Category 5			Miscellaneous and egg products									
(Food) Type 5			Egg based products (whole liquid egg)									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
6428-6432	Whole liquid egg	1	140	150	110	91	140	230	180	140	220	160
6857-6861	Whole liquid egg	1	220	230	280	190	210	200	160	150	240	290
5093-5097	Whole liquid egg	2	2700	2800	3400	2900	3000	2700	3400	3600	1500	3900
5118-5122	Whole liquid egg	2	1800	1500	1600	2700	1900	4500	3300	3900	3200	3100
5103-5107	Whole liquid egg	3	28000	48000	39000	55000	66000	44000	60000	32000	58000	75000
5128-5132	Whole liquid egg	3	29000	29000	34000	39000	24000	67000	62000	37000	54000	52000

(Food) Category 7			Environmental samples									
(Food) Type 7			Process water (Batch 1: Zucchini and split peas; Batch 2: Pilchards)									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
5183-5187	Rinsed water	1	360	290	340	340	240	230	180	260	280	340
5208-5212	Rinsed water	1	190	230	180	260	330	370	270	350	270	260
5188-5192	Rinsed water	2	5400	4000	8000	3800	4300	5100	4100	4500	4000	5800
5213-5217	Rinsed water	2	3500	3700	4300	4000	4000	5000	5700	5600	4800	4500
5198-5202	Rinsed water	3	84000	89000	84000	90000	81000	75000	82000	95000	91000	89000
5223-5227	Rinsed water	3	68000	74000	67000	87000	76000	75000	79000	63000	74000	92000

(Food) Category 2			Dairy products									
(Food) Type 2			Milk and cream (pasteurized milk)									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
5403-5407	Pasteurized milk	1	240	220	340	310	280	260	220	270	310	320
5418-5422	Pasteurized milk	1	310	280	240	170	250	270	360	210	250	210
5408-5412	Pasteurized milk	2	5200	4700	3700	4700	3400	4500	4900	4400	4500	3600
5423-5427	Pasteurized milk	2	5100	4200	3900	4000	5000	4300	6300	4900	3900	5200
5413-5417	Pasteurized milk	3	100000	85000	83000	87000	77000	93000	86000	91000	83000	95000
5428-5432	Pasteurized milk	3	82000	85000	87000	97000	84000	85000	98000	92000	88000	87000

(Food) Category 4			Vegetables									
(Food) Type 4			Fresh and frozen products (Green beans)									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
4544-4548	Green beans	1	250	250	230	250	240	330	240	310	270	280
4559-4563	Green beans	1	240	150	310	200	240	270	210	230	320	200
4549-4553	Green beans	2	2600	3600	3800	3300	4300	4200	5200	4300	4500	4600
4564-4568	Green beans	2	3300	2500	2900	3300	2900	4400	4400	4300	3200	4000
4554-4558	Green beans	3	60000	71000	79000	69000	51000	74000	85000	83000	72000	84000
4569-4573	Green beans	3	51000	62000	55000	63000	64000	77000	82000	85000	95000	95000

(Food) Category 6			Feed									
(Food) Type 6			Cooked or dehydrated products (Pâté for cat)									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
4758-4762	Pâté for cat	1	230	270	220	270	250	320	390	290	300	320
4773-4777	Pâté for cat	1	320	180	310	420	360	230	320	290	320	260
4763-4767	Pâté for cat	2	4700	5300	5900	3500	4500	5700	5800	4200	5200	6000
4778-4782	Pâté for cat	2	4000	4300	3900	5000	4800	4100	5000	4100	4200	4800
4768-4772	Pâté for cat	3	75000	95000	93000	81000	100000	110000	100000	91000	95000	85000
4783-4787	Pâté for cat	3	88000	73000	110000	83000	97000	79000	83000	110000	73000	81000

**Appendix H – Inclusivity / Exclusivity: raw
data (initial validation and extension study)**

INCLUSIVITY (Initial validation)							
Strain			Origin	Positive strains			
				VRBG		Petrifilm	
				Growth	Characteristic colonies	Growth	Characteristic colonies
1	<i>Shigella flexneri</i>	CIP8248	/	+	+	+	+ G-
2	<i>Shigella sonnei</i>	CIP8249	/	+	+	+	+ G-
3	<i>Salmonella enteritidis</i>	CIP8297	/	+	+	+	+ G+
4	<i>Salmonella typhimurium</i>	CIP5858	/	+	+	+	+ G+
5	<i>Erwinia carotovora</i>	CIP8283	/	-	-	+	+ G-
6	<i>Erwinia carotovora</i>	CIP103762	/	-	-	-	-
7	<i>Escherichia coli</i>	CIP54117	/	+	+	+	+ G+
8	<i>Escherichia coli</i>	CIP54127	/	+	+	+	+ G+
9	<i>Citrobacter diversus</i>	CIP8294	/	+	+	+	+ G+
10	<i>Citrobacter freundii</i>	CIP5732	/	+	+	+	+ G+
11	<i>Klebsiella pneumoniae</i>	CIP8291	/	+	+	+	+ G+
12	<i>Klebsiella oxytoca</i>	CIP7932	/	+	+	+	+ G+
13	<i>Enterobacter cloacae</i>	Adria 10	Raw milk	+	+	+	+ G+
14	<i>Enterobacter aerogenes</i>	CIP 6086	/	+	+	+	+ G+
15	<i>Serratia liquefaciens</i>	Adria 8	Egg product	+	+	+	+ G-
16	<i>Hafnia alvei</i>	Adria 138	Spices	+	+	+	+ G+
17	<i>Edwardsiella tarda</i>	CIP7861	/	+	+	+	+ G-
18	<i>Proteus mirabilis</i>	Adria 54	Poultry meat	+	+	+	+ G+
19	<i>Proteus vulgaris</i>	Adria 56	Food product	+	+	+	+ G+
20	<i>Providencia rettgeri</i>	Adria 112	Egg white	+	+	+	+ G+
21	<i>Morganella morganii</i>	CIPA236	/	+	+	+	+ G+
22	<i>Yersinia enterocolitica</i>	CIP8027	/	+	+	+	+ G-
23	<i>Kluyvera ascorbata</i>	CIP8295	/	+	+	+	+ G+

EXCLUSIVITY (Initial validation)							
Strain			Origin	Negative strains			
				VRBG		Test Petrifilm	
				Growth	Characteristic colonies	Growth	Characteristic colonies
1	<i>Aeromonas hydrophila</i>	CIP5750	/	+	+	+	+ G+
2	<i>Aeromonas bestiarum</i>	CIP7430	Fish	+	+	+	+ G-
3	<i>Aeromonas sobria</i>	CIP7433	Fish	-	-	-	-
4	<i>Xanthomonas maltophilia</i>	CIP6077	/	+	+	+	+ G+
5	<i>Pseudomonas fluorescens</i>	CIP5690	/	-	-	-	-
6	<i>Pseudomonas putida</i>	Adria 4	Poultry meat	-	-	-	-
7	<i>Pseudomonas putida</i>	Adria 8	Egg product	-	-	-	-
8	<i>Pseudomonas aeruginosa</i>	CIP22	Clinic	-	-	+ (*)	-
9	<i>Acinetobacter spp</i>	Adria 46-2	Poultry meat	-	-	-	-
10	<i>Bacillus circulans</i>	ATCC4513	/	-	-	-	-
11	<i>Lactobacillus plantarum</i>	CIP159	/	-	-	-	-
12	<i>Enterococcus faecalis</i>	ATCC29212	/	-	-	-	-
13	<i>Staphylococcus aureus</i>	CIP658	/	-	-	-	-

(*) Red colonies without acidification zone and gas
G+: Red colonies with red bubbles

G- : Red colonies surrounded with a yellow zone

INCLUSIVITY (Extension study, 2017)								
Strain			Reference	Origin	PCA ufc/plate	VRBG ufc/plate	PEB	
							cfu/ Petrifilm	Gas (+/-)
1	<i>Buttiauxella</i>	agrestis	Ad1328	Whole egg	22	107	13	+
2	<i>Citrobacter</i>	youngae	Ad1372	Water	95	95	81	+
3	<i>Citrobacter</i>	braakii	Ad833	Beef trim	67	23	41	+
4	<i>Citrobacter</i>	farmeri	Ad1116	Egg environment	75	31	64	+
5	<i>Cronobacter</i>	malonaticus	DSM18702	Milk powder	27	149	134	+
6	<i>Cronobacter</i>	sakazakii	Ad2412	Milk powder	38	65	47	+
7	<i>Enterobacter</i>	hormaechei	Ad990	Butter	102	96	84	+
8	<i>Enterobacter</i>	aerogenes	Ad2569	Cheese	49	56	30	+
9	<i>Escherichia</i>	hermannii	Ad464	Raw milk	33	19	31	+
10	<i>Escherichia</i>	fergusonii	Ad1381	Tap water	42	23	38	+
11	<i>Escherichia</i>	vulneris	134	Pork liver	32	25	20	-
12	<i>Escherichia</i>	coli	Ad1915	Poultry meat	66	52	61	+
13	<i>Hafnia</i>	alvei	A00C069	Poultry meat	72	57	52	+
14	<i>Kluyvera</i>	intermedia	60	Vegetables	33	27	33	+
15	<i>Leclercia</i>	adecarboxylata	Ad707	Milk powder	24	20	20	+
16	<i>Lelliottia</i>	amnigena	126	Ground beef	120	111	81	+
17	<i>Pantoea</i>	agglomerans	A00L065	Cheese	117	67	63	+
18	<i>Pluralibacter</i>	gergoviae	CIP76.1		94	102	68	+
19	<i>Providencia</i>	stuartii	Ad1575	River water	56	114	57	-
20	<i>Raoultella</i>	terrigena	Ad1368	Tap water	59	70	39	+
21	<i>Siccibacter</i>	turicensis	Ad1445	Milk powder	20	16	24	+
22	<i>Salmonella enterica</i>	Anatum	Ad2727	Seafood	69	74	58	+
23	<i>Serratia</i>	fonticola	Ad1696	Salmon	30 (-6)	19(-7)	102(-6)	-
24	<i>Serratia</i>	marcescens	Ad2604	Dairy product	78	39	46	-
25	<i>Serratia</i>	liquefaciens	Ad2601	Dairy product	76	33	48	-
26	<i>Shimwellia</i>	blattae	ATCC29907		18	10	15	+
27	<i>Yersinia</i>	enterocolitica	Ad1028	Speck	62	44	60	-

EXCLUSIVITY (Extension study, 2017)							
Strain			Reference	Origin	PCA cfu/plate	VRBG cfu/plate	PEB cfu/Petrifilm
1	<i>Acetobacter</i>	orientalis	DSM15550T	Flower	154	0	0
2	<i>Acinetobacter</i>	baumanii	Ad1090	Feeding stuff	280	160 (µcolonies NC)	µcolonies TNTC
3	<i>Carnobacterium</i>	viridans	ATCCBAA36	/	14	0	0
4	<i>Agrobacterium</i>	tumefaciens	Ad1550	Stagnant water	257	0	0
5	<i>Alcaligenes</i>	faecalis	ATCC8750	/	190	2 brown (NC)	0
6	<i>Arcobacter</i>	butzleri	Ad1881	Poultry environment	98	0	0
7	<i>Asaia</i>	siamensis	CIP107278T	Flower	112	0	0
8	<i>Burkholderia</i>	sp	Ad2003	Slaughterhouse	42	0	0
9	<i>Flavobacterium</i>	hydratis	Ad1323	Whole egg	188	0	0
10	<i>Gluconobacter</i>	oxydans	Ad997	Sweetened drink	257	0	0
11	<i>Comomonas</i>	aquatica	Ad1543	Water	213	µcolonies (NC)	0
12	<i>Moraxella</i>	sp	IB3	Egg white	127	0	0
13	<i>Pandoraea</i>	sp	Ad1882	Slaughterhouse	300	µcolonies TNTC	0
14	<i>Plesiomonas</i> (<i>Aeromonas</i>)	shigelloides	Ad673	Fish	15	49	68
15	<i>Psychrobacter</i>	alimentarius	Ad2570	Cheese	211	0	0
16	<i>Ralstonia</i>	mannitolilytica	Ad1059	Poultry meat	38	0	0
17	<i>Sphingobacterium</i>	sp	Ad1324	Whole egg	95	0	0

TNTC: Too Numerous To Count

NC: Non characteristic colonies

Appendix I – Artificial contaminations of samples

Date of analyse	Sample number	Product (French name)	Product	Artificial contaminations			
				Strain	Origin	Injury protocol	Injury measurement
2010	763	Saucisson pour chien	Sausage for dog	<i>Escherichia coli</i> 12	Turkey meat	TT 30min 55°C	0,66
2010	765	Saucisson pour chien	Sausage for dog	<i>Escherichia coli</i> 101	Pork brain	TT 30min 55°C	0,47
2010	774	Mini filets pour chat au lapin	Pâté for cat	<i>Escherichia coli</i> Ad233	Veal	-20°C	0,54
2015	3844	Chiffonnette Microcut petits pois	Wipe (peas industry)	<i>Escherichia coli</i> 19	Grated carrots	HT 56°C 30min	1,20
2015	3845	Eau de cuisson petits pois	Process water (peas)	<i>Escherichia coli</i> 19	Grated carrots	HT 56°C 30min	1,20
2015	3903	Chiffonnette balance après désinfection cuisson riz	Wipe (rice industry)	<i>Citrobacter farmerii</i> Ad 1116	Environment	pH4 for 11 days	1,90
2015	3904	Chiffonnette plan de travail fabrication madeleine après désinfection	Wipe (pastry industry)	<i>Citrobacter farmerii</i> Ad 1116	Environment	pH4 for 11 days	1,90
2015	3905	Chiffonnette table de cuisson béchamel	Wipe (bechamel sauce)	<i>Serratia fonticola</i> Ad 1376	Water	HT 56°C 25 min	3,40
2015	3906	Chiffonnette table découpe Emmenthal	Wipe (cheese industry)	<i>Escherichia coli</i> Ad 1395	Water	HT 56°C 25 min	1,44
2015	3907	Eau de rinçage becher (PDL+eau)	Process water (milk industry)	<i>Serratia fonticola</i> Ad 1376	Water	HT 56°C 25 min	3,40
2015	4494	Chiffonnette local vaisselle atelier	Wipe (dishwasher)	<i>Enterobacter fergusonii</i> 2876	Environment	16 days pH4	0,42
2015	4495	Chiffonnette table atelier	Wipe (table)	<i>Enterobacter fergusonii</i> 2876	Environment	16 days pH4	0,42
2015	4496	Chiffonnette cutter	Wipe (cutter)	<i>Citrobacter youngae</i> Ad1372	Water	HT 50°C 10 min	0,5
2015	4497	Chiffonnette poussoir	Wipe (push-button)	<i>Citrobacter youngae</i> Ad1372	Water	HT 50°C 10 min	0,5
2015	4562	Chiffonnette table préparation pâte	Wipe	<i>Escherichia coli</i> Ad1388	Water	16 days pH4	0,42
2015	4563	Chiffonnette cuve broyeur après nettoyage	Wipe after cleaning	<i>Escherichia coli</i> 101	Pork meat	16 days 4°C	1,07
2015	4564	Chiffonnette grille four fumage après nettoyage	Wipe after cleaning	<i>Escherichia coli</i> Ad1828	Beef meat	HT 50°C 10 min	0,4
2015	4565	Chiffonnette table découpe après nettoyage	Wipe after cleaning	<i>Escherichia coli</i> Ad1388	Water	16 days pH4	0,42
2017	6226	Crème dessert à la vanille	Dairy dessert	<i>Enterobacter kobei</i> Ad706	Milk powder	Seeding 48h 2-8°C	/
2017	6227	Riz au lait	Dairy dessert	<i>Enterobacter kobei</i> Ad706	Milk powder	Seeding 48h 2-8°C	/
2017	6228	Nem au crabe	RTRH Seafood	<i>Enterobacter cloacae</i> Ad230	Tuna	Seeding 48h 2-8°C	/
2017	6229	Beignets de crevettes	RTRH Seafood	<i>Enterobacter cloacae</i> Ad230	Tuna	Seeding 48h 2-8°C	/
2017	6230	Parmentier de poisson ciboulette	RTRH seafood	<i>Escherichia coli</i> Ad228	Fish	Seeding 48h 2-8°C	/

Date of analyse	Sample number	Product (French name)	Product	Artificial contaminations			
				Strain	Origin	Injury protocol	Injury measurement
2017	6231	Betteraves rouges assaisonnées	Seasoned red beetroot	<i>Escherichia hermanii</i> Ad457	Spinach	Seeding 48h 2-8°C	/
2017	6232	Carottes râpées au citron	Seasoned grated carrots	<i>Escherichia hermanii</i> Ad457	Spinach	Seeding 48h 2-8°C	/
2017	6233	Duo carottes céleri assaisonnés	Seasoned grated celery carrots	<i>Klebsiella pneumoniae</i> 139	Soya	Seeding 48h 2-8°C	/
2017	6234	Boulettes aux légumes carottes petits pois mais	RTRH beef	<i>Escherichia hermanii</i> Ad457	Spinach	Seeding 48h 2-8°C	/
2017	6235	Boulettes aux légumes carottes petits pois mais	RTRH beef	<i>Klebsiella pneumoniae</i> 139	Soya	Seeding 48h 2-8°C	/
2017	6236	Galettes gourmandes lentilles carottes	RTRH vegetables	<i>Klebsiella pneumoniae</i> 139	Soya	Seeding 48h 2-8°C	/
2017	6237	Falafels pois chiches fèves coriandre menthe	RTRH vegetables	<i>Klebsiella pneumoniae</i> 139	Soya	Seeding 48h 2-8°C	/
2017	6238	Cannelloni pur bœuf	RTRH beef	<i>Enterobacter kobei</i> Ad342	Ham	Seeding 48h 2-8°C	/
2017	6239	Pizza jambon fromage	RTRH pizza	<i>Enterobacter kobei</i> Ad342	Ham	Seeding 48h 2-8°C	/
2017	6240	Flan pâtissier	Custard pastry	<i>Escherichia hermanii</i> Ad461	Custard	Seeding 48h 2-8°C	/
2017	6241	Eclair au chocolat	Pastry	<i>Escherichia hermanii</i> Ad461	Custard	Seeding 48h 2-8°C	/
2017	6242	Saucisson pour chien	Sausage for dog	<i>Enterobacter kobei</i> Ad342	Ham	Seeding 48h 2-8°C	/
2017	6243	Eau de rinçage (industrie porc)	Rinsed water (Pork industry)	<i>Hafnia alvei</i> 167	Sausages	Seeding 48h 2-8°C	/
2017	6244	Eau de lavage sciage viande (industrie porc)	Wash water (pork industry)	<i>Hafnia alvei</i> 167	Sausages	Seeding 48h 2-8°C	/
2017	6884	Filet de colin	Hake fillet	<i>Rhanella aquatilis</i> 67	Delicatessen	Seeding 48h 2-8°C	/
2017	6885	Filet de cabillaud	Cod fillet	<i>Rhanella aquatilis</i> 67	Delicatessen	Seeding 48h 2-8°C	/
2017	6907	Protéines déshydratées de volaille	Dehydrated poultry proteins	<i>Enterobacter aerogenes</i> Ad889	Meat meal	Spiking-HT 8 min 56°C	/
2017	6908	Protéines déshydratées de volaille	Dehydrated poultry proteins	<i>Enterobacter aerogenes</i> Ad889	Meat meal	Spiking-HT 8 min 56°C	/
2017	6909	Colin d'Alaska	Hake	<i>Enterobacter cloacae</i> Ad230	Tuna	Seeding 48h 2-8°C	/
2017	6910	Colin d'Alaska	Hake	<i>Enterobacter cloacae</i> Ad230	Tuna	Seeding 48h 2-8°C	/
2017	6911	Saumon	Salmon	<i>Citrobacter braakii</i> Ad2701	Squids	Seeding 48h 2-8°C	/
2017	6912	Poudre de lait écrémée	Skimmed milk powder	<i>Escherichia vulneris</i> 127	Raw milk	Spiking HT 8min 56°C	0,5
2017	6913	Poudre de lait écrémée	Skimmed milk powder	<i>Escherichia coli</i> Ad1422	Infant formula	Spiking HT 8min 56°C	1,0
2017	6914	Poudre de lait infantile sans probiotiques	Infant formula without probiotics	<i>Escherichia vulneris</i> 127	Raw milk	Spiking HT 8min 56°C	0,5
2017	6915	Poudre de lait infantile avec probiotiques	Infant formula with probiotics	<i>Escherichia hermanii</i> Ad463	Raw milk	Spiking HT 8min 56°C	1,7
2017	6916	Poudre de lait infantile avec probiotiques	Infant formula with probiotics	<i>Escherichia coli</i> Ad1422	Infant formula	Spiking HT 8min 56°C	1,0

Appendix J - sensitivity study - raw results

MEAT PRODUCTS																															
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2												Alternative method : Petrifilm <i>Enterobacteriaceae</i> Count Plate												Category	Type
						Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g	Log cfu/g	Log cfu/g Mean	Dilution	Total cfu/plate	Gaz + cfu/plate	Rep 2	Total cfu/plate	Gaz + cfu/plate	Rep 1	Rep 2	Rep 1	Rep 2	Log cfu/g	Log cfu/g		
				before	after		cfu/plate	cfu/plate	cfu/plate	cfu/plate																					
1997	11	Escalope de dinde	Poultry meat											4,03	3,95	3,99									4,02	3,85	4,02	1	a		
1997	206	Foie de poulet	Poultry liver											4,19	4,19	4,19									4,5	4,86	4,50	1	a		
1997	207	Foie de lapin	Rabbit liver											2,60	2,30	2,45									2,78	2,88	2,78	1	a		
1997	210	Pilons de poulet	Poultry meat											2,00	2,60	2,30									3,26	2,19	3,26	1	a		
1997	211	Ailes de poulet	Poultry meat											4,62	4,60	4,61									5,13	5,1	5,13	1	a		
1997	68	Caille aux raisins	Ready to reheat meat- based product											2,84	2,96	2,90									3,28	3,82	3,28	1	a		
1997	113	Gésiers de canard confits	Shredded duck confit											4,75	4,95	4,85									5	4,81	5,00	1	a		
1997	50	Steak haché	Ground beef											4,96	4,48	4,72									4,96	4,86	4,96	1	b		
1997	116	Minerai	Trimminings											3,90	3,87	3,89									3,95	3,89	3,95	1	b		
1997	208	Foie de porc	Pork liver											3,48	3,41	3,45									3,59	3,46	3,59	1	b		
1997	212	Cervelle	Brain											2,48	2,30	2,39									3,41	2,86	3,41	1	b		
1997	4	Rognons au Madère	Ready to reheat meat- based product											1,30	1,30	1,30									1,48	1,48	1,48	1	b		
1997	70	Côte de veau à la crème	Ready to reheat meat- based product											1,00	1,30	1,15									1	1,3	1,00	1	b		
1997	101	Bœuf carottes	Ready to reheat meat- based product											4,49	4,49	4,49									4,23	4,86	4,23	1	b		
1997	17	Chair à tomates	Sausage											5,90	5,74	5,82									5,87	5,89	5,87	1	c		
1997	19	Poitrine demi-sel	Half-salt chest											3,48	3,76	3,62									4	3,84	4,00	1	c		
1997	20	Rillettes	Rillettes											4,41	4,28	4,35									4,41	4,86	4,41	1	c		
1997	23	Jambon blanc	Ham											2,38	2,40	2,39									2,65	2,71	2,65	1	c		
1997	25	Chipolatas	Chipolatas											2,13	1,95	2,04									2,46	2,82	2,46	1	c		
1997	48	Chipolatas	Chipolatas											3,21	3,10	3,16									3,15	3,45	3,15	1	c		
1997	90	Boudin noir	Black sausage											1,95	1,60	1,78									2	1,9	2,00	1	c		
1997	91	Rillettes	Rillettes											4,7	4,64	4,67									4,67	4,87	4,67	1	c		
1997	92	Poitrine crue	Raw chest											1,00	1,30	1,15									1,48	1,3	1,48	1	c		
1997	121	Chipolatas	Chipolatas											5,76	5,56	5,66									5,76	5,85	5,76	1	c		
1997	125	Rillettes	Rillettes											1,60	1,48	1,54									2,19	2,73	2,19	1	c		
1997	126	Jambon	Ham											3,90	4,00	3,95									4,05	4,11	4,05	1	c		
1997	129	Poitrine fumée	Smoked chest											1,00	1,00	1,00									2,04	1,9	2,04	1	c		
1997	130	Boudin noir	Black sausage											2,81	2,72	2,77									3,58	2,41	3,58	1	c		
1997	205	Chipolatas	Chipolatas											3,49	3,19	3,34									3,65	2,88	3,65	1	c		

DAIRY PRODUCTS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2										Alternative method : Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
						Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1	Rep 2	Log cfu/g	Rep 1	Rep 2	Log cfu/g	Log cfu/g Mean	Dilution	Total	Rep 1	Gaz +	Total	Rep 2	Gaz +	Rep 1			Rep 2	Log cfu/g	Rep 1	Rep 2	Log cfu/g	Log cfu/g Mean																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
							on	our plate	our plate	our plate																								our plate	cfu/g	cfu/g	log cfu/g	log cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g	cfu/g

SEAFOOD																												
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2										Alternative method : Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type	
						Diluti on	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1 cfu/g	Rep 2 cfu/g	Rep 1 log cfu/g	Rep 2 log cfu/g	Log cfu/g Mean	Diluti on	Rep 1		Rep 2		Rep 1 cfu/g	Rep 2 cfu/g	Rep 1 log cfu/g	Rep 2 log cfu/g	Log cfu/g Mean			
				before	after		cfu/ plate a	cfu/ plate b	cfu/ plate a	cfu/ plate b							Total cfu/plate	Gas + cfu/plate	Total cfu/plate	Gas + cfu/plate								
1997	124	Sardines	Sardines										1,58	1,51	1,55									2,67	2,73	2,67	3	a
1997	163	Maquereau	Mackerel										3,04	2,73	2,89									3,02	2,86	3,02	3	a
2017	6162	Filet de saumon surgelé	Frozen salmon	6,93	/	10	73				750	/	2,88	/	2,88	10	65	46	/	/	650	/	2,81	/	2,81	3	a	
						100	9									100	6	2	/	/								
2017	6909	Colin d'Alaska	Hake	6,91	/	10	36				360	/	2,56	/	2,56	10	66				660	/	2,82	/	2,82	3	a	
						100	3									100	4											
2017	6910	Colin d'Alaska	Hake	6,95	/	100	56				5400	/	3,73	/	3,73	100	87				8700	/	3,94	/	3,94	3	a	
						1000	3									1000	4											
2017	6911	Saumon	Salmon	6,80	/	1000	74				76000	/	4,88	/	4,88	1000	97				97000	/	4,99	/	4,99	3	a	
						10000	10									10000	10											
1997	88	Cocktail de fruits de mer	Precooked seafood										1,60	1,70	1,65									1,7	1,78	1,70	3	b
1997	36	Moules	Mussels										1,30	1,30	1,30									1,84	1,8	1,84	3	b
2017	6228	Nem au crabe	RTRH Seafood	6,90	/	100	27				2500	/	3,40	/	3,40	100	34	34	/	/	3400	/	3,53	/	3,53	3	b	
						1000	1									1000	4	4	/	/								
2017	6229	Beignets de crevettes	RTRH Seafood	6,82	/	1000	9				10000	/	4,00	/	4,00	1000	24	24	/	/	24000	/	4,38	/	4,38	3	b	
						10000	2									10000	3	3	/	/								
2017	6230	Parmentier de poisson ciboulette	RTRH seafood	6,79	/	1000	108				110000	/	5,04	/	5,04	1000	91	91	/	/	91000	/	4,96	/	4,96	3	b	
						10000	11									10000	10	10	/	/								
1997	60	Feuilleté fruits de mer	Ready to reheat seafood product										4,49	4,46	4,48									4,39	4,39	4,39	3	c
1997	62	Coquille à la bretonne	Ready to reheat seafood product										1,00	1,30	1,15									1	1,48	1,00	3	c
1997	67	Filet de julienne en sauce	Ready to reheat seafood product										2,85	2,58	2,72									2,53	2,76	2,53	3	c
1997	73	Saumon fumé	Smoked salmon										3,56	3,34	3,45									3,6	3,49	3,60	3	c
1997	105b	Saumon fumé	Smoked salmon										5,26	5,00	5,13									5,28	5,39	5,28	3	c
1997	144	Saumon fumé	Smoked salmon										5,26	5,45	5,36									4,54	4,48	4,54	3	c

2017	6160	Lieu noir cru	Raw fish	7,06	/	100	Positive				<100	/	<2,00	/	<2,00	100	51	8	/	/	5100	/	3,71	/	3,71	3	a
						1000	Positive									1000	3	2	/	/							
2017	6161	Darne de saumon cru	Raw fish	7,05	/	1000	Positive				<1000	/	<3,00	/	<3,00	1000	16	4	/	/	16000	/	4,20	/	4,20	3	a
						10000	Positive									10000	1	0	/	/							
2017	6884	Filet de colin	Hake fillet	7,01	/	10	0				<10	/	<1,00	/	<1,00	10	0	0			<10	/	<1,00	/	<1,00	3	a
						100	0									100	0	0									
2017	6885	Filet de cabillaud	Cod fillet	7,03	/	100	0				<10	/	<1,00	/	<1,00	100	0	0			<10	/	<1,00	/	<1,00	3	a
						1000	0									1000	0	0									

VEGETABLES																											
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2										Alternative method : Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type
						Dilution	CFU	Rep 1 (confirmed) cfu/g	Rep 2 (confirmed) cfu/g	Rep 1 (confirmed) log cfu/g	Rep 2 (confirmed) log cfu/g	Log cfu/g Mean	Dilution	CFU	Total cfu/g plate	Rep 1 log cfu/g	Rep 2 log cfu/g	Total cfu/g plate	Rep 1 log cfu/g	Rep 2 log cfu/g	Log cfu/g						
				before	after																	cfu/g	cfu/g	log cfu/g	log cfu/g		
1997	39	Courgette	Zucchini										1,30	1,84	1,57								2	1,7	2,00	4	a
1997	81	Chou rouge râpé	Grated red cabbage										2,20	2,15	2,18								2,51	2,56	2,51	4	a
1997	154	Brocolis surgelés	Frozen broccolis										1,48	1,90	1,69								1,7	1,7	1,70	4	a
1997	155	Brocolis surgelés	Frozen broccolis										1,85	1,90	1,88								1,7	1,6	1,70	4	a
1997	156	Brocolis surgelés	Frozen broccolis										2,58	2,54	2,56								3,09	2,86	3,09	4	a
1997	159	Carottes surgelées	Frozen carrots										3,18	3,18	3,18								3,61	3,48	3,61	4	a
1997	160	Tomates surgelées	Frozen tomatoes										2,00	1,95	1,98								2,34	2,41	2,34	4	a
1997	161	Tomates surgelées	Frozen tomatoes										2,44	2,42	2,43								2,9	2,86	2,90	4	a
1997	162	Pommes de terre surgelées	Frozen potatoes										1,78	1,90	1,84								2,08	2,84	2,08	4	a
1997	82	Céleri râpé	Grated celery										3,08	3,04	3,06								2,62	2,83	2,62	4	b
1997	102	Salade primavera	Salad										3,67	3,61	3,64								3,74	3,79	3,74	4	b
2017	6231	Betteraves rouges assaisonnées	Seasoned red beetroot	6,81	/	10	26			270	/		2,43	/	2,43	10	22	22	/	/	220	/	2,34	/	2,34	4	b
						100	4									100	5	5	/	/							
2017	6232	Carottes râpées au citron	Seasoned grated carrots	6,78	/	10	41			440	/		2,64	/	2,64	10	38	0	/	/	380	/	2,58	/	2,58	4	b
						100	7									100	2	0	/	/							
2017	6233	Duo carottes céleri assaisonnés	Seasoned grated celery	6,75	/	10	16			160	/		2,20	/	2,20	10	15	15	/	/	150	/	2,18	/	2,18	4	
						100	2									100	4	4	/	/							
1997	35	Pomme de terre	Potatoes										4,53	3,81	4,17								4,72	4,8	4,72	4	c
2017	6234	Boulettes aux légumes carottes petits pois	RTRH beef	7,00	/	100	62			6000	/		3,78	/	3,78	100	67	67	/	/	6700	/	3,83	/	3,83	4	c
						1000	4									1000	4	4	/	/							
2017	6235	Boulettes aux légumes carottes petits pois	RTRH beef	7,00	/	10	24			230	/		2,36	/	2,36	10	21	21	/	/	210	/	2,32	/	2,32	4	c
						100	1									100	2	2	/	/							
2017	6236	Galettes gourmandes	RTRH vegetables	6,97	/	10	62			640	/		2,81	/	2,81	10	73	73	/	/	730	/	2,86	/	2,86	4	c
						100	8									100	8	8	/	/							
2017	6237	Fallafels pois chiches fèves coriandre menthe	RTRH vegetables	6,80	/	100	90			9200	/		3,96	/	3,96	100	98	98	/	/	9800	/	3,99	/	3,99	4	c
						1000	11									1000	9	9	/	/							

MISCELLANEOUS AND EGG-BASED PRODUCTS																												
Date of analysis	Sample number	Product (French name)	Product	pH	Reference method: ISO 21528-2										Alternative method : Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type		
					before	after	Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1 cfu/g	Rep 2 cfu/g	Rep 1 log cfu/g	Rep 2 log cfu/g	Log cfu/g Mean	Dilution	Rep 1		Rep 2		Rep 1 cfu/g	Rep 2 cfu/g	Rep 1 log cfu/g			Rep 2 log cfu/g	Log cfu/g
								on	on	on	on							on	on	on	on							
1997	54	Bouchée à la reine	Ready to reheat meat- based																									
1997	64	Croque-monsieur	Croque-monsieur																									
1997	117	Raviolis	Raviolis																									
2017	6238	Cannelloni pur bœuf	RTRH beef	7,05	/	10	55			560	/	2,75	/	2,75		10	67	67	/	/	670	/	2,83	/	2,83	5 a		
						100	7								100	8	8	/	/									
2017	6239	Pizza jambon	RTRH pizza	7,03	/	100	48			5000	/	3,70	/	3,70		100	57	57	/	/	5700	/	3,76	/	3,76	5 a		
						1000	7								1000	10	10	/	/									
1997	122	Eclair vanille	Pastry																									
1997	78	Chocolats	Chocolates																									
1997	118	Chou chantilly	Pastry																									
2017	6240	Flan pâtissier	Custard pastry	7,10	/	1000	10			10000	/	4,00	/	4,00		1000	10	10	/	/	10000	/	4,00	/	4,00	5 b		
						10000	1								10000	2	2	/	/									
2017	6241	Eclair au chocolat	Pastry	7,11	/	1000	22			23000	/	4,36	/	4,36		1000	28	28	/	/	28000	/	4,45	/	4,45	5 b		
						10000	3								10000	1	1	/	/									
1997	29	Crème pâtissière	Custard																									
1997	56	Œuf en gelée	Egg in jelly																									
1997	58	Mayonnaise	Mayonnaise																									
1997	84	Crème pâtissière	Custard																									
1997	104	Mayonnaise	Mayonnaise																									
1997	112	Coulee d'œuf	Whole egg																									

FEED PRODUCTS																											
Date of analysis	Sample number	Product (French name)	Product	pH		Reference method: ISO 21528-2										Alternative method : Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type
						Dilution	Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1 cfu/g	Rep 2 cfu/g	Rep 1 log cfu/g	Rep 2 log cfu/g	Log cfu/g Mean	Dilution	Rep 1		Rep 2		Rep 1 cfu/g	Rep 2 cfu/g	Rep 1 log cfu/g	Rep 2 log cfu/g	Log cfu/g Mean		
				before	after		cfu/plate	cfu/plate	cfu/plate	cfu/plate							Total cfu/plate	Gaz + cfu/plate	Total cfu/plate	Gaz + cfu/plate							
2010	150	Viande bovine hachée pour animaux	Beef meat for animals			1000	44	66	48	54	53000	50000	4,72	4,70	4,71	10000	5	5	8	7	50000	82000	4,70	4,71	4,70	6	a
						10000	5	1	6	2						100000	0	0	0	0							
2010	151	Viande bovine pour animaux en morceaux	Beef meat for animals			100	>150	>150	>150	>150	25000	26000	4,4	4,41	4,41	100	>100	71	>100	81	36000	31000	4,56	4,49	4,56	6	a
						1000	20	30	23	28						1000	36	17	34	17							
2010	152	Viande bovine pour animaux	Beef meat for animals			100	>150	>150	>150	>150	49000	27000	4,69	4,43	4,56	100	Unavailable				22000	35000	4,34	4,54	4,34	6	a
						1000	57	41	22	32						1000	22	16	35	26							
2010	153	Abats frais pour animaux	Fresh offal for animals			1000	15	18	23	13	17000	17000	4,23	4,23	4,23	1000	41	15	26	0	41000	19000	4,61	4,28	4,61	6	a
						10000	2	2	1	0						10000	1	0	1	1							
2010	657	Manchets sans os pour animaux	Beef meat for animals			1000	>150	>150	>150	>150	850000	1100000	5,93	6,04	5,99	1000	>100	>100	>100	>100	660000	840000	5,82	5,92	5,82	6	a
						10000	87	82	>150	110						10000	66	36	84	63							
2010	659	Cous de volaille pour animaux	Poultry neck for animals			1000	>150	>150	>150	>150	620000	520000	5,79	5,72	5,75	1000	>100	>100	>100	>100	650000	710000	5,81	5,85	5,81	6	a
						10000	83	41	41	63						10000	65	12	74	28							
2010	440	Brisures de riz pour chien	Broken rice for dog			100	>150	117	>150	>150	12000	19000	4,08	4,28	4,18	100	04	0	>100	0	11000	26000	4,04	4,41	4,04	6	b
						1000	24	5	14	24						1000	11	0	28	0							
2010	763	Saucisson pour chien	Sausage for dog			10	4	6	6	4	50	50	1,70	1,70	1,70	10	6	6	4	4	60	45	1,78	1,65	1,78	6	b
						100	0	0	0	0						100	0	0	1	1							
2010	765	Saucisson pour chien	Sausage for dog			10	61	61	44	52	600	480	2,78	2,68	2,73	10	56	56	64	64	560	580	2,75	2,77	2,75	6	b
						100	4	6	4	5						100	3	3	4	4							
2010	774	Mini filets pour chat au lapin	Pâté for cat			10	56	52	49	42	510	470	2,71	2,67	2,69	10	55	55	70	70	550	680	2,74	2,65	2,74	6	b
						100	1	2	7	6						100	7	7	8	5							
2017	6242	Saucisson pour chien	Sausage for dog	6,60	6,93	100	24				2300	/	3,36	/	3,36	100	26	26	/	/	2600	/	3,41	/	3,41	6	b
						1000	1									1000	4	4	/	/							
2010	155	Matières premières pour alimentation animale	Raw material			100	54	52	23	0	5300	1100	3,72	3,04	3,38	100	59	0	89	0	5900	8800	3,77	3,84	3,77	6	c
						1000	4	7	1	1						1000	7	0	0	0							
2010	661	Matières premières pour alimentation animale	Raw material			10	7	13	14	12	95	140	1,98	2,15	2,06	10	17	15	14	12	170	140	2,23	2,15	2,23	6	c
						100	1	0	3	2						100	0	0	1	1							
2010	662	Matières premières pour alimentation animale	Raw material			1000	134	140	>150	143	130000	140000	5,11	5,15	5,13	1000	111	0	132	0	111000	124000	5,05	5,08	5,05	6	c
						10000	10	11	15	10						10000	16	0	1	1							
2017	6907	Protéines déshydratées de volaille	Dehydrated poultry proteins	6,71	/	100	>150				62000	/	4,79	/	4,79	100	>100	>100			73000	/	4,86	/	4,86	6	c
						1000	62									1000	73	73									
2017	6908	Protéines déshydratées de volaille	Dehydrated poultry proteins	6,83	/	1000	>150				800000	/	5,9	/	5,9	1000	>100	>100			950000	/	5,98	/	5,98	6	c
						10000	80									10000	95	95									

2010	154	Matières premières pour alimentation animale	Raw material			1000	>150	>150	>150	>150	<10000	35000	<4,00	4,54	<4,27	1000	>100	1	>100	0	260000	340000	5,41	5,53	5,41	6	c
						10000	0	0	0	7						10000	26	0	34	0							
2017	6163	Protéines déshydratées de volaille	Poultry proteins dehydrated	6,76	/	10	0				<10	/	<1,00	/	<1,00	10	0	0	/	/	<10	/	<1,00	/	<1,00	6	c
						100	0									100	0	0	/	/							
2010	441	Matières premières pour alimentation animale	Raw material			10	0	1	0	0	<5	<10	0,7	<1,00	<0,85	10	1	1	4	4	10	80	1,00	1,16	1,00	6	c
						100	0	0	0	0						100	0	0	0	0							
2017	6164	Protéines déshydratées de volaille	Poultry proteins dehydrated	6,76	/	10	0				<10	/	<1,00	/	<1,00	10	0	0	/	/	<10	/	<1,00	/	<1,00	6	c
						100	0									100	0	0	/	/							

ENVIRONMENTAL SAMPLES																											
Date of analysis	Sample number	Product (French name)	Product	pH	Reference method: ISO 21528-2										Alternative method : Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type	
					Dilution	Rep 1 (confirmed) cfu/plate	Rep 2 (confirmed) cfu/plate	Rep 1 cfu/g	Rep 2 cfu/g	Log cfu/g	Rep 1 log cfu/g	Rep 2 log cfu/g	Log cfu/g Mean	Dilution	Rep 1 Total cfu/plate	Rep 1 Gas cfu/plate	Rep 2 Total cfu/plate	Rep 2 Gas cfu/plate	Rep 1 cfu/g	Rep 2 cfu/g	Rep 1 log cfu/g	Rep 2 log cfu/g	Log cfu/g Mean				
2015	3903	Chiffonnette balance après	Wipe (rice industry)	7,20	/	10	6	/	13	/	60	120	1,75	2,08	1,93	10	56	/	47	/	560	560	2,75	2,70	2,75	7	a
						100	0	/	0	/						100	10	/	8	/						7	a
2015	4014	Lingette maille sortie	Wipe after cleaning (fish)	7,19	/	10	>150	/	>150	/	3800	4800	3,58	3,68	3,63	10	>100	/	>100	/	4800	4800	3,68	3,68	3,68	7	a
						100	38	/	48	/						100	48	/	48	/							
2015	4562	Chiffonnette table préparation pâte	Wipe	6,92	/	10	11	/	8	/	120	80	2,08	1,90	1,99	10	29	/	24	/	290	280	2,46	2,40	2,46	7	a
						100	2	/	1	/						100	1	/	3	/							
2015	4563	Chiffonnette cuve	Wipe after cleaning	7,05	/	10	71	/	61	/	670	610	2,83	2,79	2,81	10	123	/	132	/	1230	1300	3,09	3,11	3,09	7	
						100	3	/	6	/						100	13	/	13	/							
2015	4564	Chiffonnette grille four fumage après	Wipe after cleaning	6,94	/	10	36	/	29	/	330	270	2,52	2,43	2,47	10	15	/	23	/	150	220	2,18	2,34	2,18	7	a
						100	0	/	1	/						100	0	/	1	/							
2015	4565	Chiffonnette table découpe après	Wipe after cleaning	6,91	/	10	22	/	26	/	220	240	2,34	2,38	2,36	10	46	/	48	/	460	440	2,66	2,64	2,66	7	a
						100	2	/	0	/						100	2	/	2	/							
2015	4006	Eau dessalage	Process water (fish industry)	6,95	/	10	25	/	11	/	230	100	2,36	2,00	2,18	10	20	/	22	/	200	200	2,30	2,30	2,30	7	b
						100	0	/	0	/						100	0	/	0	/							
2015	4008	Eau pareuse	Process water (fish industry)	7,14	/	10	>150	/	>150	/	5500	11000	3,74	4,04	3,89	10	>100	/	>100	/	3500	3600	3,54	3,52	3,54	7	b
						100	55	/	106	/						100	35	/	35	/							
2015	4010	Eau épineuse	Process water (fish industry)	7,20	/	10	>150	/	>150	/	2800	1300	3,45	3,11	3,28	10	78	/	98	/	780	1000	2,89	3,00	2,89	7	b
						100	28	/	13	/						100	17	/	14	/							
2017	6243	Eau de rinçage (industrie porc)	Rinsed water (Pork industry)	7,01	/	10	35				340	/	2,53	/	2,53	10	38	38	/	/	380	/	2,58	/	2,58	7	b
						100	2									100	1	1	/	/							
2017	6244	Eau de lavage	Wash water (pork industry)	7,03	/	10000	33				32000	/	4,51	/	4,51	10000	67	67	/	/	67000	/	4,83	/	4,83	7	b
						10000	2									10000	3	3	/	/							
2015	3678	Poussières industrie laitière	Dusts from dairy industry	6,36	/	10	5	/	4	/	50	40	1,70	1,60	1,65	10	11	/	13	/	110	130	2,04	2,11	2,04	7	c
						100	0	/	0	/						100	1	/	1	/							
2015	3679	Poussières industrie laitière	Dusts from dairy industry	6,48	/	100	32	/	26	/	3500	3700	3,54	3,57	3,56	10000	9	/	9	/	9000	9000	3,95	3,95	3,95	7	c
						1000	6	/	4	/						10000	1	/	1	/							
2017	6165	Déchets au sol découpe porc n°1	Dusts n°1 (pork industry)	7,17	/	10	9				30	/	1,95	/	1,95	10	17	12	/	/	170	/	2,23	/	2,23	7	c
						100	1									100	0	0	/	/							
2017	6166	Déchets au sol découpe porc n°2	Dusts n°2 (pork industry)	7,14	/	10000	21				19000	/	4,28	/	4,28	10000	24	0	/	/	24000	/	4,38	/	4,38	7	c
						10000	0									10000	1	0	/	/							
2017	6167	Déchets au sol découpe porc n°3	Dusts n°3 (pork industry)	7,16	/	10	35				330	/	2,52	/	2,52	10	36	0	/	/	360	/	2,56	/	2,56	7	c
						100	1									100	1	1	/	/							
2015	3844	Chiffonnette Microcut petits pois	Wipe (peas industry)	7,00	/	10	2	/	2	/	20	20	1,3	1,3	1,3	10	13	/	14	/	130	180	2,11	2,18	2,11	7	a
						100	0	/	0	/						100	1	/	2	/							
2015	3904	Chiffonnette plan de travail fabrication	Wipe (pastry industry)	7,16	/	100	1	/	1	/	100	100	2	2	2	100	31	/	40	/	3100	4000	3,49	3,60	3,49	7	a
						1000	0	/	0	/						1000	1	/	1	/							
2015	3905	Chiffonnette table de cuisson béchamel	Wipe (bechamel sauce)	7,00	/	1000	0	/	0	/	<100	<100	<2,00	<2,00	<2,00	100	21	/	12	/	2100	1400	3,32	3,04	3,32	7	a
						1000	0	/	0	/						1000	1	/	0	/							
2015	3906	Chiffonnette table découpe	Wipe (cheese industry)	6,97	/	10	0	/	1	/	<10	10	<1,00	<1,00	<1,00	10	1	/	0	/	10	<10	1,00	<1,00	1,00	7	
						100	0	/	0	/						100	0	/	0	/							
2015	4011	Ecouvillon tapis entrée pelease après	Swab after cleaning (fish)	7,08	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	aa
						100	0	/	0	/						100	0	/	0	/							
2015	4012	Ecouvillon tapis	Swab after cleaning (fish)	7,06	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	a
						100	0	/	0	/						100	0	/	0	/							
2015	4013	Lingette tapis parage après désinfection	Wipe after cleaning (fish)	7,19	/	10	>150	/	>150	/	>15000	12000	>4,18	4,08	>4,13	10	>100	/	>100	/	>10000	>10000	>4,00	>4,00	>4,00	7	a
						100	>150	/	124	/						100	>100	/	>100	/							
2015	4015	Lingette tapis parage après désinfection	Wipe after cleaning (fish)	7,18	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	a
						100	0	/	0	/						100	0	/	0	/							
2015	4494	Chiffonnette local vaisselle atelier	Wipe (dishwasher)	7,01	/	10	>1500	/	>1500	/	>15000	>15000	>4,18	>4,18	>4,18	10	>1000	/	>1000	/	>10000	>10000	>4,00	>4,00	>4,00	7	a
						100	>15000	/	>15000	/						100	>10000	/	>10000	/							
2015	4495	Chiffonnette table atelier	Wipe (table)	6,97	/	10	>1500	/	>1500	/	>15000	>15000	>4,18	>4,18	>4,18	10	>1000	/	>1000	/	>10000	>10000	>4,00	>4,00	>4,00	7	a
						100	>15000	/	>15000	/						100	>10000	/	>10000	/							
2015	4496	Chiffonnette cutter	Wipe (cutter)	7,00	/	10	>1500	/	>1500	/	>15000	>15000	>4,18	>4,18	>4,18	10	>1000	/	>1000	/	>10000	>10000	>4,00	>4,00	>4,00	7	a
						100	>15000	/	>15000	/						100	>10000	/	>10000	/							
2015	4497	Chiffonnette poussoir	Wipe (push-button)	7,03	/	100	>15000	/	>15000	/	>15000	>15000	>5,18	>5,18	>5,18	100	>10000	/	>10000	/	>10000	>10000	>5,00	>5,00	>5,00	7	a
						1000	>150000	/	>150000	/						1000	>100000	/	>100000	/							
2015	3841	Eau de rinçage n°2 petits pois après	Process water (peas)	7,01	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	b
						100	0	/	0	/						100	0	/	0	/							
2015	3845	Eau de cuisson petits pois	Process water (peas)	7,00	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	8	/	13	/	80	180	1,90	2,11	1,90	7	b
						100	0	/	0	/						100	0	/	1	/							

Date of analysis	Sample number	Product (French name)	Product	pH	Reference method: ISO 21528-2										Alternative method : Petrifilm <i>Enterobacteriaceae</i> Count Plate										Category	Type		
					Dilution		Rep 1 (confirmed)		Rep 2 (confirmed)		Rep 1		Rep 2		Log cfu/g Mean	Dilution		Rep 1		Rep 2		Rep 1 cfu/g	Rep 2 cfu/g	Log cfu/g Mean				
					10 ⁰	10 ⁻¹	cfu/plate	cfu/plate	cfu/plate	cfu/plate	cfu/g	cfu/g	log cfu/g	log cfu/g		10 ⁰	10 ⁻¹	Total cfu/plate	Gaz + cfu/plate	Total cfu/plate	Gaz + cfu/plate							
2015	3907	Eau de rinçage bœcher (PDL+eau)	Process water (milk industry)	6.98	/	100	0	0	0	0	0	<100	<100	<2,00	<2,00	<2,00	100	1	1	0	0	100	<100	2,00	<2,00	<2,00	7	b
2015	4007	Eau peleuse	Process water (fish industry)	7.20	/	1000	0	/	0	/	0	<1	<1	<0,00	<0,00	<0,00	1000	0	/	0	/	<10	<1	<1,00	<0,00	<1,00	7	b
						10	0	/	0	/	0	/	0	10	0	/	0	/	10	0	/	0	/	3200	5600	3,51	2,75	3,51
2015	4009	Eau laveuse poissons	Process water (fish industry)	7.12	/	10	(>150)	/	(>150)	/	<2,00	<2,00	<2,00	<2,00	<2,00	10	>100	/	>100	/	3200	5600	3,51	2,75	3,51	7	b	
						100	0 (ox+)	/	0	/	<10	<10	<1,00	<1,00	<1,00	100	32	/	60	/	<10	<10	<1,00	<1,00	<1,00	7	c	
						10	0	/	0	/	0	/	10	0	/	0	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7
2015	3676	Poussières industrie ovoproduits	Dusts from egg industry	6.76	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	c	
2015	3677	Poussières d'aspirateur (atelier)	Dusts	6.93	/	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	10	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7	c	
						100	0	/	0	/	0	/	100	0	/	0	/	100	0	/	0	/	<10	<10	<1,00	<1,00	<1,00	7

Appendix K - Statistical calculations

Category	Type	#	Matrix	ISO	Alternativ	ISO	Alternativ	Mean	Difference	
				CFU/g	CFU/g	log CFU/g	log CFU/g			
Meat products	a	11	Escalope de dinde			3,99	4,02	4,01	0,03	1
	a	206	Foie de poulet			4,19	4,50	4,35	0,31	2
	a	207	Foie de lapin			2,45	2,78	2,62	0,33	3
	a	210	Pilons de poulet			2,30	3,26	2,78	0,96	4
	a	211	Ailes de poulet			4,61	5,13	4,87	0,52	5
	a	68	Caille aux raisins			2,90	3,28	3,09	0,38	6
	a	113	Gésiers de canard confits			4,85	5,00	4,93	0,15	7
	b	50	Steak haché			4,72	4,96	4,84	0,24	8
	b	116	Mineral			3,89	3,95	3,92	0,06	9
	b	208	Foie de porc			3,45	3,59	3,52	0,14	10
	b	212	Cervelle			2,39	3,41	2,90	1,02	11
	b	4	Rognons au Madère			1,30	1,48	1,39	0,18	12
	b	70	Côte de veau à la crème			1,15	1,00	1,08	-0,15	13
	b	101	Bœuf carottes			4,49	4,23	4,36	-0,26	14
	c	17	Chair à tomates			5,82	5,87	5,85	0,05	15
	c	19	Poitrine demi-sel			3,62	4,00	3,81	0,38	16
	c	20	Rillettes			4,35	4,41	4,38	0,06	17
	c	23	Jambon blanc			2,39	2,65	2,52	0,26	18
	c	25	Chipolatas			2,04	2,46	2,25	0,42	19
	c	48	Chipolatas			3,16	3,15	3,16	-0,01	20
	c	90	Boudin noir			1,78	2,00	1,89	0,22	21
	c	91	Rillettes			4,67	4,67	4,67	0,00	22
	c	92	Poitrine crue			1,15	1,48	1,32	0,33	23
	c	121	Chipolatas			5,66	5,76	5,71	0,10	24
	c	125	Rillettes			1,54	2,19	1,87	0,65	25
	c	126	Jambon			3,95	4,05	4,00	0,10	26
	c	129	Poitrine fumée			1,00	2,04	1,52	1,04	27
	c	130	Boudin noir			2,77	3,58	3,18	0,81	28
	c	205	Chipolatas			3,34	3,65	3,50	0,31	29
	Average difference of the category								0,30	
	Standard deviation of differences								0,33	
Dairy products	a	38	Lait cru			2,80	3,00	2,90	0,20	1
	a	106b	Crème fraîche			6,18	7,40	6,79	1,22	2
	a	107b	Crème fraîche			7,35	7,46	7,41	0,11	3
	a	119	Lait cru			3,71	4,82	4,27	1,11	4
	a	6159	Lait cru			4,15	4,04	4,10	-0,11	5
	b	9	Fromage de chèvre			3,09	3,48	3,29	0,39	6
	b	10	Tomme de brebis			4,23	4,83	4,53	0,60	7
	b	42	Munster			6,57	6,75	6,66	0,18	8
	b	75	Fromage de chèvre			2,97	2,80	2,89	-0,17	9
	b	85	Raclette au lait cru			3,07	3,39	3,23	0,32	10
	b	86	Brie de Meaux au lait cru			7,19	7,23	7,21	0,04	11
	b	110	Brebis demi-sec			3,42	4,12	3,77	0,70	12
	b	111	Tomme Mont d'Arrée			5,41	5,73	5,57	0,32	13
	b	120	Brie			4,33	4,19	4,26	-0,14	14
	b	128	Vieux pané			2,03	2,77	2,40	0,74	15
	b	131	Livarot			2,85	3,28	3,07	0,43	16
	b	132	Munster			5,55	5,85	5,70	0,30	17
	b	201	Camembert			7,77	7,81	7,79	0,04	18
	b	202	Reblochon			7,47	7,43	7,45	-0,04	19
	b	203	Camembert			7,16	7,23	7,20	0,07	20
	b	204	Camembert			6,10	6,28	6,19	0,18	21
	c	140	Nougat glacé			1,15	1,95	1,55	0,80	22
	c	141	Nougat glacé			1,24	1,56	1,40	0,32	23
	c	142	Nougat glacé			1,54	1,66	1,60	0,12	24
	c	6226	Crème dessert à la vanille			2,15	2,36	2,26	0,21	25
	c	6227	Riz au lait			4,32	4,80	4,56	0,48	26
	c	6912	Poudre de lait écrémée			2,26	2,81	2,54	0,55	27
	c	6913	Poudre de lait écrémée			4,99	5,17	5,08	0,18	28
	c	6914	Poudre de lait infantile sans probiotiques			2,60	3,18	2,89	0,58	29
	c	6915	Poudre de lait infantile avec probiotiques			3,08	3,14	3,11	0,06	30
	c	6916	Poudre de lait infantile avec probiotiques			4,81	4,79	4,80	-0,02	31
	Average difference of the category								0,32	
	Standard deviation of differences								0,34	

Seafood products	a	124	Sardines			1,55	2,67	2,11	1,12	1
	a	163	Maquereau			2,89	3,02	2,96	0,13	2
	a	6162	Filet de saumon surgelé			2,88	2,81	2,85	-0,07	3
	a	6909	Colin d'Alaska			2,56	2,82	2,69	0,26	4
	a	6910	Colin d'Alaska			3,73	3,94	3,83	0,21	5
	a	6911	Saumon			4,88	4,99	4,93	0,11	6
	b	88	Cocktail de fruits de mer			1,65	1,70	1,68	0,05	7
	b	36	Moules			1,30	1,84	1,57	0,54	8
	b	6228	Nem au crabe			3,40	3,53	3,47	0,13	9
	b	6229	Beignets de crevettes			4,00	4,38	4,19	0,38	10
	b	6230	Parmentier de poisson ciboulette			5,04	4,96	5,00	-0,08	11
	c	60	Feuilleté fruits de mer			4,48	4,39	4,44	-0,09	12
	c	62	Coquille à la bretonne			1,15	1,00	1,08	-0,15	13
	c	67	Filet de julienne en sauce			2,72	2,53	2,63	-0,19	14
	c	73	Saumon fumé			3,45	3,60	3,53	0,15	15
	c	105b	Saumon fumé			5,13	5,28	5,21	0,15	16
	c	144	Saumon fumé			5,36	4,54	4,95	-0,82	17
Average difference of the category									0,11	
Standard deviation of differences									0,39	
Vegetables	a	39	Courgette			1,57	2,00	1,79	0,43	1
	a	81	Chou rouge râpé			2,18	2,51	2,35	0,33	2
	a	154	Brocolis surgelés			1,69	1,70	1,70	0,01	3
	a	155	Brocolis surgelés			1,88	1,70	1,79	-0,18	4
	a	156	Brocolis surgelés			2,56	3,09	2,83	0,53	5
	a	159	Carottes surgelées			3,18	3,61	3,40	0,43	6
	a	160	Tomates surgelées			1,98	2,34	2,16	0,36	7
	a	161	Tomates surgelées			2,43	2,90	2,67	0,47	8
	a	162	Pommes de terre surgelées			1,84	2,08	1,96	0,24	9
	b	82	Céleri râpé			3,06	2,62	2,84	-0,44	10
	b	102	Salade primavera			3,64	3,74	3,69	0,10	11
	b	6231	Betteraves rouges assaisonnées			2,43	2,34	2,39	-0,09	12
	b	6232	Carottes râpées au citron			2,64	2,58	2,61	-0,06	13
	b	6233	Duo carottes céleri assaisonnés			2,20	2,18	2,19	-0,02	14
	c	35	Pomme de terre			4,17	4,72	4,45	0,55	15
	c	6234	Boulettes aux légumes carottes petits pois mais			3,78	3,83	3,80	0,05	16
	c	6235	Boulettes aux légumes carottes petits pois mais			2,36	2,32	2,34	-0,04	17
	c	6236	Galettes gourmandes lentilles carottes			2,81	2,86	2,84	0,05	18
	c	6237	Fallafels pois chiches fèves coriandre menthe			3,96	3,99	3,98	0,03	19
Average difference of the category									0,14	
Standard deviation of differences									0,27	
Egg and composite	a	54	Bouchée à la reine			3,33	3,26	3,30	-0,07	1
	a	64	Croque-monsieur			3,68	3,75	3,72	0,07	2
	a	117	Raviolis			2,00	2,78	2,39	0,78	3
	a	6238	Cannelloni pur bœuf			2,75	2,83	2,79	0,08	4
	a	6239	Pizza jambon fromage			3,70	3,76	3,73	0,06	5
	b	122	Eclair vanille			2,24	3,66	2,95	1,42	6
	b	78	Chocolats			1,63	2,26	1,95	0,63	7
	b	118	Chou chantilly			4,41	4,51	4,46	0,10	8
	b	6240	Flan pâtissier			4,00	4,00	4,00	0,00	9
	b	6241	Eclair au chocolat			4,36	4,45	4,40	0,09	10
	c	29	Crème pâtissière			1,15	1,95	1,55	0,80	11
	c	56	Œuf en gelée			2,89	2,78	2,84	-0,11	12
	c	58	Mayonnaise			2,79	2,30	2,55	-0,49	13
	c	84	Crème pâtissière			1,74	2,13	1,94	0,39	14
	c	104	Mayonnaise			3,18	3,76	3,47	0,58	15
	c	112	Coule d'œuf			4,51	4,49	4,50	-0,02	16
Average difference of the category									0,27	
Standard deviation of differences									0,47	

Pet food	a	150	Viande bovine hachée pour animaux			4,71	4,70	4,70	-0,01	1
	a	151	Viande bovine pour animaux en morceaux			4,41	4,56	4,48	0,15	2
	a	152	Viande bovine pour animaux			4,56	4,34	4,45	-0,22	3
	a	153	Abats frais pour animaux			4,23	4,61	4,42	0,38	4
	a	657	Flanchet sans os pour animaux			5,99	5,82	5,90	-0,17	5
	a	659	Cous de volaille pour animaux			5,75	5,81	5,78	0,06	6
	b	440	Brisures de riz pour chien			4,18	4,04	4,11	-0,14	7
	b	763	Saucisson pour chien			1,70	1,78	1,74	0,08	8
	b	765	Saucisson pour chien			2,73	2,75	2,74	0,02	9
	b	774	Mini filets pour chat au lapin			2,69	2,74	2,72	0,05	10
	b	6242	Saucisson pour chien			3,36	3,41	3,39	0,05	11
	c	155	Matières premières pour alimentation animale			3,38	3,77	3,58	0,39	12
	c	661	Matières premières pour alimentation animale			2,06	2,23	2,15	0,17	13
	c	662	Matières premières pour alimentation animale			5,13	5,05	5,09	-0,08	14
	c	6907	Protéines déshydratées de volaille			4,79	4,86	4,83	0,07	15
	c	6908	Protéines déshydratées de volaille			5,9	5,98	5,94	0,08	16
Average difference of the category									0,06	
Standard deviation of differences									0,17	
Environmental samples	a	3903	Chiffonnette balance après désinfection cuisson riz			1,93	2,75	2,34	0,82	1
	a	4014	Lingette maille sortie parage après désinfection			3,63	3,68	3,66	0,05	2
	a	4562	Chiffonnette table préparation pâte			1,99	2,46	2,23	0,47	3
	a	4563	Chiffonnette cuve broyeur après nettoyage			2,81	3,09	2,95	0,28	4
	a	4564	Chiffonnette grille four fumage après nettoyage			2,47	2,18	2,32	-0,29	5
	a	4565	Chiffonnette table découpe après nettoyage			2,36	2,66	2,51	0,30	6
	b	4006	Eau dessalage			2,18	2,30	2,24	0,12	7
	b	4008	Eau pareuse			3,89	3,54	3,72	-0,35	8
	b	4010	Eau épineuse			3,28	2,89	3,09	-0,39	9
	b	6243	Eau de rinçage (industrie porc)			2,53	2,58	2,55	0,05	10
	b	6244	Eau de lavage sciage viande (porc industrie)			4,51	4,83	4,67	0,32	11
	c	3678	Poussières industrie laitière			1,65	2,04	1,85	0,39	12
	c	3679	Poussières industrie laitière			3,56	3,95	3,76	0,39	13
	c	6165	Déchets au sol découpe porc n°1			1,95	2,23	2,09	0,28	14
	c	6166	Déchets au sol découpe porc n°2			4,28	4,38	4,33	0,10	15
	c	6167	Déchets au sol découpe porc n°3			2,52	2,56	2,54	0,04	16
Average difference of the category									0,16	
Standard deviation of differences									0,32	144
Average difference all categories									0,21	
Standard deviation of differences									0,34	

n = 144
 $\beta = 95\%$
 $T(0.025;143)= 1,9766922$

Lower confidence limit	Upper confidence limit
-0,47	0,90

n = 29
 $\beta = 95\%$
 $T(0.025;28)= 2,04840714$

Meat product	-0,39	0,99
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n = 31
 $\beta = 95\%$
 $T(0.025;30)= 2,04227246$

Dairy product	-0,40	1,03
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n = 17
 $\beta = 95\%$
 $T(0.025;16)= 2,1199053$

Seafood	-0,75	0,96
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n = 19
 $\beta = 95\%$
 $T(0.025;18)= 2,10092204$

Vegetables	-0,44	0,73
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n = 16
 $\beta = 95\%$
 $T(0.025;15)= 2,13144955$

Egg products and composite food	-0,76	1,30
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n = 16
 $\beta = 95\%$
 $T(0.025;15)= 2,13144955$

Pet food	-0,32	0,43
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n = 16
 $\beta = 95\%$
 $T(0.025;15)= 2,10981558$

Environmental sample	-0,53	0,85
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Results not used in the statistical interpretation

Category	Type	#	Sample	ISO CFU/g	MA CFU/g	Mean	Difference	
Seafood	a	6160	Lieu noir cru	2,00	3,71	2,85	1,71	corr
	a	6161	Dame de saumon cru	3,00	4,20	3,60	1,20	corr
	a	6884	Filet de colin	1,00	1,00	1,00	0,00	corr
	a	6885	Filet de cabillaud	1,00	1,00	1,00	0,00	corr
Pet food	c	154	Matières premières pour alimentation animale	4,27	5,41	4,84	1,14	corr
	c	6163	Protéines déshydratées de volaille	1,00	1,00	1,00	0,00	corr
	c	441	Matières premières pour alimentation animale	0,85	1,00	0,93	0,15	corr
	c	6164	Protéines déshydratées de volaille	1,00	1,00	1,00	0,00	corr
Environmental samples	a	3844	Chiffonnette Microcut petits pois	1,30	2,11	1,71	0,81	<4
	a	3904	Chiffonnette plan de travail fabrication macarons après désinfection	2,00	3,49	2,75	1,49	<4
	a	3905	Chiffonnette table de cuisson béchamel	2,00	3,32	2,66	1,32	corr
	a	3906	Chiffonnette table découpe emmenthal	1,00	1,00	1,00	0,00	corr
	a	4011	Ecouvillon tapis entrée pelease après désinfection	1,00	1,00	1,00	0,00	corr
	a	4012	Ecouvillon tapis diviseur après désinfection	1,00	1,00	1,00	0,00	corr
	a	4013	Lingette tapis parage après désinfection	4,13	4,00	4,07	-0,13	corr
	a	4015	Lingette tapis parage après désinfection	1,00	1,00	1,00	0,00	corr
	a	4494	Chiffonnette local vaisselle atelier	4,18	4,00	4,09	-0,18	corr
	a	4495	Chiffonnette table atelier	4,18	4,00	4,09	-0,18	corr
	a	4496	Chiffonnette cutter	4,18	4,00	4,09	-0,18	corr
	a	4497	Chiffonnette poussoir	5,18	5,00	5,09	-0,18	corr
	b	3841	Eau de rinçage n°2 petits pois après cuisson	1,00	1,00	1,00	0,00	corr
	b	3845	Eau de cuisson petits pois	1,00	1,90	1,45	0,90	corr
	b	3907	Eau de rinçage bœcher (PDL+eau)	2,00	2,00	2,00	0,00	corr
	b	4007	Eau pelease	0,00	1,00	0,50	1,00	corr
	b	4009	Eau laveuse poissons	2,00	3,51	2,75	1,51	corr
	c	3676	Poussières industrie ovoproduits	1,00	1,00	1,00	0,00	corr
	c	3677	Poussières d'aspirateur (atelier)	1,00	1,00	1,00	0,00	corr

Results not used in the statistical interpretation

Category	Type	#	Sample	ISO CFU/g	MA CFU/g	Mean	Difference	
Seafood	a	6160	Lieu noir cru	2,00	3,71	2,85	1,71	corr
	a	6161	Dame de saumon cru	3,00	4,20	3,60	1,20	corr
	a	6884	Filet de colin	1,00	1,00	1,00	0,00	corr
	a	6885	Filet de cabillaud	1,00	1,00	1,00	0,00	corr
Pet food	c	154	Matières premières pour alimentation animale	4,27	5,41	4,84	1,14	corr
	c	6163	Protéines déshydratées de volaille	1,00	1,00	1,00	0,00	corr
	c	441	Matières premières pour alimentation animale	0,85	1,00	0,93	0,15	corr
	c	6164	Protéines déshydratées de volaille	1,00	1,00	1,00	0,00	corr
Environmental samples	a	3844	Chiffonnette Microcut petits pois	1,30	2,11	1,71	0,81	<4
	a	3904	Chiffonnette plan de travail fabrication macarons après désinfection	2,00	3,49	2,75	1,49	<4
	a	3905	Chiffonnette table de cuisson béchamel	2,00	3,32	2,66	1,32	corr
	a	3906	Chiffonnette table découpe emmenthal	1,00	1,00	1,00	0,00	corr
	a	4011	Ecouvillon tapis entrée pelease après désinfection	1,00	1,00	1,00	0,00	corr
	a	4012	Ecouvillon tapis diviseur après désinfection	1,00	1,00	1,00	0,00	corr
	a	4013	Lingette tapis parage après désinfection	4,13	4,00	4,07	-0,13	corr
	a	4015	Lingette tapis parage après désinfection	1,00	1,00	1,00	0,00	corr
	a	4494	Chiffonnette local vaisselle atelier	4,18	4,00	4,09	-0,18	corr
	a	4495	Chiffonnette table atelier	4,18	4,00	4,09	-0,18	corr
	a	4496	Chiffonnette cutter	4,18	4,00	4,09	-0,18	corr
	a	4497	Chiffonnette poussoir	5,18	5,00	5,09	-0,18	corr
	b	3841	Eau de rinçage n°2 petits pois après cuisson	1,00	1,00	1,00	0,00	corr
	b	3845	Eau de cuisson petits pois	1,00	1,90	1,45	0,90	corr
	b	3907	Eau de rinçage bœcher (PDL+eau)	2,00	2,00	2,00	0,00	corr
	b	4007	Eau pelease	0,00	1,00	0,50	1,00	corr
	b	4009	Eau laveuse poissons	2,00	3,51	2,75	1,51	corr
	c	3676	Poussières industrie ovoproduits	1,00	1,00	1,00	0,00	corr
	c	3677	Poussières d'aspirateur (atelier)	1,00	1,00	1,00	0,00	corr

Appendix L: accuracy profile - raw results

Matrix	Strain	Level	N° sample	Reference method : ISO 21528-2				Alternative method:			
								Petrifilm <i>Enterobacteriaceae</i>			
								24h ± 2h at 37°C ± 1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/g	cfu/g	log cfu/g
Pork pâté Batch 1 Aerobic mesophilic flora: 20 CFU/g	<i>Enterobacter agglomerans</i> 135	1	6862	10	14	140	2,15	10	24	240	2,38
				100	1			100	2		
			6863	10	16	160	2,20	10	22	220	2,34
				100	2			100	3		
			6864	10	15	140	2,15	10	27	270	2,43
				100	0			100	4		
		2	6865	10	16	170	2,23	10	30	300	2,48
				100	3			100	5		
			6866	10	24	260	2,41	10	25	250	2,40
				100	4			100	1		
		3	4818	100	136	14000	4,15	100	135	13500	4,13
				1000	16			1000	12		
			4819	100	111	11000	4,04	100	153	15300	4,18
				1000	13			1000	12		
			4820	100	140	14000	4,15	100	150	15000	4,18
				1000	11			1000	18		
		4	4821	100	133	14000	4,15	100	165	16500	4,22
				1000	17			1000	15		
			4822	100	112	12000	4,08	100	105	10500	4,02
				1000	15			1000	11		
		5	4828	1000	27	26000	4,41	1000	26	26000	4,41
				10000	2			10000	1		
			4829	1000	26	25000	4,40	1000	28	28000	4,45
				10000	2			10000	2		
		6	4830	1000	19	18000	4,26	1000	20	20000	4,30
				10000	1			10000	2		
			4831	1000	24	24000	4,38	1000	32	32000	4,51
				10000	2			10000	2		
		7	4832	1000	22	23000	4,36	1000	22	22000	4,34
				10000	3			10000	2		
Pork pâté Aerobic mesophilic flora: 0 CFU/g	<i>Enterobacter agglomerans</i> 135	1	6867	10	20	190	2,28	10	25	250	2,40
				100	1			100	2		
			6868	10	33	340	2,53	10	26	260	2,41
				100	4			100	1		
			6869	10	20	200	2,30	10	31	310	2,49
				100	2			100	2		
		2	6870	10	29	290	2,46	10	30	300	2,48
				100	3			100	2		
			6871	10	21	240	2,38	10	16	160	2,20
				100	5			100	2		
		3	4843	1000	18	18000	4,26	100	178	17800	4,25
				10000	2			1000	18		
			4844	1000	13	15000	4,18	100	169	16900	4,23
				10000	3			1000	18		
		4	4845	1000	16	15000	4,18	100	159	15900	4,20
				10000	1			1000	11		
			4846	1000	17	17000	4,23	100	178	17800	4,25
				10000	2			1000	12		
		5	4847	1000	16	16000	4,20	100	143	14300	4,16
				10000	2			1000	17		
		6	4853	1000	28	29000	4,46	1000	31	31000	4,49
				10000	4			10000	5		
			4854	1000	24	24000	4,38	1000	30	30000	4,48
				10000	2			10000	2		
		7	4855	1000	25	25000	4,40	1000	27	27000	4,43
				10000	2			10000	2		
			4856	1000	26	25000	4,40	1000	29	29000	4,46
				10000	2			10000	6		
		8	4857	1000	24	23000	4,36	1000	30	30000	4,48
				10000	1			10000	1		

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2				Alternative method: Petrifilm <i>Enterobacteriaceae</i>			
								24h ± 2h at 37°C ± 1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm	cfu/g	log cfu/g
Pasteurized milk Batch 1 Aerobic mesophilic flora: 0 CFU/g	<i>Hafnia alvei</i> 130	1	5403	10	24	240	2,38	10	28	280	2,45
				100	2			100	1		
			5404	10	23	220	2,34	10	24	240	2,38
				100	1			100	0		
			5405	10	34	340	2,53	10	25	250	2,40
				100	3			100	5		
		2	5406	10	31	310	2,49	10	34	340	2,53
				100	3			100	0		
			5407	10	27	280	2,45	10	33	330	2,52
				100	4			100	2		
			5408	100	53	5200	3,72	100	43	4300	3,63
				1000	4			1000	0		
			5409	100	48	4700	3,67	100	49	4900	3,69
				1000	4			1000	5		
			5410	100	41	3700	3,57	100	46	4600	3,66
				1000	0			1000	2		
			5411	100	46	4700	3,67	100	45	4500	3,65
				1000	6			1000	4		
			5412	100	34	3400	3,53	100	36	3600	3,56
				1000	3			1000	4		
		3	5413	1000	104	100000	5,00	1000	90	90000	4,95
				10000	6			10000	12		
			5414	1000	88	85000	4,93	1000	87	87000	4,94
				10000	6			10000	8		
			5415	1000	85	83000	4,92	1000	96	96000	4,98
				10000	6			10000	4		
Pasteurized milk Aerobic mesophilic flora: 10 CFU/g	<i>Hafnia alvei</i> 130	1	5416	1000	88	87000	4,94	1000	81	81000	4,91
				10000	8			10000	10		
			5417	1000	81	77000	4,89	1000	94	94000	4,97
				10000	4			10000	10		
			5418	10	32	310	2,49	10	28	280	2,45
				100	2			100	2		
		2	5419	10	28	280	2,45	10	38	380	2,58
				100	3			100	1		
			5420	10	24	240	2,38	10	21	210	2,32
				100	2			100	2		
			5421	10	17	170	2,23	10	27	270	2,43
				100	2			100	0		
			5422	10	22	250	2,40	10	22	220	2,34
				100	5			100	1		
			5423	100	52	5100	3,71	100	46	4600	3,66
				1000	4			1000	1		
		3	5424	100	43	4200	3,62	100	63	6300	3,80
				1000	3			1000	0		
			5425	100	39	3900	3,59	100	50	5000	3,70
				1000	4			1000	4		
			5426	100	41	4000	3,60	100	41	4100	3,61
				1000	3			1000	2		
		3	5427	100	51	5000	3,70	100	55	5500	3,74
				1000	4			1000	2		
			5428	1000	84	82000	4,91	1000	85	85000	4,93
				10000	6			10000	9		
			5429	1000	86	85000	4,93	1000	95	95000	4,98
				10000	7			10000	13		
			5430	1000	91	87000	4,94	1000	89	89000	4,95
				10000	5			10000	12		
			5431	1000	93	97000	4,99	1000	87	87000	4,94
				10000	14			10000	10		
			5432	1000	83	84000	4,92	1000	85	85000	4,93
				10000	9			10000	11		

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2				Alternative method:			
								Petrifilm <i>Enterobacteriaceae</i>			
								24h ± 2h at 37°C ± 1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm	cfu/g	log cfu/g
Frozen salmon fillet Batch 1 Aerobic mesophilic flora: 20 CFU/g	<i>Klebsiella oxytoca</i> 179	1	5626	10	39	390	2,59	10	22	220	2,34
				100	4			100	4		
			5627	10	42	430	2,63	10	38	380	2,58
				100	5			100	2		
			5628	10	32	360	2,56	10	26	260	2,41
				100	8			100	8		
		2	5629	10	42	400	2,60	10	32	320	2,51
				100	2			100	0		
			5630	10	30	300	2,48	10	19	190	2,28
				100	3			100	4		
			5631	100	39	4000	3,60	100	35	3500	3,54
				1000	5			1000	3		
			5632	100	60	5600	3,75	100	48	4800	3,68
				1000	2			1000	1		
			5633	100	64	6300	3,80	100	53	5300	3,72
				1000	5			1000	4		
		3	5634	100	45	4500	3,65	100	48	4800	3,68
				1000	5			1000	4		
			5635	100	49	4800	3,68	100	52	5200	3,72
				1000	4			1000	1		
			5636	1000	88	83000	4,92	1000	98	98000	4,99
				10000	3			10000	12		
			5637	1000	110	110000	5,04	1000	104	104000	5,02
				10000	11			10000	3		
			5638	1000	116	110000	5,04	1000	120	120000	5,08
				10000	8			10000	10		
Frozen salmon fillet Aerobic mesophilic flora: 50 CFU/g	<i>Klebsiella oxytoca</i> 179	1	5639	1000	89	91000	4,96	1000	114	114000	5,06
				10000	11			10000	10		
			5640	1000	110	110000	5,04	1000	92	92000	4,96
				10000	8			10000	10		
		2	5824	10	53	520	2,72	10	45	450	2,65
				100	4			100	5		
			5825	10	37	360	2,56	10	37	370	2,57
				100	2			100	5		
			5826	10	50	520	2,72	10	51	510	2,71
				100	7			100	3		
		3	5827	10	45	430	2,63	10	42	420	2,62
				100	2			100	3		
			5828	10	50	520	2,72	10	57	570	2,76
				100	7			100	7		
		2	5829	100	40	3700	3,57	100	54	5400	3,73
				1000	1			1000	7		
			5830	100	51	4800	3,68	100	49	4900	3,69
				1000	2			1000	4		
			5831	100	50	4900	3,69	100	46	4600	3,66
				1000	4			1000	6		
		3	5832	100	52	5000	3,70	100	55	5500	3,74
				1000	3			1000	3		
			5833	100	54	5100	3,71	100	53	5300	3,72
				1000	2			1000	0		
		2	5834	1000	100	98000	4,99	1000	92	92000	4,96
				10000	8			10000	9		
			5835	1000	107	100000	5,00	1000	99	99000	5,00
				10000	8			10000	12		
			5836	1000	112	110000	5,04	1000	111	111000	5,05
				10000	10			10000	12		
		3	5837	1000	93	93000	4,97	1000	113	113000	5,05
				10000	9			10000	0		
			5838	1000	93	92000	4,96	1000	89	89000	4,95
				10000	8			10000	10		

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2				Alternative method:			
								Petrifilm <i>Enterobacteriaceae</i>			
								24h ± 2h at 37°C ± 1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm	cfu/g	log cfu/g
Green beans Batch 1 Aerobic mesophilic flora: <10 CFU/g	<i>Escherichia hermannii</i> Ad1457	1	4544	10	25	250	2,40	10	35	350	2,54
				100	2			100	1		
			4545	10	26	250	2,40	10	25	250	2,40
				100	1			100	1		
			4546	10	25	230	2,36	10	34	340	2,53
				100	0			100	0		
		2	4547	10	24	250	2,40	10	28	280	2,45
				100	3			100	2		
			4548	10	25	240	2,38	10	29	290	2,46
				100	1			100	2		
			4549	100	25	2600	3,41	100	41	4100	3,61
				1000	4			1000	5		
			4550	100	37	3600	3,56	100	52	5200	3,72
				1000	3			1000	5		
			4551	100	39	3800	3,58	100	45	4500	3,65
				1000	3			1000	2		
			4552	100	32	3300	3,52	100	47	4700	3,67
				1000	4			1000	3		
			4553	100	44	4300	3,63	100	48	4800	3,68
				1000	3			1000	3		
		3	4554	1000	64	60000	4,78	1000	80	80000	4,90
				10000	2			10000	1		
			4555	1000	71	71000	4,85	1000	88	88000	4,94
				10000	7			10000	5		
			4556	1000	79	79000	4,90	1000	89	89000	4,95
				10000	8			10000	2		
Green beans Batch 2 Aerobic mesophilic flora: <10 CFU/g	<i>Escherichia hermannii</i> Ad1457	1	4557	1000	68	69000	4,84	1000	75	75000	4,88
				10000	8			10000	4		
			4558	1000	50	51000	4,71	1000	83	83000	4,92
				10000	6			10000	9		
			4559	10	21	240	2,38	10	26	260	2,41
				100	5			100	4		
		2	4560	10	14	150	2,18	10	21	210	2,32
				100	2			100	2		
			4561	10	32	310	2,49	10	22	220	2,34
				100	2			100	3		
			4562	10	19	200	2,30	10	33	330	2,52
				100	3			100	2		
			4563	10	24	240	2,38	10	19	190	2,28
				100	2			100	3		
			4564	100	34	3300	3,52	100	47	4700	3,67
				1000	2			1000	1		
			4565	100	25	2500	3,40	100	43	4300	3,63
				1000	3			1000	5		
			4566	100	28	2900	3,46	100	43	4300	3,63
				1000	4			1000	4		
			4567	100	32	3300	3,52	100	29	2900	3,46
				1000	4			1000	6		
			4568	100	29	2900	3,46	100	41	4100	3,61
				1000	3			1000	3		
		3	4569	1000	52	51000	4,71	1000	75	75000	4,88
				10000	4			10000	10		
			4570	1000	61	62000	4,79	1000	84	84000	4,92
				10000	7			10000	6		
			4571	1000	56	55000	4,74	1000	87	87000	4,94
				10000	5			10000	7		
			4572	1000	63	63000	4,80	1000	90	90000	4,95
				10000	6			10000	15		
			4573	1000	65	64000	4,81	1000	100	100000	5,00
				10000	5			10000	4		

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2				Alternative method:			
								Petrifilm <i>Enterobacteriaceae</i>			
								24h ± 2h at 37°C ± 1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm	cfu/g	log cfu/g
Whole pasteurized liquid egg Batch 1 Aerobic mesophilic flora: 0 CFU/g	<i>Serratia liquefaciens</i> 26	1	6428	10	14	140	2,15	10	23	230	2,36
				100	1			100	2		
			6429	10	15	150	2,18	10	19	190	2,28
				100	1			100	1		
			6430	10	12	110	2,04	10	14	140	2,15
				100	0			100	1		
		2	6431	10	10	91	1,96	10	21	210	2,32
				100	0			100	3		
			6432	10	15	140	2,15	10	16	160	2,20
				100	0			100	1		
			5093	100	27	2700	3,43	100	27	2700	3,43
				1000	3			1000	3		
			5094	100	29	2800	3,45	100	31	3100	3,49
				1000	2			1000	6		
			5095	100	34	3400	3,53	100	36	3600	3,56
				1000	3			1000	4		
		3	5096	100	30	2900	3,46	100	15	1500	3,18
				1000	2			1000	2		
			5097	100	28	3000	3,48	100	37	3700	3,57
				1000	5			1000	6		
			5103	1000	25	28000	4,45	1000	45	45000	4,65
				10000	6			10000	3		
			5104	1000	49	48000	4,68	1000	55	55000	4,74
				10000	4			10000	11		
			5105	1000	40	39000	4,59	1000	33	33000	4,52
				10000	3			10000	2		
Whole pasteurized liquid egg Aerobic mesophilic flora: 0 CFU/g	<i>Serratia liquefaciens</i> 26	1	5106	1000	56	55000	4,74	1000	53	53000	4,72
				10000	4			10000	11		
			5107	1000	64	66000	4,82	1000	73	73000	4,86
				10000	9			10000	18		
			6857	10	23	220	2,34	10	22	220	2,34
				100	1			100	0		
			6858	10	22	230	2,36	10	16	160	2,20
				100	3			100	1		
			6859	10	27	280	2,45	10	15	150	2,18
				100	4			100	1		
		2	6860	10	20	190	2,28	10	22	220	2,34
				100	1			100	4		
			6861	10	21	210	2,32	10	29	290	2,46
				100	2			100	3		
			5118	100	18	1800	3,26	100	47	4700	3,67
				1000	2			1000	3		
			5119	100	17	1500	3,18	100	30	3000	3,48
				1000	0			1000	6		
			5120	100	18	1600	3,20	100	42	4200	3,62
				1000	0			1000	1		
		3	5121	100	27	2700	3,43	100	33	3300	3,52
				1000	3			1000	2		
			5122	100	21	1900	3,28	100	31	3100	3,49
				1000	0			1000	3		
			5128	1000	29	29000	4,46	1000	69	69000	4,84
				10000	3			10000	5		
			5129	1000	29	29000	4,46	1000	63	63000	4,80
				10000	3			10000	5		
			5130	1000	35	34000	4,53	1000	35	35000	4,54
				10000	2			10000	6		
		5131	5131	1000	40	39000	4,59	1000	51	51000	4,71
				10000	3			10000	8		
		5132	5132	1000	25	24000	4,38	1000	49	49000	4,69
				10000	1			10000	8		

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2				Alternative method:			
								Petrifilm <i>Enterobacteriaceae</i>			
								24h ± 2h at 37°C ± 1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm	cfu/g	log cfu/g
Pâté for cat Batch 1 Aerobic mesophilic flora: <10CFU/g	<i>Citrobacter braakii</i> Ad833	1	4758	10	25	230	2,36	10	34	340	2,53
				100	0			100	1		
			4759	10	28	270	2,43	10	40	400	2,60
				100	2			100	3		
			4760	10	22	220	2,34	10	30	300	2,48
				100	2			100	2		
			4761	10	27	270	2,43	10	31	310	2,49
				100	3			100	2		
			4762	10	25	250	2,40	10	33	330	2,52
				100	2			100	2		
		2	4763	100	49	4700	3,67	100	60	6000	3,78
				1000	3			1000	3		
			4764	100	52	5300	3,72	100	57	5700	3,76
				1000	6			1000	7		
			4765	100	58	5900	3,77	100	38	3800	3,58
				1000	7			1000	8		
			4766	100	35	3500	3,54	100	49	4900	3,69
				1000	4			1000	8		
			4767	100	41	4500	3,65	100	56	5600	3,75
				1000	9			1000	10		
		3	4768	1000	74	75000	4,88	1000	112	112000	5,05
				10000	8			10000	9		
			4769	1000	97	95000	4,98	1000	99	99000	5,00
				10000	8			10000	10		
			4770	1000	91	93000	4,97	1000	90	90000	4,95
				10000	11			10000	10		
			4771	1000	84	81000	4,91	1000	94	94000	4,97
				10000	5			10000	10		
			4772	1000	101	100000	5,00	1000	85	85000	4,93
				10000	11			10000	8		
Pâté for cat Aerobic mesophilic flora: <10CFU/g	<i>Citrobacter braakii</i> Ad833	1	4773	10	31	320	2,51	10	24	240	2,38
				100	4			100	1		
			4774	10	19	180	2,26	10	33	330	2,52
				100	1			100	3		
			4775	10	31	310	2,49	10	30	300	2,48
				100	3			100	2		
			4776	10	44	420	2,62	10	34	340	2,53
				100	2			100	1		
			4777	10	36	360	2,56	10	24	240	2,38
				100	4			100	4		
		2	4778	100	41	4000	3,60	100	40	4000	3,60
				1000	3			1000	5		
			4779	100	40	4300	3,63	100	52	5200	3,72
				1000	7			1000	3		
			4780	100	39	3900	3,59	100	44	4400	3,64
				1000	4			1000	1		
			4781	100	46	5000	3,70	100	44	4400	3,64
				1000	9			1000	2		
			4782	100	47	4800	3,68	100	47	4700	3,67
				1000	6			1000	6		
		3	4783	1000	84	88000	4,94	1000	79	79000	4,90
				10000	13			10000	8		
			4784	1000	74	73000	4,86	1000	88	88000	4,94
				10000	6			10000	3		
			4785	1000	110	110000	5,04	1000	111	111000	5,05
				10000	11			10000	10		
			4786	1000	85	83000	4,92	1000	74	74000	4,87
				10000	6			10000	6		
			4787	1000	98	97000	4,99	1000	82	82000	4,91
				10000	9			10000	7		

Matrix	Strain	Level	N°sample	Reference method : ISO 21528-2				Alternative method:			
								Petrifilm <i>Enterobacteriaceae</i>			
								24h ± 2h at 37°C ± 1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm	cfu/g	log cfu/g
Process water (zucchini and split peas) Batch 1 Aerobic mesophilic flora: 0 CFU/g	<i>Escherichia coli</i> 93	1	5183	10	38	360	2,56	10	23	230	2,36
				100	2			100	2		
			5184	10	29	290	2,46	10	18	180	2,26
				100	3			100	2		
			5185	10	33	340	2,53	10	22	220	2,34
				100	4			100	6		
		2	5186	10	35	340	2,53	10	27	270	2,43
				100	2			100	4		
			5187	10	24	240	2,38	10	32	320	2,51
				100	2			100	5		
			5188	100	51	5400	3,73	100	51	5100	3,71
				1000	8			1000	5		
			5189	100	42	4000	3,60	100	42	4200	3,62
				1000	2			1000	3		
			5190	100	83	8000	3,90	100	44	4400	3,64
				1000	5			1000	6		
		3	5191	100	41	3800	3,58	100	40	4000	3,60
				1000	1			1000	4		
			5192	100	44	4300	3,63	100	59	5900	3,77
				1000	3			1000	5		
			5198	1000	88	84000	4,92	1000	81	81000	4,91
				10000	4			10000	2		
			5199	1000	88	89000	4,95	1000	84	84000	4,92
				10000	10			10000	6		
			5200	1000	81	84000	4,92	1000	90	90000	4,95
				10000	11			10000	15		
		1	5201	1000	92	90000	4,95	1000	87	87000	4,94
				10000	7			10000	13		
			5202	1000	81	81000	4,91	1000	89	89000	4,95
				10000	8			10000	9		
Process water (pilchards) Aerobic mesophilic flora: 0 CFU/g	<i>Escherichia coli</i> 93	1	5208	10	16	190	2,28	10	37	370	2,57
				100	5			100	4		
			5209	10	24	230	2,36	10	25	250	2,40
				100	1			100	5		
			5210	10	18	180	2,26	10	35	350	2,54
				100	2			100	3		
		2	5211	10	28	260	2,41	10	22	220	2,34
				100	0			100	8		
			5212	10	33	330	2,52	10	23	230	2,36
				100	3			100	5		
			5213	100	34	3500	3,54	100	51	5100	3,71
				1000	5			1000	4		
		3	5214	100	41	3700	3,57	100	52	5200	3,72
				1000	0			1000	11		
			5215	100	45	4300	3,63	100	59	5900	3,77
				1000	2			1000	3		
			5216	100	42	4000	3,60	100	50	5000	3,70
				1000	2			1000	3		
		2	5217	100	41	4000	3,60	100	44	4400	3,64
				1000	3			1000	5		
			5223	1000	64	68000	4,83	1000	77	77000	4,89
				10000	11			10000	5		
			5224	1000	71	74000	4,87	1000	82	82000	4,91
				10000	10			10000	5		
		3	5225	1000	66	67000	4,83	1000	63	63000	4,80
				10000	8			10000	6		
			5226	1000	90	87000	4,94	1000	77	77000	4,89
				10000	6			10000	4		
			5227	1000	79	76000	4,88	1000	89	89000	4,95
				10000	5			10000	12		

APPENDIX M - Artificial contaminations

Petrifilm™ *Enterobacteriaceae* Count plate (EB)

#	Sample name	Category	Type	Strain			Injury protocol	Mesured stress
				Strain	Code	Origin		
3006063	Guinea fowl aiguillette	Meat product	a	<i>E.coli</i>	JEEV23	Spicy Whole Chicken	Seeding 72h at 3±2°C	/
3006064	Beef Bourguignon	Meat product	b	<i>E.coli</i>	JEEV23	Spicy Whole Chicken	Seeding 72h at 3±2°C	/
3006066	Mayonnaise	Miscellaneous and egg-based products	a	<i>Entero</i>	PAJ947	Egg product environment	Seeding 72h at 3±2°C	/
3006065	Pastry cream	Miscellaneous and egg-based products	c	<i>Entero</i>	PAJ947	Egg product environment	Seeding 72h at 3±2°C	/
3005870	Beef pate	Feed stuff	b	<i>E.coli</i>	EZN508	Chopped steak	Spiking - 5' 56°C	1,0
3005871	Fish jelly	Feed stuff	b	<i>E.coli</i>	EZN508	Chopped steak	Spiking - 5' 56°C	1,0
3005898	Rabbit food	Feed stuff	b	<i>E.coli</i>	EZN508	Chopped steak	Spiking - 5' 56°C	1,0
3005899	Cat food	Feed stuff	b	<i>E.coli</i>	EZN508	Chopped steak	Spiking - 5' 56°C	1,0
3005900	Wheat	Feed stuff	c	<i>E.coli</i>	EZN508	Chopped steak	Spiking - 5' 56°C	1,0
3005901	Soybean meal	Feed stuff	c	<i>E.coli</i>	EZN508	Chopped steak	Spiking - 5' 56°C	1,0
3005902	Corn	Feed stuff	c	<i>E.coli</i>	HMLZ85	Mill environment	Spiking - 5' 56°C	1,0
3006010	Process water 1	Production environmental samples	b	<i>E.coli</i>	FBV114	Environment	Seeding 72h at 3±2°C	/
3006011	Process water 3	Production environmental samples	b	<i>E.coli</i>	FBV114	Environment	Seeding 72h at 3±2°C	/

Appendix N - Relative trueness - raw results

Category	Type	#	Sample	Strain	Injury protocol	Petrifilm™ Enterobacteriaceae Count Plate (EB) - Visual reading 24h ± 2h -30°C					Petrifilm™ Enterobacteriaceae Count Plate (EB) - Automatic reader (PPRA) 24h ± 2h -30°C				
						dil 1	CFU	dil 2	CFU	Result (CFU/g)	dil 1	CFU	dil 2	CFU	Result (CFU/g)
Meat products	a	3005620	Chicken curry	/	/	-4	34	-5	7	3,7E+05	-4	33	-5	5	3,3E+05
	a	3006063	Guinea fowl aiguillette	<i>E.coli</i> <i>JEFY23</i>	Seeding	-2	101	-3	13	1,0E+04	-2	98	-3	13	1,0E+04
	b	3006064	Beef Bourguignon	<i>E.coli</i> <i>UVS777</i>	Seeding	-1	8	-2	1	8,0E+01	-1	8	-2	1	8,0E+01
	b	3005618	Beef	/	/	-3	>150	-4	55	5,5E+05	-3	>150	-4	46	4,6E+05
	b	3005619	Beef Bourguignon	/	/	-2	>150	-3	54	5,4E+04	-2	17	-3	3	1,7E+03
	c	3005617	Merguez	/	/	-2	29	-3	2	2,9E+03	-2	23	-3	3	2,3E+03
Dairy products	a	3005621	Raw cow's milk	/	/	-6	87	-7	6	8,7E+07	-6	82	-7	6	8,2E+07
	a	2986183	Raw cow's milk	/	/	-1	>150	-2	87	8,7E+03	-1	>150	-2	51	5,1E+03
	b	3005848	Morbier cheese	/	/	-6	23	-7	4	2,3E+07	-6	20	-7	3	2,0E+07
	b	3005849	Brie cheese	/	/	-6	91	-7	8	9,1E+07	-6	76	-7	6	7,6E+07
	c	3005850	Crème brûlée	/	/	-3	13	-4	2	1,3E+04	-3	12	-4	2	1,2E+04
	c	3005851	Semolina with milk	/	/	-1	26	-2	4	2,6E+02	-1	25	-2	4	2,5E+02
Seafood	a	2986184	Saithe	/	/	-5	19	-6	1	1,9E+06	-5	14	-6	1	1,4E+06
	a	3005852	Salmon fillet	/	/	-2	>150	-3	18	1,8E+04	-2	>150	-3	11	1,1E+04
	a	3005853	Lieu Noir	/	/	-3	31	-4	3	3,1E+04	-3	27	-4	1	2,7E+04
	b	3005854	Smoked salmon tartar	/	/	-1	32	-2	6	3,2E+02	-1	27	-2	6	2,7E+02
	b	3005855	Natural smoked mackerel	/	/	-2	7	-3	0	7,0E+02	-2	6	-3	3	6,0E+02
	c	3005856	Potatoes with tuna	/	/	-3	4	-4	1	4,0E+03	-3	4	-4	1	4,0E+03
	c	3005857	smoked salmon carpaccio	/	/	-4	>150	-5	30	3,0E+06	-4	>150	-5	29	2,9E+06
Vegetables	a	3005858	Red Beetroot	/	/	-7	>150	-8	22	2,2E+09	-7	107	-8	15	1,1E+09
	b	3005860	Greek-style mushrooms	/	/	-1	31	-2	3	3,1E+02	-1	31	-2	3	3,1E+02
	b	3005861	Cucumber with cream sauce	/	/	-2	10	-3	1	1,0E+03	-2	9	-3	1	9,0E+02
	c	3005792	Cut tomato	/	/	-4	>150	-5	15	1,5E+06	-4	>150	-5	11	1,1E+06
	c	3005862	Gratin of potatoes	/	/	-3	8	-4	1	8,0E+03	-3	7	-4	1	7,0E+03
	c	3005863	Macedonia with mayonnaise	/	/	-1	27	-2	1	2,7E+02	-1	27	-2	1	2,7E+02
Miscellaneous and egg-based products	a	3006066	Mayonnaise	<i>Enterobacter</i> <i>PA1947</i>	Seeding	-1	58	-2	6	5,8E+02	-1	57	-2	6	5,7E+02
	b	3005866	Mille feuille	/	/	-1	22	-2	5	2,2E+02	-1	20	-2	5	2,0E+02
	b	3005867	Paris brest	/	/	-2	15	-3	4	1,7E+03	-2	12	-3	4	1,5E+03
	c	3005869	Egg white	/	/	-1	24	-2	2	2,4E+02	-1	24	-2	2	2,4E+02
	c	3006065	Pastry cream	<i>Enterobacter</i> <i>PA1947</i>	Seeding	-1	>150	-2	19	1,9E+03	-1	>150	-2	19	1,9E+03
Feed stuff	a	3005732	Meat for animals	/	/	-6	38	-7	3	3,8E+07	-6	25	-7	3	2,5E+07
	b	3005870	Beef pate	<i>E.coli</i> <i>EZN508</i>	Spiking 5'-56°C	-3	6	-4	0	6,0E+03	-3	5	-4	0	5,0E+03
	b	3005871	Fish jelly	<i>E.coli</i> <i>EZN508</i>	Spiking 5'-56°C	-2	7	-3	0	7,0E+02	-2	6	-3	0	6,0E+02
	b	3005898	Rabbit food	<i>E.coli</i> <i>EZN508</i>	Spiking 5'-56°C	-6	28	-7	1	2,8E+07	-6	24	-7	1	2,4E+07
	b	3005899	Cat food	<i>E.coli</i> <i>EZN508</i>	Spiking 5'-56°C	-1	30	-2	5	3,2E+02	-1	22	-2	5	2,4E+02
	c	30056672	Corn	/	/	-4	12	-5	2	1,2E+05	-4	11	-5	0	1,1E+05
	c	3005791	Wheat flour	/	/	-3	>150	-4	109	1,1E+06	-3	>150	-4	99	9,9E+05
	c	3005900	Wheat	<i>E.coli</i> <i>EZN508</i>	Spiking 5'-56°C	-4	105	-5	28	1,2E+06	-4	94	-5	22	1,1E+06
	c	3005901	Soybean meal	<i>E.coli</i> <i>EZN508</i>	Spiking 5'-56°C	-1	59	-2	7	6,0E+02	-1	54	-2	7	5,5E+02
	c	3005902	Corn	<i>E.coli</i> <i>HML285</i>	Spiking 5'-56°C	-1	11	-2	3	1,3E+02	-1	11	-2	3	1,3E+02
Production environmental samples	a	3005729	Dairy area sampling	/	/	-1	7	-2	2	7,0E+01	-1	7	-2	2	7,0E+01
	a	3005730	Milling surface sampling	/	/	-2	10	-3	2	1,0E+03	-2	8	-3	2	8,0E+02
	a	3005794	Butcher's surface	/	/	-3	11	-4	0	1,1E+04	-3	11	-4	0	1,1E+04
	a	3005910	Butcher's surface wipe	/	/	-4	79	-5	10	8,1E+05	-4	78	-5	9	7,8E+05
	a	3005911	Dairy surface wipe	/	/	-1	80	-2	3	8,0E+02	-1	79	-2	4	7,9E+02
	b	3006010	Process water 1	<i>E.coli</i> <i>FBV114</i>	Seeding	-3	>150	-4	139	1,4E+06	-3	>150	-4	106	1,1E+06
	b	3006011	Process water 3	<i>E.coli</i> <i>FBV114</i>	Seeding	-2	32	-3	3	3,2E+03	-2	32	-3	3	3,2E+03
	c	2986189	Dairy dust	/	/	-1	35	-2	4	3,5E+02	-1	30	-2	4	3,0E+02
	c	2986190	Egg product dust	/	/	-1	>150	-2	32	3,2E+03	-1	>150	-2	21	2,1E+03

a	3005616	Chicken leg	/	/	-3	1	-4	0	1,0E+03	-3	1	-4	0	1,0E+03
a	2986185	Shrimp	/	/	-1	13	-2	0	1,3E+02	-1	1	-2	0	1,0E+01
c	2986186	Smoked tuna	/	/	-1	15	-2	2	1,5E+02	-1	3	-2	0	3,0E+01
a	3005859	Frozen zucchini	/	/	-3	3	-4	0	3,0E+03	-3	3	-4	0	3,0E+03
a	3005790	Egg mayonnaise with herb salad	/	/	-1	0	-2	0	<10	-1	0	-2	0	<10
a	3005864	Mayonnaise	/	/	-1	0	-2	0	<10	-1	0	-2	0	<10
a	3005865	Industrial mayonnaise	/	/	-1	0	-2	0	<10	-1	0	-2	0	<10
c	3005868	Whole egg	/	/	-3	4	-4	0	4,0E+03	-3	3	-4	0	3,0E+03
b	30056670	Rabbit food	/	/	-1	0	-2	0	<10	-1	0	-2	0	<10
b	30056671	Cat food	/	/	-1	0	-2	0	<10	-1	0	-2	0	<10
b	3005738	Fish pate	/	/	-1	0	-2	0	<10	-1	0	-2	0	<10
c	30056673	Wheat	/	/	-1	0	-2	0	<10	-1	0	-2	0	<10
c	30056674	Soybean meal	/	/	-1	0	-2	0	<10	-1	0	-2	0	<10
b	2986187	Process water- poultry abattoir	/	/	-1	1	-2	0	1,0E+01	-1	2	-2	0	2,0E+01
b	2986188	Dairy rinsing water	/	/	-1	0	-2	0	<10	-1	0	-2	0	<10
a	3005731	Surface sampling of plant preparations	/	/	-1	2	-2	0	2,0E+01	-1	2	-2	0	2,0E+01

Category	Type	#	Matrix	Manual	PPRA	Manual	PPRA	Mean	Difference
				CFU/g	CFU/g	log CFU/g	log CFU/g		
Meat products	a	3005620	Chicken curry	370000	330000	5,57	5,52	5,54	-0,05
	a	3006063	Guinea fowl aiguillette	10000	10000	4,00	4,00	4,00	0,00
	b	3006064	Beef Bourguignon	80	80	1,90	1,90	1,90	0,00
	b	3005618	Beef	550000	460000	5,74	5,66	5,70	-0,08
	b	3005619	Beef Bourguignon	54000	1700	4,73	3,23	3,98	-1,50
	c	3005617	Merguez	2900	2300	3,46	3,36	3,41	-0,10
			Average difference of the category						-0,29
			Standard deviation of differences						0,60
Dairy products	a	3005621	Raw cow's milk	87000000	82000000	7,94	7,91	7,93	-0,03
	a	2986183	Raw cow's milk	8700	5100	3,94	3,71	3,82	-0,23
	b	3005848	Morbier cheese	23000000	20000000	7,36	7,30	7,33	-0,06
	b	3005849	Brie cheese	91000000	76000000	7,96	7,88	7,92	-0,08
	c	3005850	Crème brulée	13000	12000	4,11	4,08	4,10	-0,03
	c	3005851	Semolina with milk	260	250	2,41	2,40	2,41	-0,02
			Average difference of the category						-0,07
		Standard deviation of differences						0,08	
Seafood products	a	2986184	Saithe	1900000	1400000	6,28	6,15	6,21	-0,13
	a	3005852	Salmon fillet	18000	11000	4,26	4,04	4,15	-0,21
	a	3005853	Lieu Noir	31000	27000	4,49	4,43	4,46	-0,06
	b	3005854	Smoked salmon tartar	320	270	2,51	2,43	2,47	-0,07
	b	3005855	Natural smoked mackerel	700	600	2,85	2,78	2,81	-0,07
	c	3005856	Potatoes with tuna	4000	4000	3,60	3,60	3,60	0,00
	c	3005857	smoked salmon carpaccio	3000000	2900000	6,48	6,46	6,47	-0,01
			Average difference of the category						-0,08
		Standard deviation of differences						0,07	
Vegetables	a	3005858	Red Beetroot	2 200 000 000	1 100 000 000	9,34	9,04	9,19	-0,30
	b	3005860	Greek-style mushrooms	310	310	2,49	2,49	2,49	0,00
	b	3005861	Cucumber with cream sauce	1 000	900	3,00	2,95	2,98	-0,05
	c	3005792	Cut tomato	1 500 000	1 100 000	6,18	6,04	6,11	-0,13
	c	3005862	Gratin of potatoes	8 000	7 000	3,90	3,85	3,87	-0,06
	c	3005863	Macedonia with mayonnaise	270	270	2,43	2,43	2,43	0,00
			Average difference of the category						-0,09
		Standard deviation of differences						0,11	
Miscellaneous and egg-based products	a	3006066	Mayonnaise	580	570	2,76	2,76	2,76	-0,01
	b	3005866	Mille feuille	220	200	2,34	2,30	2,32	-0,04
	b	3005867	Paris brest	1700	1500	3,23	3,18	3,20	-0,05
	c	3005869	Egg white	240	240	2,38	2,38	2,38	0,00
	c	3006065	Pastry cream	1900	1900	3,28	3,28	3,28	0,00
			Average difference of the category						-0,03
		Standard deviation of differences						0,03	
Feed stuff	a	3005732	Meat for animals	38000000	25000000	7,58	7,40	7,49	-0,18
	b	3005899	Cat food	320	240	2,51	2,38	2,44	-0,12
	b	3005870	Beef pate	6000	5000	3,78	3,70	3,74	-0,08
	b	3005871	Fish jelly	700	600	2,85	2,78	2,81	-0,07
	b	3005898	Rabbit food	28000000	24000000	7,45	7,38	7,41	-0,07
	c	3005672	Corn	120000	110000	5,08	5,04	5,06	-0,04
	c	3005791	Wheat flour	1100000	990000	6,04	6,00	6,02	-0,05
	c	3005900	Wheat	1200000	1100000	6,08	6,04	6,06	-0,04
	c	3005901	Soybean meal	600	550	2,78	2,74	2,76	-0,04
	c	3005902	Corn	130	130	2,11	2,11	2,11	0,00
			Average difference of the category						-0,07
		Standard deviation of differences						0,05	
Environmental samples	a	3005729	Dairy area sampling	70	70	1,85	1,85	1,85	0,00
	a	3005730	Milling surface sampling	1000	800	3,00	2,90	2,95	-0,10
	a	3005794	Butcher's surface	11000	11000	4,04	4,04	4,04	0,00
	a	3005910	Butcher's surface wipe	810000	780000	5,91	5,89	5,90	-0,02
	a	3005911	Dairy surface wipe	800	790	2,90	2,90	2,90	-0,01
	b	3006010	Process water 1	1400000	1100000	6,15	6,04	6,09	-0,10
	b	3006011	Process water 3	3200	3200	3,51	3,51	3,51	0,00
	c	2986189	Dairy dust	350	300	2,54	2,48	2,51	-0,07
	c	2986190	Egg product dust	3200	2100	3,51	3,32	3,41	-0,18
			Average difference of the category						-0,05
		Standard deviation of differences						0,06	
Average difference all categories									-0,10
Standard deviation of differences									0,22

n = 49
β = 95%
T (0.025;48)= 2,010634758

Lower confidence limit	Upper confidence limit
-0,54	0,35

Results not used in the statistical interpretation

Category	Type	#	Sample	Manual CFU/g	PPRA CFU/g	Manual log CFU/g	PPRA log CFU/g	Mean	Difference
MP	a	3005616	Chicken leg	1,0E+03	1,0E+03	3,00	3,00	3,00	0,00
SFP	a	2986185	Shrimp	1,3E+02	1,0E+01	2,11	1,00	1,56	-1,11
	c	2986186	Smoked tuna	1,5E+02	3,0E+01	2,18	1,48	1,83	-0,70
VP	a	3005859	Frozen zucchini	3,0E+03	3,0E+03	3,48	3,48	3,48	0,00
EP	a	3005790	Egg mayonnaise with herb salad	<10	<10	1,00	1,00	1,00	0,00
	a	3005864	Mayonnaise	<10	<10	1,00	1,00	1,00	0,00
	a	3005865	Industrial mayonnaise	<10	<10	1,00	1,00	1,00	0,00
PF	c	3005868	Whole egg	4,0E+03	3,0E+03	3,60	3,48	3,54	-0,12
	b	30056670	Rabbit food	<10	<10	1,00	1,00	1,00	0,00
	b	30056671	Cat food	<10	<10	1,00	1,00	1,00	0,00
	b	3005738	Fish pate	<10	<10	1,00	1,00	1,00	0,00
	c	30056673	Wheat	<10	<10	1,00	1,00	1,00	0,00
ES	c	30056674	Soybean meal	<10	<10	1,00	1,00	1,00	0,00
	b	2986187	Process water- poultry abattoir	1,0E+01	2,0E+01	1,00	1,30	1,15	0,30
	b	2986188	Dairy rinsing water	<10	<10	1,00	1,00	1,00	0,00
	a	3005731	Surface sampling of plant preparations	2,0E+01	2,0E+01	1,30	1,30	1,30	0,00

ACCURACY PROFIL

Matrix: Fish Terrine

Enumeration of the microorganisms at 37°C - batch 1:<10CFU/g

Enumeration of the microorganisms at 37°C - batch 2:<10 CFU/g

Strain: *Escherichia coli*

Level	Batch	R.	Petrifilm™ Rapid Aerobic Count Plate (EB) -Manual reading 37°C 24h± 2h					Petrifilm™ Rapid Aerobic Count Plate (EB) - Automatic reader (PPRA) - 37°C 24h± 2h				
			dil 1	CFU	dil 2	CFU	Result (CFU/g)	dil 1	CFU	dil 2	CFU	Result (CFU/g)
Level 1	Batch 1	R1	-1	25	-2	2	2,50E+02	-1	25	-2	2	2,50E+02
		R2	-1	24	-2	2	2,40E+02	-1	24	-2	3	2,40E+02
		R3	-1	21	-2	5	2,10E+02	-1	21	-2	5	2,10E+02
		R4	-1	23	-2	1	2,30E+02	-1	23	-2	1	2,30E+02
		R5	-1	20	-2	6	2,00E+02	-1	20	-2	6	2,00E+02
	Batch 2	R1	-1	33	-2	4	3,30E+02	-1	35	-2	4	3,50E+02
		R2	-1	27	-2	1	2,70E+02	-1	27	-2	1	2,70E+02
		R3	-1	32	-2	3	3,20E+02	-1	31	-2	3	3,10E+02
		R4	-1	25	-2	5	2,50E+02	-1	23	-2	5	2,30E+02
		R5	-1	21	-2	1	2,10E+02	-1	21	-2	1	2,10E+02
Level 2	Batch 1	R1	-2	67	-3	8	6,70E+03	-2	68	-3	8	6,80E+03
		R2	-2	88	-3	8	8,80E+03	-2	86	-3	8	8,60E+03
		R3	-2	63	-3	6	6,30E+03	-2	62	-3	6	6,20E+03
		R4	-2	84	-3	13	8,80E+03	-2	84	-3	13	8,80E+03
		R5	-2	83	-3	3	8,30E+03	-2	79	-3	2	7,90E+03
	Batch 2	R1	-2	71	-3	11	7,50E+03	-2	67	-3	11	7,10E+03
		R2	-2	69	-3	7	6,90E+03	-2	73	-3	9	7,30E+03
		R3	-2	93	-3	8	9,30E+03	-2	92	-3	8	9,20E+03
		R4	-2	86	-3	12	8,90E+03	-2	87	-3	13	9,10E+03
		R5	-2	73	-3	5	7,30E+03	-2	76	-3	5	7,60E+03
Level 3	Batch 1	R1	-3	78	-4	13	8,30E+04	-3	77	-4	13	8,20E+04
		R2	-3	81	-4	8	8,10E+04	-3	79	-4	8	7,90E+04
		R3	-3	66	-4	10	6,90E+04	-3	66	-4	10	7,00E+04
		R4	-3	68	-4	6	6,80E+04	-3	68	-4	6	6,80E+04
		R5	-3	85	-4	5	8,50E+04	-3	83	-4	5	8,30E+04
	Batch 2	R1	-3	86	-4	17	9,40E+04	-3	87	-4	17	9,50E+04
		R2	-3	71	-4	8	7,10E+04	-3	69	-4	8	6,90E+04
		R3	-3	82	-4	5	8,20E+04	-3	83	-4	5	8,30E+04
		R4	-3	77	-4	8	7,70E+04	-3	77	-4	8	7,70E+04
		R5	-3	66	-4	12	7,10E+04	-3	65	-4	12	7,00E+04