microsept
VALIDATION & EXPERTISE

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® Staph Express (STX)
versus EN ISO 6888-2
(certificate # 3M 01/09 – 04/03B)
for the enumeration of coagulase positive *Staphylococcus* in a broad range of foods and in pet foods

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This report contains 113 pages and 65 pages of appendices.

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Preamble

- **Protocols of validation:**

- **EN ISO 16140-1 and EN ISO 16140-2/A1 (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:**

- **EN ISO 6888-1: 1999 standard:** Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) – Part 1: Technique using Baird-Parker agar medium.

- **EN ISO 6888-1/A1: 2004:** Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) – Part 1: Technique using Baird-Parker agar medium. Amendment 1

- **EN ISO 6888-1: 2021**: Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) – Part 1: Technique using Baird-Parker agar medium.

- **Application scope:**

- **All human food products** by a validation testing of a broad range of foods, including:
  - meat products,
  - dairy products,
  - seafood products,
  - vegetables,
  - pastries and eggs products,
- **Pet food.**

- **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 the 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.

Table of contents

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: Raw results relative trueness study
Appendix E: Raw data accuracy profiles
Appendix F: Selectivity – Raw results
Appendix G: Inter-laboratories study - Raw results

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

Appendix H: Artificial contamination
Appendix I: Relative trueness study – raw data
Appendix J: Relative trueness study – results and calculations
Appendix K: Accuracy profile study - raw data

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

Appendix L: Artificial contamination
Appendix M: Relative trueness study – raw data
Appendix N: Accuracy profile study - raw data

1. Introduction

This summary report introduces the results of the validation studies for the AFNOR Certification validation of the method NEOGEN® Petrifilm® Staph Express Count system (STX system) for the enumeration of coagulase-positive *staphylococcus* in all food products and pet foods according to the ISO 16140-2: 2016 standard.
The NEOGEN Petrifilm Staph Express Count system (STX system) method is certified NF Validation ISO 16140 under the certification number 3M 01/09-04/03 B.

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

Table 1: Steps of the validation AFNOR certification

Date	Study	Expert Laboratory	Standards
April 2003	Initial validation	IPL Santé Nord	EN ISO 16140:2003
July 2003	Complementary assays were performed by the NEOGEN Company to allow the freezing at -20°C of the Petrifilm STX Plate between 18 hours and 7 days before confirmation with the Petrifilm STX Disk	/	/
2007	First renewal	IPL Santé Nord	EN ISO 16140:2003
2011	Second renewal	IPL Santé Nord	EN ISO 16140:2003
2015	Third renewal	IPL Santé Nord	EN ISO 16140:2003
2019	Fourth renewal	ISHA	EN ISO 16140-2:2016
2023	Fifth renewal	Microsept	EN ISO 16140-2:2016
April 2025	Renewal according to the ISO 16140-2/A1 (2024) extension One Plate approach + extension PPRA	Laboratoire MICROSEPT	EN ISO 16140-2/A1 (2024)

A part of the results presented in this report were produced during the validation tests performed by "IPL Santé Développement Durable Nord" as part of the NF VALIDATION brand according to the current requirements.

The renewal study of 2019 was performed by "ISHA Microbiologie Alimentaire" located at Rennes.

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 Petrifilm Staph Express Count System (STX system) consists of a Petrifilm Staph Express Count Plate (STX plate) and a confirmation by Petrifilm Staph Express Disk (STX disk).

The Petrifilm Staph Express Count Plate is a sample-ready culture medium system which contains a cold-water-soluble gelling agent. The chromogenic modified Baird-Parker medium in the plate is selective and differential for *Staphylococcus aureus*, *Staphylococcus hyicus* and *Staphylococcus intermedius*.

The Petrifilm Staph Express disk for the confirmation contains toluidine blue-O that facilitates the visualization of deoxyribonuclease (DNase) reactions. DNase-positive organisms detected on the Petrifilm Staph Express plate are *S. aureus*, *S. hyicus* and *S. intermedius*. These three microorganisms represent the majority of the group of organisms commonly known as coagulase-positive staphylococci.

2.1.2. Protocols of the method

From an initial suspension realized according to the prescriptions of the ISO 6887 standard, or directly from a liquid sample, decimal dilutions are realized, and NEOGEN Petrifilm Staph Express Count system (STX) is inoculated as described below:

- Place the Petrifilm Staph Express Plate on a flat, level surface,
- Lift the top film and, with the pipette perpendicular, dispense 1 mL of sample suspension or dilution onto the center bottom film,
- Roll the top film down onto the sample to prevent trapping air bubbles,
- Place the plastic spreader with the flat side down on the center of the plate. Press gently on the center of the spreader to distribute the sample evenly. Spread the inoculum over the entire Petrifilm Plate growth area before the gel is formed.
- Remove the spreader and leave the plate undisturbed for at least one minute allowing the gel to form.
- Incubate plates in a horizontal position with the clear side up in stacks of no more than 20 plates. Petrifilm Plates are incubated for 24 ± 2 h at 37 ± 1°C.

After incubation, Petrifilm Staph Express Plates are counted with a standard colony counter or other illuminated magnifier according to colored colonies observations:

- no colonies: the test is complete,
- observation of only red-violet colonies after 24 ± 2 h: count these colonies as *S. aureus*, *S. hyicus* and *S. intermedius*, the test is complete.
- observation of any colored colony except red-violet colonies (for example: black or blue-green): use a Petrifilm Staph Express Disk. Black colonies may be stressed microorganisms.

The Petrifilm Staph Express Count system (STX plate and confirmation disk) is incubated for 3 hours at 37 ± 1°C. Count all pink zones. Pink zones are usually associated with *S. aureus* but may indicate *S. hyicus* or *S. intermedius*. Colonies not associated with a pink zone are not DNase producing staphylococci and should not be counted. If the entire disk area is pink with no distinct zones, large numbers of DNase producing colonies are present. Record the result as too numerous to count (TNC) and dilute the sample further to obtain a more accurate count.
Calculate the number of microorganisms present in the test sample according to ISO 7218 for one plate per dilution.
Counting range is:

- less than or equal to 150 red-violet colonies and/or less than or equal to 300 total colonies
- less than or equal to 150 pink zones. (Note: read the plates after 3 hours of incubation time is complete).

Minimum times of incubation of the alternative method were used in the 2019 renewal study.
The buffered peptone water from OXOID was used in for the 2019 assays.

The workflow of the method is set out in Appendix A.

2.1.3. Scopes of the alternative method

The scope of this method concerns all human food products and pet foods by a validation testing of a broad range of foods, including:

- meat products,
- dairy products,
- seafood products,
- vegetables,
- pastries and eggs products.

2.1.4. Restrictions

There are no restrictions on use for the Petrifilm Staph Express Count System (STX system).

2.2. Reference method

The initial validation in 2003 was performed according to the EN ISO 6888-2: 1999 standard: Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) – Part 1: Technique using rabbit plasma fibrinogen agar.

The renewal studies of 2007, 2011 and 2015, were performed according to the EN ISO 6888-2/A1: 2004: Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) – Part 1: Technique using rabbit plasma fibrinogen agar. Amendment 1: Inclusion of precision data.

The renewal study of 2019 was performed according to the EN ISO 6888-2/A2: 2018: Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) – Part 1: Technique using rabbit plasma fibrinogen agar. Amendment 2: Inclusion of an alternative confirmation.

The workflow of the reference method is presented in Appendix B.

3. Method comparison study initial validation study

The study was conducted on a variety of samples and strains representative of food products. This is not an exhaustive list of the various matrices included in the application scope. For any remark on the alternative method, you can contact AFNOR Certification by connecting to the Internet page ***http://nf-validation.afnor.org/contact-2/***.

3.1. Relative trueness study

3.1.1. Number and nature of the samples

One hundred and fifty-seven (157) samples were analyzed during the validation study of 2003 and 69 were kept for the statistical analysis. Thirty-eight (38) samples were analyzed during the validation study of 2007 and fifteen (15) were kept for the statistical analysis.
Twenty-seven (27) samples were analyzed during the fourth renewal study (2019) and twenty-five (25) were kept for the statistical analysis.
A total of 222 samples were thus analyzed and 111 exploited.
The distribution of the samples is presented in Table 2.

Table 2: number and nature of the samples analyzed

Category		Type	Analyzed samples	Exploited results
Meat products	m1	Raw meat	27	10
	m2	Prepared, seasoned and processed meat, RTE	11	9
	m3	Delicatessen	19	5
	TOTAL		**57**	**24**
Dairy products	d1	Raw milk cheese	18	5
	d2	Raw milk and raw cream	12	7
	d3	Pasteurized milk product and RTHE	21	9
	TOTAL		**51**	**21**
Seafood products	s1	Raw fish	9	5
	s2	Shellfish	6	5
	s3	Processed, RTE, RTRH	19	6
	TOTAL		**34**	**16**
Vegetal products	v1	RTE- seasoned	16	7
	v2	raw cut vegetable	6	5
	v3	transformed vegetable	7	5
	TOTAL		**29**	**17**
Pastries Egg products	eg1	With butter cream	8	6
	eg2	With custard	8	5
	eg3	Egg products	7	5
	TOTAL		**23**	**16**
Petfood	a1	Dry food	13	6
	a2	Raw meat	6	6
	a3	Cat/dog food	9	5
	TOTAL		**28**	**17**
TOTAL			**222**	**111**

3.1.2. Artificial contamination of the samples

For the two renewal studies performed in 2003 and 2007, among the 84 samples that gave interpretable, 12 samples were artificially contaminated. However, there is no available information about the strain and the protocol of contamination used by the "IPL Santé Développement Durable Nord".
For the 2019 assay, 27 samples were artificially contaminated samples using seeding protocols as described in the standard NF EN ISO 16140-2:2016.
Finally, among the 111 interpretable results, 39 correspond to artificially contaminated samples (35.1 %) and 72 to naturally contaminated samples.

The artificial contaminations performed are presented in the Appendix C.

3.1.3. Results

Samples were analyzed by the reference and the alternative method so as to obtain at least 15 interpretable results per category and at least 5 per type.
Raw results are shown in Appendix D.

Table 3 is a summary of all the results obtained.

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

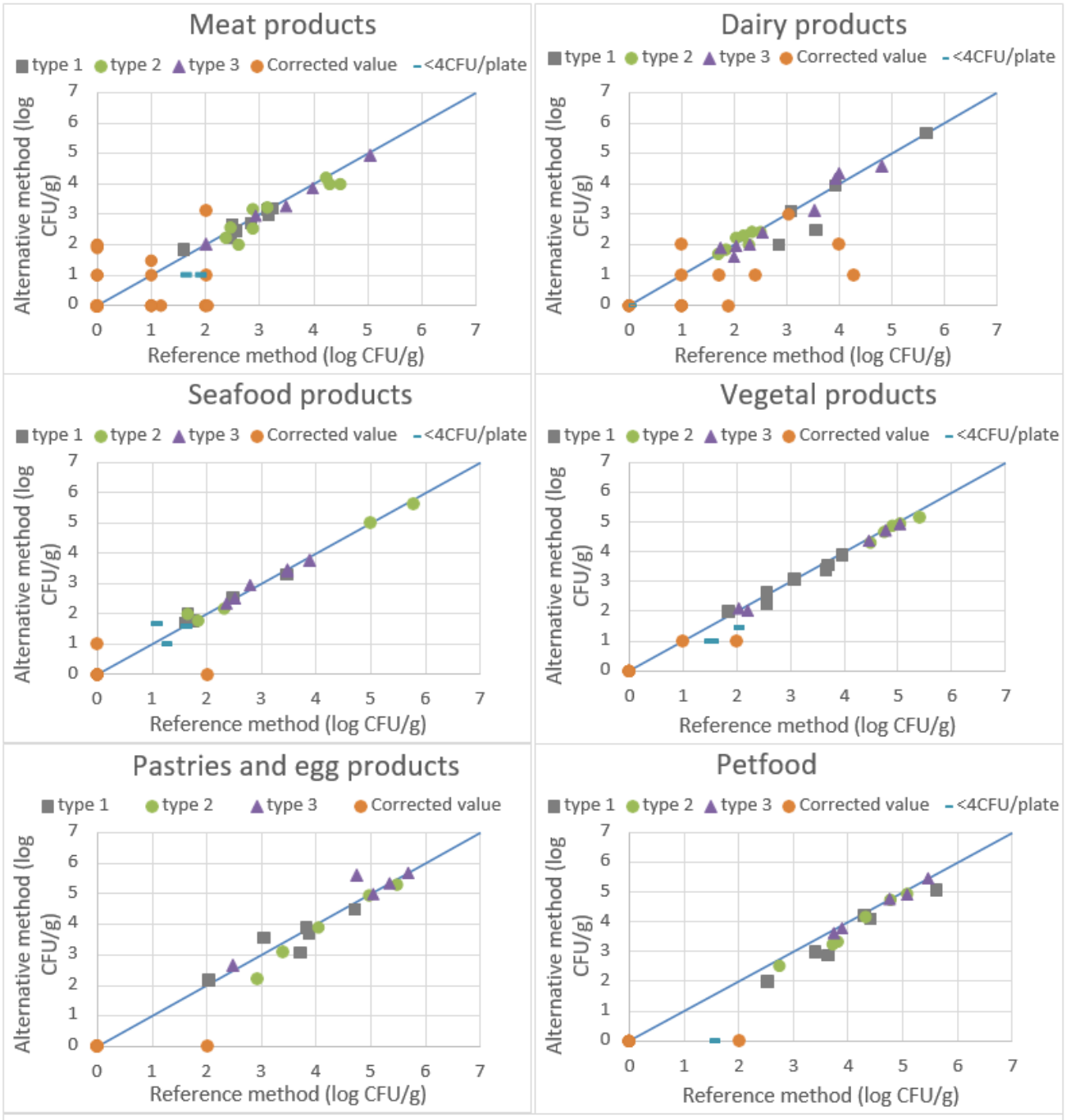
Category	Type	Samples analyzed	Number of samples <4 CFU/plate	Number of samples below or above the detection limit	Number of samples with no results	Interpretable results
Meat products	m1	27	2	13	2	10
	m2	11	0	1	1	9
	m3	19	0	14	0	5
	TOTAL	57	2	28	3	**24**
Dairy products	d1	18	0	4	9	5
	d2	12	1	4	0	7
	d3	21	2	8	2	9
	TOTAL	51	3	16	11	**21**
Seafood products	s1	9	1	2	1	5
	s2	6	0	1	0	5
	s3	19	2	5	6	6
	TOTAL	34	3	8	7	**16**
Vegetal products	v1	16	3	5	1	7
	v2	6	0	1	0	5
	v3	7	0	2	0	5
	TOTAL	29	3	8	1	**17**
Pastries and eggs products	eg1	8	0	2	0	6
	eg2	8	0	2	1	5
	eg3	7	0	2	0	5
	TOTAL	23	0	6	1	**16**
Pet food	a1	13	1	6	0	6
	a2	6	0	0	0	6
	a3	9	2	2	0	5
	TOTAL	28	3	8	0	**17**
TOTAL		**222**	**14**	**74**	**23**	**111**

One sample of the category “vegetal products” (N°3M62) was excluded from the previous validation study because of lack of information. The denomination could not permit to classify samples (cf. Appendix D).

3.1.4. Statistical interpretation

Raw data are shown in Appendix E.
The obtained data were analyzed using the scatter plot. The graphs are provided in the Figures 1, 2, 3 and 4 with the line of identity “y = x”.

Figure 1: scatter plots of reference-method versus alternative-method results for each category and for all categories



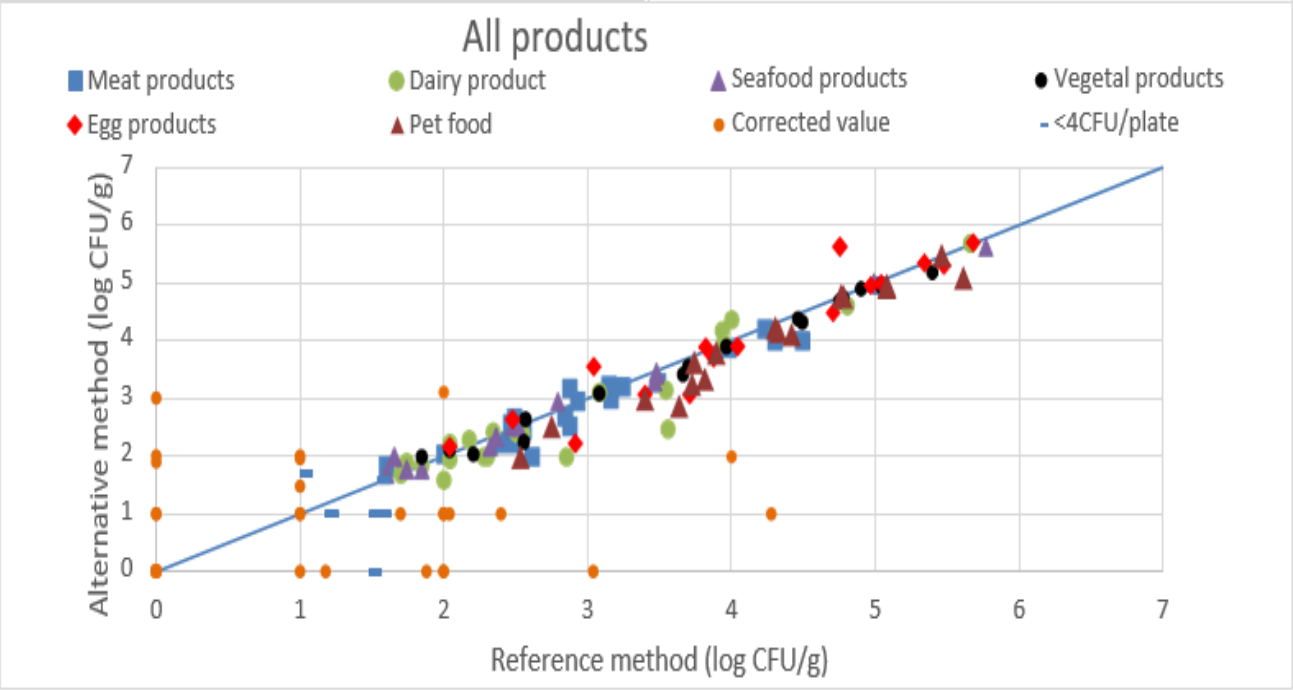
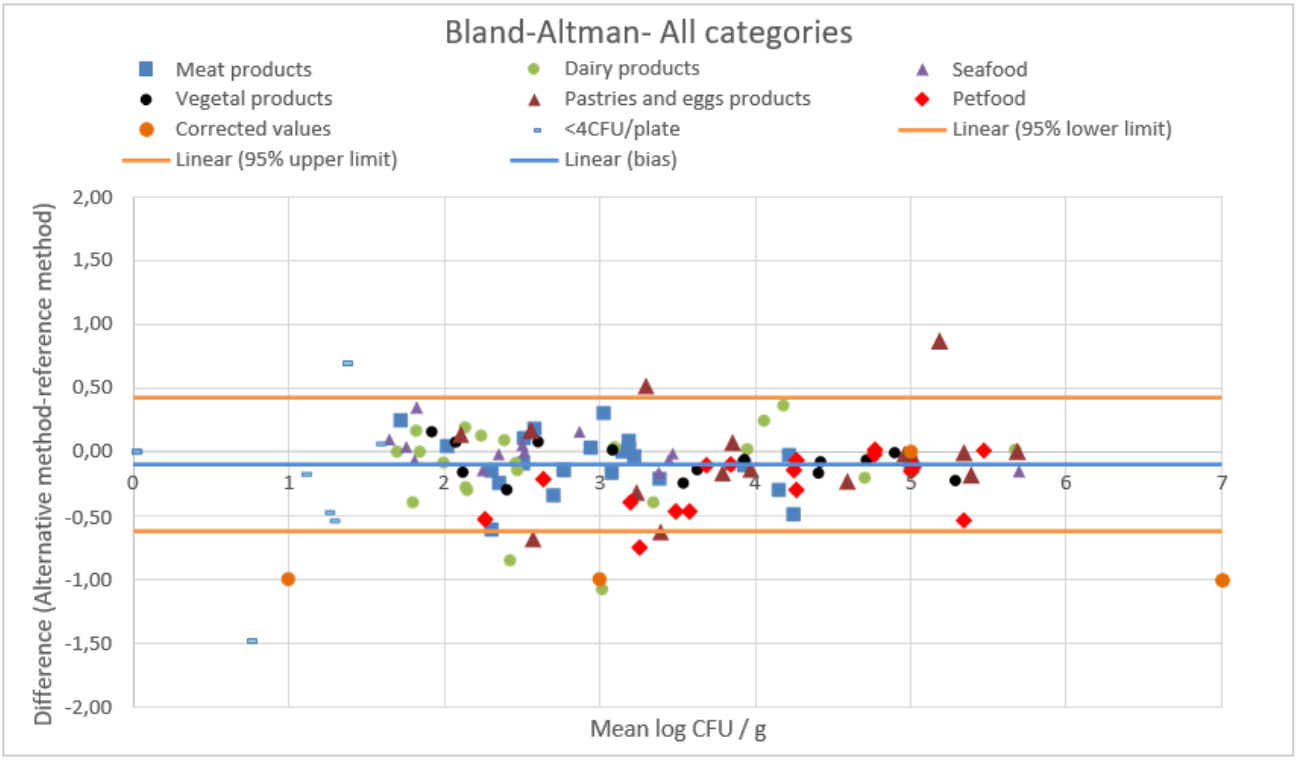


Figure 2: Bland-Altman difference plot for all categories



The calculated values are shown in Table 4 per category.

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

Category	n	D	SD	95% lower limit	95% upper limit
Meat products	24	-0.09	0.22	-0.54	0.36
Dairy products	21	-0.12	0.35	-0.86	0.62
Seafood products	16	0.02	0.16	-0.32	0.36
Vegetal products	17	-0.08	0.12	-0.34	0.18
Pastries and eggs products	16	-0.04	0.38	-0.86	0.78
Petfood	17	-0.26	0.23	-0.76	0.24
All categories	**111**	**-0.09**	**0.26**	**-0.62**	**0.43**

Table 5: Results outside of the upper or the lower limit (AC: artificial contamination; PV: previous validation)

Type of result	Category	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Substitued value		Mean	Difference
						log RM	Log AM	Log RM	Log AM		
Interpreted results	Dairy products	d1	L6	PV	Goat cheese	3.56	2.48	/	/	3.02	-1.08
		d1	L15	PV	Farmer cheese	2.85	2.00	/	/	2.43	-0.85
	Pastries & egg products	eg1	3M19	PV	Eclair coffee	3.04	3.56	/	/	3.30	0.51
		eg2	B12	PV	Chou Parisien	2.91	2.23	/	/	2.57	-0.68
		eg3	STX 17	ISHA 2019	Mayonnaise	4.75	5.62	/	/	5.19	0.88
	Pet food	a1	2007 X2	PV	Pellets for cat	3.63	2.88	/	/	3.26	-0.75
Below or above the detection limit	Meat products	m1	A15	PV	Beef meat	1.00	<1	/	0.00	0.50	-1.00
		m1	A16	PV	Liver poultry	>1 and 2	<1	1.00	0.00	0.50	-1.00
		m1	3M17	PV	Tongue of pork	<1	2.00	0.00	/	1.50	-1.00
		m1	3M22	PV	Tongue of pork	>2 and <3	3.11	2.00	/	2.56	1.11
		m1	3M94	PV	Offals	<3	<1	2.00	0.00	1.00	-2.00
		m1	3M95	PV	Horse steak	<3	<1	2.00	0.00	1.00	-2.00
		m1	L13	PV	Turkey filet	<2	1.48	1.00	/	1.24	1.48
		m1	R14	PV	Meat minced	1.18	<1	/	0.00	0.59	-1.18
		m1	2007 CC3	PV	Turkey cutlet	<1	1.90	0.00	/	0.95	1.90
		m2	3M82	PV	Merguez	<2	<1	1.00	0.00	0.50	-1.00
		m3	3M23	PV	Pork belly	<2	1.95	1.00	/	1.48	0.95
		m3	3M40	PV	Raw ham	<1	<2	0.00	1.00	0.50	1.00
		m3	3M61	PV	Bacon	<1	<1	0.00	0.00	0.50	-1.00
		m3	3M81	PV	Sausage	<1	<1	0.00	0.00	2.05	1.30
		m3	A4	PV	Ham	2.04	>1 and <2	/	1.00	1.52	-1.04
		m3	3M93	PV	Ham	<3	<2	2.00	1.00	1.50	-1.00
	Dairy products	d1	3M21	PV	Munster	4.28	<2	/	1.00	2.64	-3.28
		d1	3M31	PV	Morbier	<2	<1	1.00	0.00	0.50	-1.00
		d2	L10	PV	Raw milk	2.40	>1 and<2	/	1.00	1.70	-1.40
		d2	2007 B2	PV	Raw milk	1.00	<1	/	0.00	0.50	-1.00
		d3	E7	PV	Mimolette	1.70	<2	/	1.00	1.35	-0.70
		d3	E8	PV	Raclette	1.88	<1	/	0.00	0.94	-1.88
		d3	E9	PV	Gouda	>1 and <2	<1	1.00	0.00	0.50	-1.00
		d3	3M20	PV	Gorgonzola	<2	<1	1.00	0.00	0.50	-1.00
		d3	3M30	PV	Sheep cheese	4.00	>2 and <3	/	2.00	3.00	-2.00
		d3	3M36	PV	Goat cheese	<2	2.00	1.00	/	1.50	1.00

Type of result	Category	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Substitued value		Mean	Difference
						log RM	Log AM	Log RM	Log AM		
Below or above the detection limit	Seafood products	s2	R9	PV	Shrimps	<1	<2	0.00	1.00	0.50	1.00
		s3	3M32	PV	Filet of sole	<3	<1	2.00	0.00	1.00	-2.00
	Vegetable	v3	3M29	PV	Powder of cocoa	<3	<2	2.00	1.00	1.50	-1.00
	Pastries & egg products	eg1	3M07	PV	Pastry	<3	<1	2.00	0.00	1.00	-2.00
	Petfood	a3	2007 B1	PV	Dry sausage animals	<3	<1	2.00	0.00	1.00	-2.00
<4 CFU/plate	Meat products	m1	M11	PV	Pork filet	1.81	1.00	/	/	1.41	-0.81
	Seafood	s3	3M51	PV	Salad of shrimp	1.00	1.70	/	/	1.35	0.70
	Petfood	a1	2007 X3	PV	Flour for fish	1.48	<1	/	0.00	0.74	-1.48

Six upon 111 interpretable results are outside the upper or the lower limit. Four of them are below the lower 95 % confidence limit (difference between -0.68 and –1.08 log CFU/g) while two of them are above the upper 95 % confidence limit (difference between 0.51 and 0.88 log CFU/g).

For the samples not included on the statistical interpretation (results below or above the detection limit and results <4 CFU/plate), 34 results are outside the upper or lower limit. Twenty-five samples are below the lower 95 % confidence limit (difference between -0.70 to -3.28 log CFU/g) while 9 samples are above the upper 95 % confidence limit (difference between 0.95 to 1.88 log CFU/g).

3.1.5. Conclusion

The relative trueness of the alternative method is satisfactory.

3.2. Accuracy profile study

3.2.1. Protocols

Six matrix – strain pairs were tested by both methods. Two batches of a matrix, representative of each category, were inoculated by a coagulase-positive *Staphylococcus* strain at three levels of inoculation (low, medium and high). For each sample, 5 replicates, represented by 5 different test portions, were tested by each method. This represents a total of 30 analyses per method.

The matrix – strain pairs are presented in Table 6.

Table 6: matrix – strain pairs tested for the accuracy profile study

Category	Matrix	Code	Strain	Origin of the strain	Contamination level
Meat product	Ground beef	STA.1.28	*Staphylococcus aureus*	Turkey meat	
Dairy products	Raw milk cheese	STA.1.25	*Staphylococcus aureus*	Saint-Mathurin with raw milk	100 CFU/g
Seafood products	Whiting fillet	STA.1.24	*Staphylococcus aureus*	Shrimp	
Vegetal products	Grated carrot	STA.1.26	*Staphylococcus aureus*	Paella rice	5000 CFU/g
Pastries and egg products	Pasteurized whole egg	STA.1.8	*Staphylococcus aureus*	Biscuit factory	100 000 CFU/g
Pet food	Dog terrine	STA.1.29	*Staphylococcus aureus*	Turkey carcass	

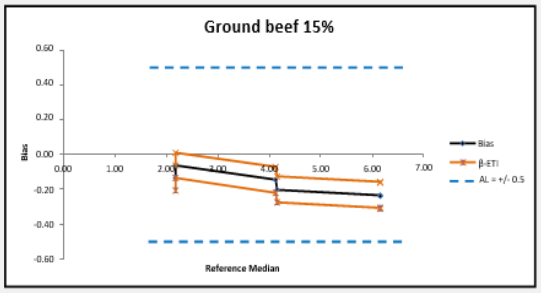
3.2.2. Results and interpretation

Raw data are provided in Appendix E.
The statistical data and the accuracy profiles are shown in Figures 3.
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 all the categories, the probability for the tolerance interval β is set at 80% and the acceptability limits at 0.5.

Figure 3: accuracy profiles

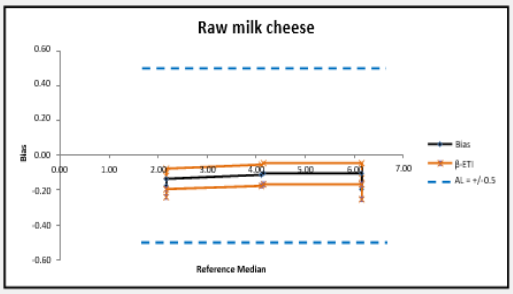
(Food) Category	Meat products
(Food) Type	Ground beef 15%



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
L1T1	2.18	-0.135	-0.208	-0.061	YES	YES
L2T1	2.18	-0.082	-0.136	0.011	YES	YES
L1T2	4.11	-0.145	-0.219	-0.072	YES	YES
L2T2	4.15	-0.202	-0.275	-0.128	YES	YES
L1T3	6.15	-0.232	-0.306	-0.159	YES	YES
L2T3	6.15	-0.236	-0.311	-0.164	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.034	0.051	YES	+/- 0.500

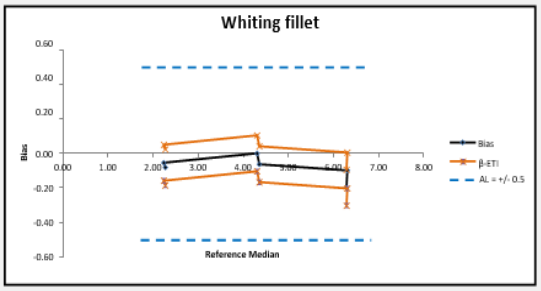
(Food) Category	Dairy products
(Food) Type	Raw milk cheese



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
L1T1	2.18	-0.176	-0.237	-0.115	YES	YES
L2T1	2.18	-0.135	-0.195	-0.074	YES	YES
L1T2	4.11	-0.114	-0.175	-0.053	YES	YES
L2T2	4.15	-0.105	-0.165	-0.044	YES	YES
L1T3	6.15	-0.105	-0.165	-0.044	YES	YES
L2T3	6.15	-0.192	-0.253	-0.131	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.034	0.042	YES	+/- 0.500

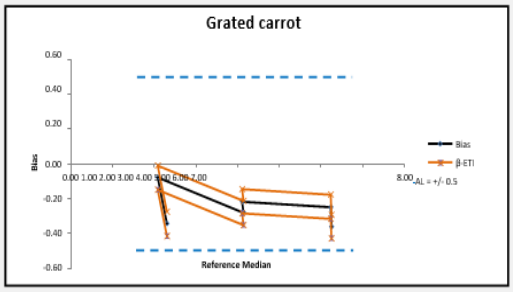
(Food) Category	Seafood products
(Food) Type	Whiting fillet



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
L1T1	2.26	-0.079	-0.183	0.025	YES	YES
L2T1	2.23	-0.054	-0.158	0.050	YES	YES
L1T2	4.30	0.000	-0.104	0.104	YES	YES
L2T2	4.34	-0.064	-0.168	0.040	YES	YES
L1T3	6.30	-0.097	-0.201	0.007	YES	YES
L2T3	6.28	-0.200	-0.304	-0.096	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.047	0.072	YES	+/- 0.500

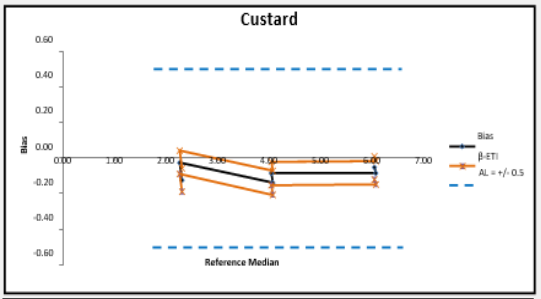
(Food) Category	Vegetal products
(Food) Type	grated carrot



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
L1T1	2.30	-0.347	-0.416	-0.277	YES	YES
L2T1	2.08	-0.079	-0.148	-0.010	YES	YES
L1T2	4.15	-0.283	-0.352	-0.214	YES	YES
L2T2	4.11	-0.216	-0.286	-0.147	YES	YES
L1T3	6.23	-0.248	-0.317	-0.179	YES	YES
L2T3	6.26	-0.363	-0.432	-0.294	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.057	0.048	YES	+/- 0.500

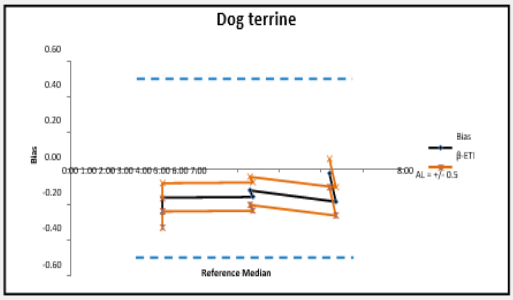
(Food) Category	Eggs products
(Food) Type	Custard



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
L1T1	2.30	-0.125	-0.191	-0.059	YES	YES
L2T1	2.26	-0.025	-0.091	0.042	YES	YES
L1T2	4.08	-0.140	-0.206	-0.073	YES	YES
L2T2	4.04	-0.087	-0.154	-0.021	YES	YES
L1T3	6.08	-0.084	-0.150	-0.017	YES	YES
L2T3	6.04	-0.055	-0.121	0.012	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.036	0.046	YES	+/- 0.500

(Food) Category	Pet food
(Food) Type	Dog terrine



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
L1T1	2.20	-0.250	-0.329	-0.170	YES	YES
L2T1	2.20	-0.163	-0.242	-0.083	YES	YES
L1T2	4.36	-0.158	-0.237	-0.078	YES	YES
L2T2	4.30	-0.125	-0.204	-0.046	YES	YES
L1T3	6.36	-0.186	-0.265	-0.106	YES	YES
L2T3	6.20	-0.028	-0.107	0.051	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.046	0.055	YES	+/- 0.500

For the accuracy profiles of all the categories, with β at 80% and AL at 0.5, the upper limits of the β-expectation tolerance interval (β-ETI) are inferior to the positive acceptability limit of 0.5 and the lower limits of the β-ETI are superior to the negative acceptability limit of -0.5.

3.2.3. Conclusion

The accuracy profiles are satisfactory in the range of contamination tested.

3.3. Inclusivity / Exclusivity study

3.3.1. Protocols

Fifty (50) positive strains and thirty-one (31) negative strains were tested in duplicate by the alternative method.

The 15 strains of the 2019 inclusivity study and the 5 strains of the 2019 exclusivity study were tested with the alternative method, the reference method, and a non-selective agar.

3.3.2. Results

Results are listed in Appendix F.

All 43 *Staphylococcus aureus* tested strains gave red-violet colonies. After disk insertion, all colonies were surrounded with a pink zone.

The 7 other coagulase-positive strains of staphylococci, *Staphylococcus hyicus* and *Staphylococcus intermedius*, presented typical aspect as *Staphylococcus aureus* : the colonies were red-violet or dark, and after revelation with STX disk, the colonies were surrounded with a pink zone.

Other 18 staphylococci tested strains, which are not coagulase-positive strains, and 13 strains of other genus did not give any culture or typical colonies (no red-violet color, no pink zone after disk insertion).

Inclusivity and exclusivity are satisfactory. NEOGEN Petrifilm Staph Express enumeration system permitted to detect all coagulase-positive staphylococci inoculated strains. All colonies had a typical aspect after incubation and after revelation with STX disk.

3.3.3. Conclusion

The inclusivity and the exclusivity of the alternative method are satisfactory.

3.4. Practicability

Practicability is assessed according to criteria which are defined by the AFNOR Technical Committee. The NEOGEN Petrifilm Staph Express system is compared to the reference method NF ISO 6888-1/A1 in terms of 13 criteria.

Criteria	Communication on the criteria
1. Packaging 2. Reagents volumes	In **sealed pouches**. Petrifilm tests: packages of 2 x 25 units or 20 x 25 units. Disks: packages of 1 x 20 units or 5 x 20 units.
3. Storage conditions – Expiration date of unopened tests	Store unopened Petrifilm plates and disks pouches refrigerated or frozen at **temperature less than or equal to 8°C**. Expiration date is noted on each package of Petrifilm plates and disks. (Period of validity of 18 months after the plant leaving).
4.Utilization procedure after first utilization	**Petrifilm**: Return unused plates to pouch. Seal by folding the end of the pouch over and taping shut. To prevent exposure to moisture, do not refrigerate opened pouches. Store resealed pouches **in a cool dry place for no longer than one month.** Petrifilm Staph Express **disks** are individually packaged within a foil pouch. They are sensitive to both moisture and light. Remove only those individually packaged disks that will be used immediately; store remaining disks in the foil pouch by folding the end of the pouch and taping it shut. Place the resealed disk pouch in a sealable container and store **in a freezer for no longer than six months.** These informations are indicated in the NEOGEN Petrifilm Staph Express Count System instructions.
5.Specific necessary equipment and premises	Usual configuration and equipment of a microbiological laboratory. Nothing specific except the **Petrifilm Flat Spreader** available at 3M. Easier reading with magnifying glass utilization.
6.Ready for use reagents or to restore	The Petrifilm system is **ready for use**.
7. Duration of training for a non initiated operator	For a laboratory technician fully formed too standard microbiological techniques, technique training requires **less than one day**.
8. Real time handling and technique flexibility in comparison with number of samples to analyze	**Saving of time** of 8 minutes maximum per positive sample in comparison with standard method which needs tests of confirmation (coagulase activity of 20 colonies at the most). The time of handling is the same for a great or a small series of samples.
9. Response lead time	Result is obtained in **24 hours (D1**) whatever the test response: presence or not of coagulase-positive *Staphylococci* in the sample. The analysis of 1 sample according to standard EN ISO 6888-1 gives a result: - after 48 hrs (D2) for a sample which doesn't give any characteristic or not characteristic colony on Baird-Parker agar medium - after 96 hrs (D4) for a sample with confirmations
10. Operator qualification type	The user must be trained to good laboratory practices (indicated in the STX instructions).
11. Joint stages with standard method	Initial suspension preparation, grinding and dilutions.
12. Analysis results tracability	**Batch number** is noted on each package of STX Petrifilm system. The batch number is also noted on individual plates and on the individual disk packages.
13. Laboratory maintenance	No particular service.

4. Interlaboratory study

4.1. Organization of the study

The interlaboratory study has been realized in 2007. The samples were sent to 13 collaborators.
The collaborators received 8 samples of pasteurized milk to perform the analysis with the reference method ISO 6888-2 and with the alternative method Petrifilm STX.
The strain used for the contamination of the samples was a *Staphylococcus aureus* strain isolated from a dairy product.

4.2. Control of the experimental parameters

4.2.1. Contamination levels obtained after artificial contamination

The four contamination levels are presented in Table 7.

Table 7: contamination levels

Level	Sample	Targeted level (CFU/mL)	Real level (CFU/mL)
Level 0	1 and 8	0	0
Level 1	2 and 7	100	81
Level 2	3 and 6	1 000	810
Level 3	4 and 5	10 000	8100

4.2.2. Strain stability

In order to evaluate the *Staphylococcus aureus* strain variability during transport, bacterial count of inoculated flasks at level 2, has been checked at different time, during storage at 7°C.

Results in CFU/mL are reported in Table 8.

Table 8: determination of the strain stability (CFU/mL)

	J0	J1	J2
Sample 1	1400	1500	2000
Sample 2	1500	1400	1900
Sample 3	1900	2000	1700

No evolution of the strain has been observed after 48 h of storage at 7°C.

4.2.3. Problems of temperature and reception times

The temperatures during transport have been registered and checked in order to verify their stability.
All temperature probes showed a temperature between 0°C and 8°C.
Measured temperatures on receipt are listed in Table 9.

Table 9: temperature recordings

Laboratory	Receipt Temperatures (°C)		Comments
	Measured by the laboratory	Temperature probe record	
A	6.5	1.9	/
B	5.0	2.4	/
C	1.2	2.4	/
D	3.0	0.4	/
E	1.7	0.0	/
F	4.0	4.5	/
G	9.4	7.9	Receipt at D+2
H	5.0	4.9	/
I	12.3	4.4	/
J	/	3.0	/
K	3.7	3.5	/
L	1.5	1.9	/
M	0.7	1.4	/

4.2.4. Conclusion

The laboratory G received the samples at D+2, the day when the labs had to carry out the analyses. The temperature checking showed that, for his package, the temperature stayed below 8°C.
The laboratory I announced a temperature higher than 8°C, but the temperature probe showed a temperature of 4.4°C on receipt.
The conditions of temperature for these two labs were within the correct range, so their results were exploited.

For the laboratory M, the temperature curve during the storage after receipt and before performing the analysis was above the correct range: temperature upper than 8°C. So, the results of laboratory M were not exploited.

Finally, according to temperature conditions, the results of 12 laboratories have been included to the statistical interpretations.

4.3. Results

4.3.1. Expert laboratory

Results obtained by the expert laboratory with EN ISO 6888-2 method (ISO 6888-2:1999 and ISO 6888- 2/A1:2004) and Petrifilm Staph Express system are presented in the Table 10.

Table 10: expert laboratory results (CFU/mL)

	EN ISO 6888-2		Petrifilm STX system	
	Duplicate 1	**Duplicate 2**	**Duplicate 1**	**Duplicate 2**
Level 0	<10	<10	<10	<10
Level 1	95	30	40	40
Level 2	650	620	370	600
Level 3	6700	6700	6100	6200

Results according to standard EN ISO 6888-2 and alternative method were in agreement.

4.3.2. Collaborative laboratories

Results of the 12 laboratories which realized the analysis are presented in the Table 11 below.

*Table 11: collaborative laboratory results in CFU/mL (Lab: laboratory, RM: reference method, AM: alternative method, D: duplicate, *: problem of protocol)*

Lab	**Level 0**				**Level 1**				**Level 2**				**Level 3**			
	RM		**AM**		**RM**		**AM**		**RM**		**AM**		**RM**		**AM**	
	D1	**D2**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**
A	<10	<10	<10	<10	70	55	80	100	780	870	590	720	8800	10000	7900	4600
B	<10	<10	<10	<10	110	65	40	90	580	680	500	620	8100	7200	5500	4800
C	<10	<10	<10	<10	85	90	40	90	1000	1000	580	710	16000	14000	9700	7600
D	<10	<10	<10	<10	75	75	70	90	1000	1000	780	830	11000	11000	8500	10000
E	<10	<10	<10	<10	80	70	40	40	840	810	560	680	7900	6900	5500	5800
F	<10	<10	<10	<10	55	60	70	60	990	860	670	710	8500	9600	4100	6300
G	<10	<10	<10	<10	85	65	30	40	930	720	630	670	7900	8600	6500	7500
H	<10	<10	<10	<10	100	ni	80	60	ni	880	920	860	ni	30000	8500	8900
I	<10	<10	<10	<10	110	95	80	170	900	970	600	860	9200	11000	11000	10000
J	<10	<10	<10	<10	100	91	110	70	720	900	520	540	9000	11000	5200	5100
K	<10	<10	<10	<10	110	100	50	50	890	1100	680	620	8500	8000	6300	7100
L	<10	<10	<10	<10	90	118	90	60	950	1000	680	740	10000	10000	8400	7500
M	<10	<10	<10	<10	ni	ni	<10	60	ni	ni	740	600	ni	ni	8300	8600

4.3.3. Conclusion

For the laboratory M, the results are presented but were not taken into account because of temperature problems during storage of the samples. In addition, this laboratory encountered problems using the standard method. But their results obtained with the alternative method were correct.

The laboratory H encountered problem for the interpretation of the dishes due to the interfering flora with the standard method. No result has been taken into account for this lab.

Therefore, results of 11 laboratories have been statistically exploited.

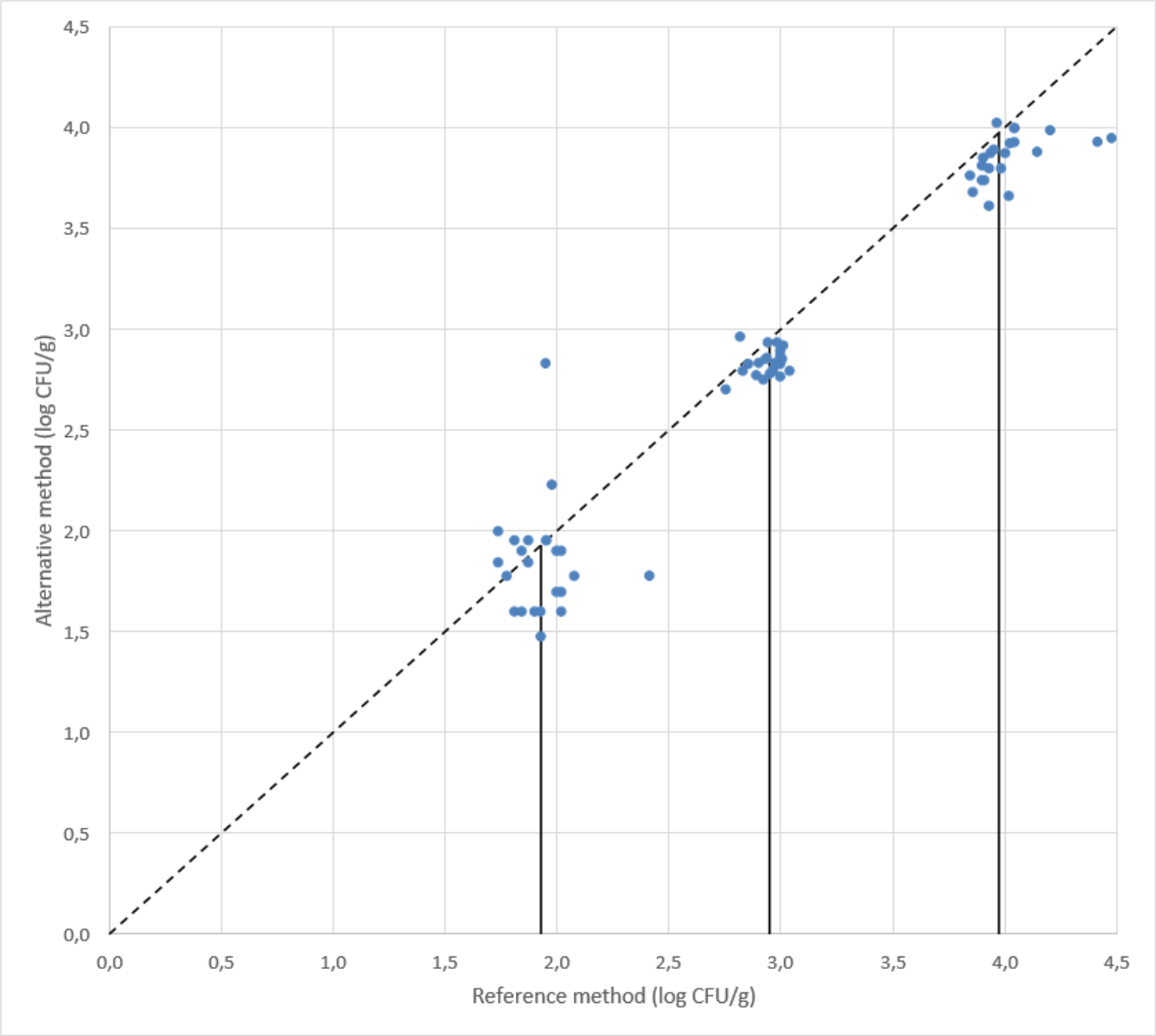
4.4. Calculation and interpretation

4.4.1. Visual control of the linearity

A two-dimensional graph is shown in Figure 4 to check visually the linearity of the alternative method.

The y-axis is reserved for the alternative method and the x- axis for the reference method. The representation of a line of equation “y = x“ figures dashed on the graphs.
Data are expressed in log CFU/g.

Figure 4: two-dimensional graph from the data of the interlaboratory study (dotted line: first bisecting line; vertical lines: medians of the measurements obtained with the reference method for each level)



4.4.2. Accuracy profil calculation

Statistical calculations were done according to the Excel spreadsheet named AP calculation tool_ILS_(clause_6-2-3_Calculations_summary_and_interpretation_of_data)_ver14-03-2016.xlsx available at http://standards.iso.org/iso/16140.

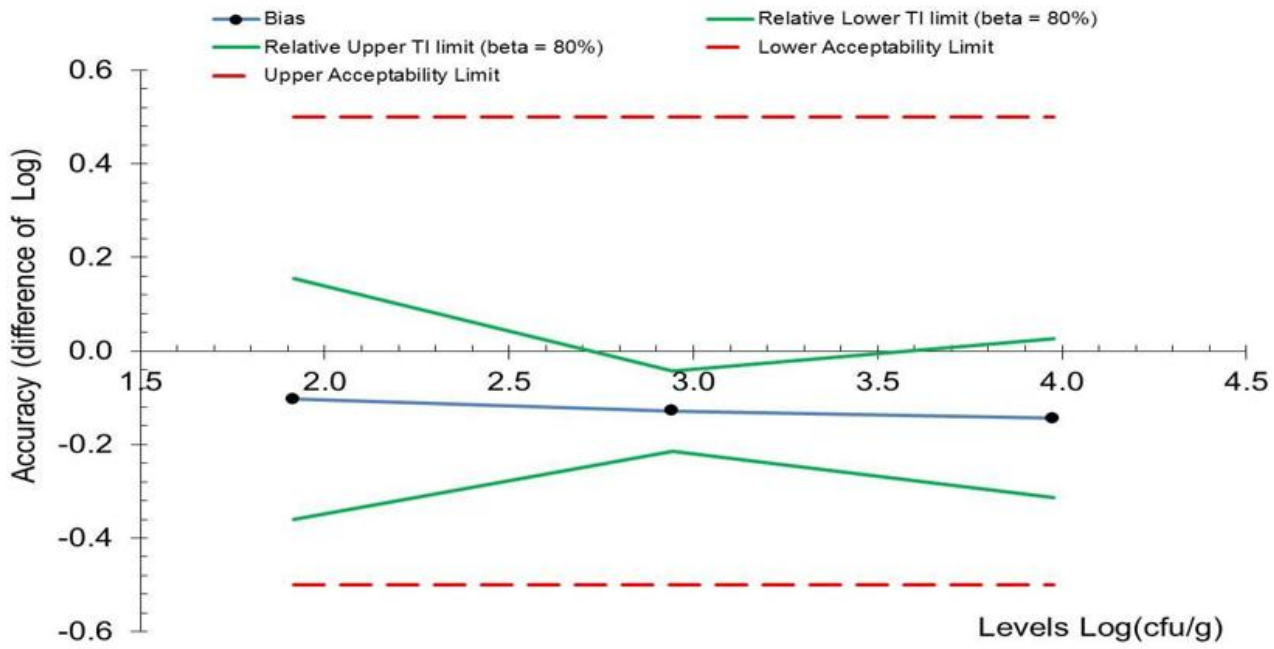
A summary of the parameters calculated is presented in the Table 12.

Table 12: results of the collaborators

Accuracy profile	0.5		
Study Name	Petrifilm Staph Express vs 6888-2		
Date Coordinator			
Tolerance probability (beta)	80%	80%	80%
Acceptability limit in log (lambda)	0.50	0.50	0.50
Levels	**Alternative method Low**	**Medium**	**High**
Target value	**1.915**	**2.943**	**3.975**
Number of participants (K)	11	11	11
Average for alternative method	1.812	2.814	3.832
Repeatability standard deviation (sr)	0.146	0.053	0.074
Between-labs standard deviation (sL)	0.118	0.034	0.097
Reproducibility standard deviation (sR)	0.187	0.063	0.122
Corrected number of dof	17.524	18.766	14.338
Coverage factor	1.373	1.367	1.393
Interpolated Student t	1.332	1.328	1.344
Tolerance interval standard deviation	0.1934	0.0645	0.1269
Lower TI limit	1.555	2.729	3.661
Upper TI limit	2.070	2.900	4.002
Bias	**-0.103**	**-0.128**	**-0.144**
Relative Lower TI limit (beta = 80%)	**-0.360**	**-0.214**	**-0.314**
Relative Upper TI limit (beta = 80%)	**0.155**	**-0.043**	**0.027**
Lower Acceptability Limit	**-0.50**	**-0.50**	**-0.50**
Upper Acceptability Limit	**0.50**	**0.50**	**0.50**

The graphical representation of the accuracy profile is in Figure 5.

Figure 5: two-dimensional graph from the data of the interlaboratory study



For all levels, the tolerance interval limits of the alternative method are within the acceptability limits of 0.5 log CFU/g.

4.5. Conclusion of the interlaboratory study

As the values for the β-ETI fall within the Acceptability Limits for all levels of contamination, the alternative method is regarded as being equivalent to the reference method.

5. General conclusion of the validation study

5.1. Method comparison study

The relative trueness of the alternative method is satisfactory.

The accuracy profiles are within the acceptability limits for the 6 matrix / strain couples in the range of contamination usually observed for the enumeration of coagulase positive *Staphylococcus*.

The specificity of the alternative method is satisfactory.

5.2. Interlaboratory study

The results fulfill the requirements of the standard EN ISO 16140-2:2016.
For the three contamination levels, the results of the alternative method are considered as equivalent to the results of 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, six food categories were tested.
A total of 222 samples were thus analyzed and 111 were exploited.

The distribution of the samples is presented in Table 13.

Table 13: number and nature of the samples analyzed

Category	Type		Analyzed samples	Exploited results
Meat products	m1	Raw meat	27	10
	m2	Prepared, seasoned and processed meat, RTE	11	9
	m3	Delicatessen	19	5
	TOTAL		**57**	**24**
Dairy products	d1	Raw milk cheese	18	5
	d2	Raw milk and raw cream	12	7
	d3	Pasteurized milk product and RTHE	21	9
	TOTAL		**51**	**21**
Seafood products	s1	Raw fish	9	5
	s2	Shellfish	6	5
	s3	Processed, RTE, RTRH	19	6
	TOTAL		**34**	**16**
Vegetal products	v1	RTE- seasoned	16	7
	v2	raw cut vegetable	6	5
	v3	transformed vegetable	7	5
	TOTAL		**29**	**17**
Pastries Egg products	eg1	With butter cream	8	6
	eg2	With custard	8	5
	eg3	Egg products	7	5
	TOTAL		**23**	**16**
Petfood	a1	Dry food	13	6
	a2	Raw meat	6	6
	a3	Cat/doog food	9	5
	TOTAL		**28**	**17**
TOTAL			**222**	**111**

6.1.2. Artificial contamination of the samples

For the two renewal studies performed in 2003 and 2007, among the 84 samples that gave interpretable results, 12 samples were artificially contaminated. However, there is no available information about the strain and the protocol of contamination used by the “IPL Santé Développement Durable Nord”.

For the 2019 assay, 27 samples were artificially contaminated samples using seeding protocols as described in the ISO 16140-2:2016 standard.

Finally, among the 111 interpretable results, 39 correspond to artificially contaminated samples (35.1 %) and 72 to naturally contaminated samples.

The artificial contaminations performed are presented in Appendix C.

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 D.
The samples, which were not used in the calculations, are provided in Table 14.

Table 14: samples which were not used in the calculations

Category	Type	#	Sample	ISO CFU/g	MA CFU/g
Meat products	a	M11	Pork filet	1,67	1,00
	a	A5	Chicken cutlet	1,44	1,00
	a	A15	Beef meat	1,00	1,00
	a	A16	Liver poultry	2,00	1,00
	a	3M06	Pork kidneys	1,00	1,00
	a	3M17	Tongue of pork	1,00	2,00
	a	3M22	Tongue of pork	3,00	3,11
	a	3M80	Meat minced	1,00	1,00
	a	3M94	Offals	3,00	1,00
	a	3M95	Horse steak	3,00	1,00
	a	L12	Quail wings	1,00	1,00
	a	L13	Turkey filet	2,00	1,48
	a	R1	Ground beef	1,00	1,00
	a	R14	Meat minced	1,18	1,00
	a	R25	Veal cutlet	0,00	2,48
	a	R26	Veal cutlet	0,00	2,20
	a	2007 CC3	Turkey cutlet	1,00	1,90
	b	3M82	Merguez	2,00	1,00
	b	L14	Smoked sausage	0,00	4,58
	c	M2	Sausage	1,00	1,00
	c	A1	Cooked andouillette	1,00	1,00
	c	A4	Ham	2,06	2,00
	c	A11	Sausage garlic	1,00	1,00
	c	B10	Herbal sausage	1,00	1,00
	c	3M23	Porl belly	2,00	1,95
	c	3M40	Raw ham	1,00	2,00
	c	3M53	Smoked bacon	1,00	1,00
	c	3M54	Chorizo	1,00	1,00
	c	3M60	Bacon	1,00	1,00
	c	3M61	Bacon	1,00	1,00
	c	3M81	Sausage	1,00	1,00
	c	3M93	Ham	3,00	2,00
	c	L11	Ham	2,00	1,00
Dairy products	a	A3	Munster	0,00	0,00
	a	3M01	Reblochon	2,70	0,00
	a	3M02	Reblochon	0,00	0,00
	a	3M03	Reblochon	3,08	0,00
	a	3M04	Reblochon	0,00	0,00
	a	3M12	Munster	0,00	0,00
	a	3M21	Munster	4,38	2,00
	a	3M24	Reblochon	0,00	3,28
	a	3M25	Reblochon	0,00	3,36
	a	3M26	Reblochon	0,00	2,30
	a	3M31	Morbier	2,00	1,00
	a	L7	Farmer goat cheese	2,15	2,00
	a	L16	St Nectaire farmer (CA)	3,04	2,00
	b	M3	Raw milk	1,00	1,00
	b	L1	Raw milk	1,63	1,00
	b	L10	Raw milk	2,40	2,00
	b	2007 B2	Raw milk	1,00	1,00
	b	2007C1	Raw milk	1,00	1,00
	c	A10	Vanilla frozen yoghurt	1,97	1,48
	c	E7	Momolette	1,70	2,00
	c	E8	Raclette	1,78	1,00
	c	E9	Gouda	2,00	1,00
	c	3M20	Gorgonzola	2,00	1,00
	c	3M30	Sheep cheese	4,03	3,00
	c	3M36	Goat cheese	2,00	2,00
	c	R20	Goat milk	0,00	2,53
	c	R21	Goat milk	0,00	1,78
	c	2007 B3	Epoisses	1,00	1,00
	c	2007 B4	Cheese St Priest	1,00	1,00
	c	2007 Y3	Strawberry ice (CA)	1,78	1,30

Category	Type	#	Sample	ISO CFU/g	MA CFU/g
Seafood products	a	M6	Filet of sole	0,00	1,30
	a	2007 AA6	Filet of hake	1,00	1,00
	a	2007 CC2	Filet of cod	1,00	1,00
	a	2007 A1	Filet of fish: "empereur"	1,51	1,60
	b	R9	Shrimps	1,00	2,00
	c	A13	Salad with surimi	3,00	0,00
	c	C14	Sardine	0,00	0,00
	c	C15	Smoked salmon	0,00	2,95
	c	C17	Salmon with dill	0,00	2,00
	c	C19	Pre-baked salmon	1,24	1,00
	c	C21	Assiette marine	0,00	0,00
	c	3M05	Surimi	1,00	1,00
	c	3M18	Shrimp and surimi	1,74	1,00
	c	3M32	Filet of sole	3,00	1,00
	c	3M44	Smoked salmon	1,00	1,00
	c	3M51	Saled of shrimp	1,30	1,70
	c	3M52	Terrine of langoustine	0,00	1,00
	c	2007AA4	Mix of shrimps	1,00	1,00
Vegetables	a	A12	Mixed salad	1,00	1,00
	a	A14	Mixed salad (white cabbage, ham)	2,04	1,48
	a	3M14	Mixed salad (Potato, ham, tomato)	1,00	1,00
	a	3M37	Miwed salad (rice, peppers,	0,00	1,00
	a	R5	Mixed salad (potato, tuna)	1,00	1,00
	a	R6	Mixed vegetables	1,00	1,00
	a	R7	Mixed salad (grapped	1,00	1,00
	a	R15	Tabbouleh	1,30	1,00
	a	2007 A2	Pastas salad	1,30	1,00
	b	3M16	Cabbage	2,00	2,00
	c	3M08	Vegetables for couscous	1,00	1,00
	c	3M29	Powder of cocoa	2,00	2,00
Egg products	a	3M07	Pastry	3,00	1,00
	a	3M13	Pastry	1,00	1,00
	b	B3	Carré à la crème	0,00	4,04
	b	3M11	Toffee cream	1,00	1,00
	b	2007 CC1	Flan cake	1,00	1,00
	c	3M09	Egg flow	0,00	0,00
	c	3M10	Egg flow	0,00	0,00
Pet food	a	2007 C2	Pellets for animals	1,00	1,00
	a	2007 BB3	Pellets for animals	1,00	1,00
	a	2007 BB4	Pellets for animals	1,00	1,00
	a	2007 AA1	Pellets for dog	1,00	1,00
	a	2007 AA2	Pellets for cat	1,00	1,00
	a	2007 AA3	Pellets for cat	1,00	1,00
	a	2007 X3	Flour for fish (CA)	1,35	1,00
	c	2007 B1	Dry sausage for animals	3,00	1,00
	c	2007 AA4	Meat terrine for animals	1,00	1,00
	c	2007 Y1	Lamb and vegetables terrine (CA)	1,54	1,00
	c	2007 Y2	Lamb and vegetables terrine (CA)	2,06	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.

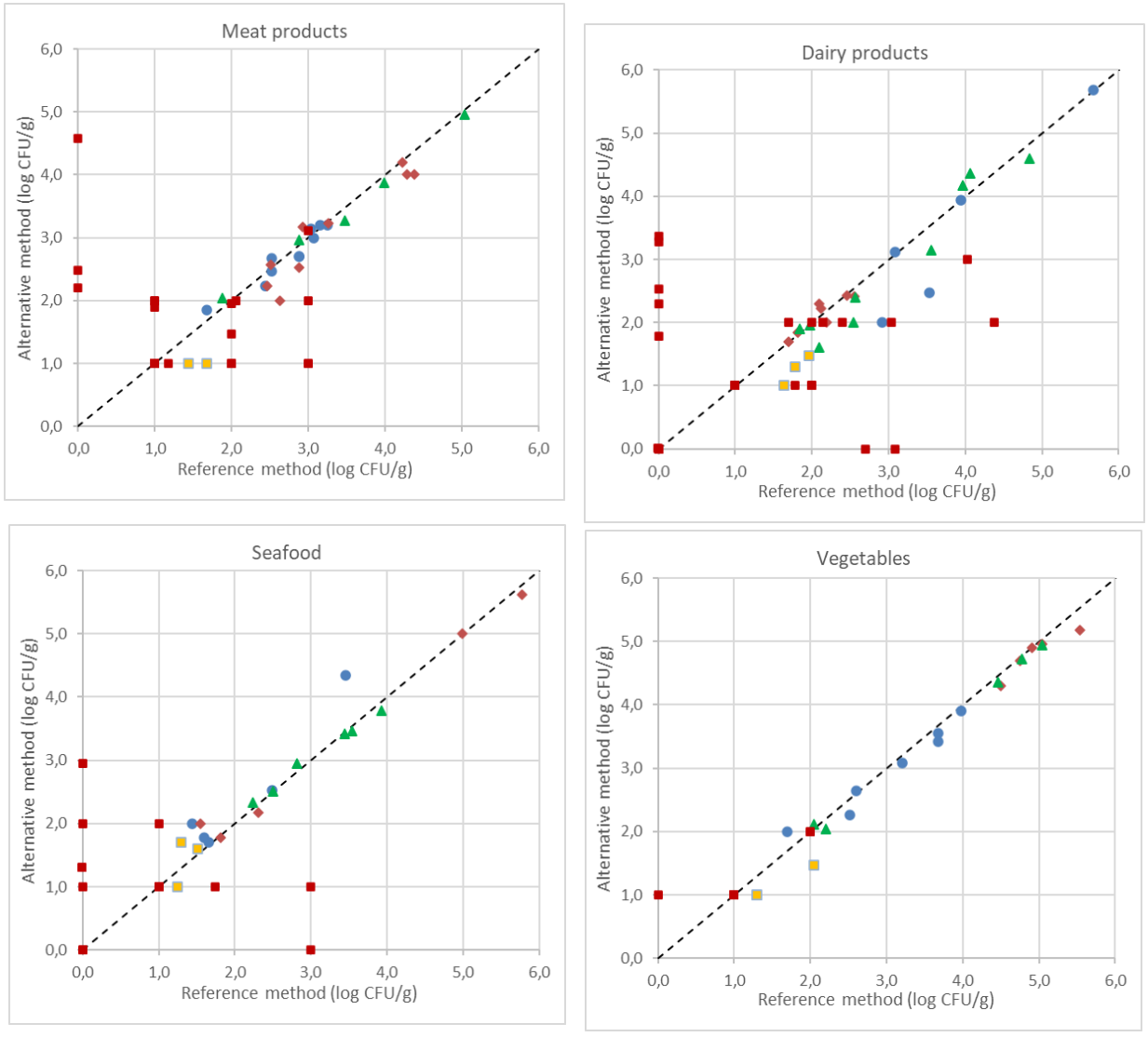
All results are presented in scatter plots per category:

- Figure 6: scatter plots for each category,
- Figure 7: 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 6: scatter plots of reference-method versus alternative-method results for each category



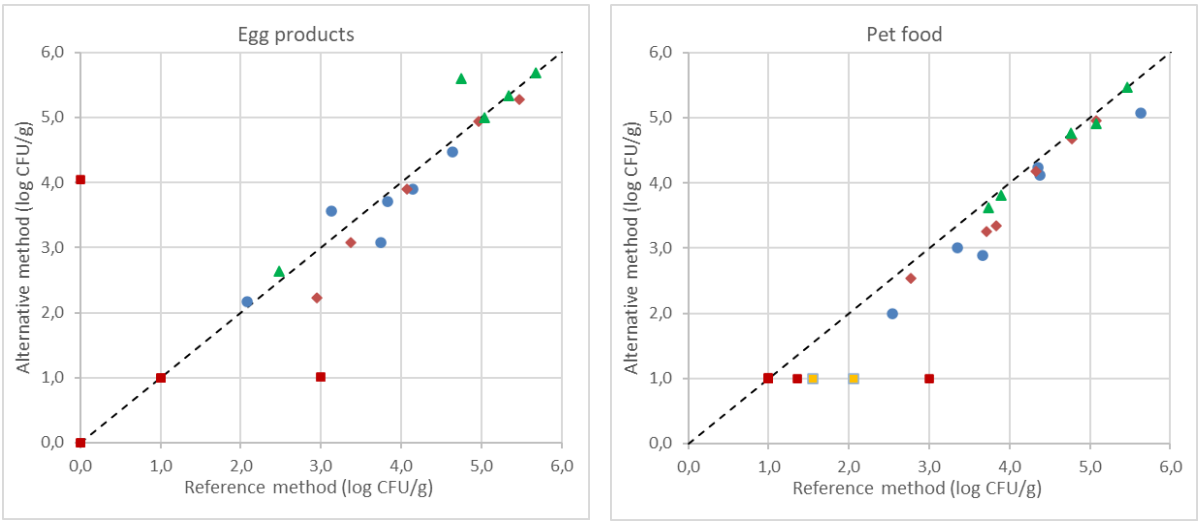
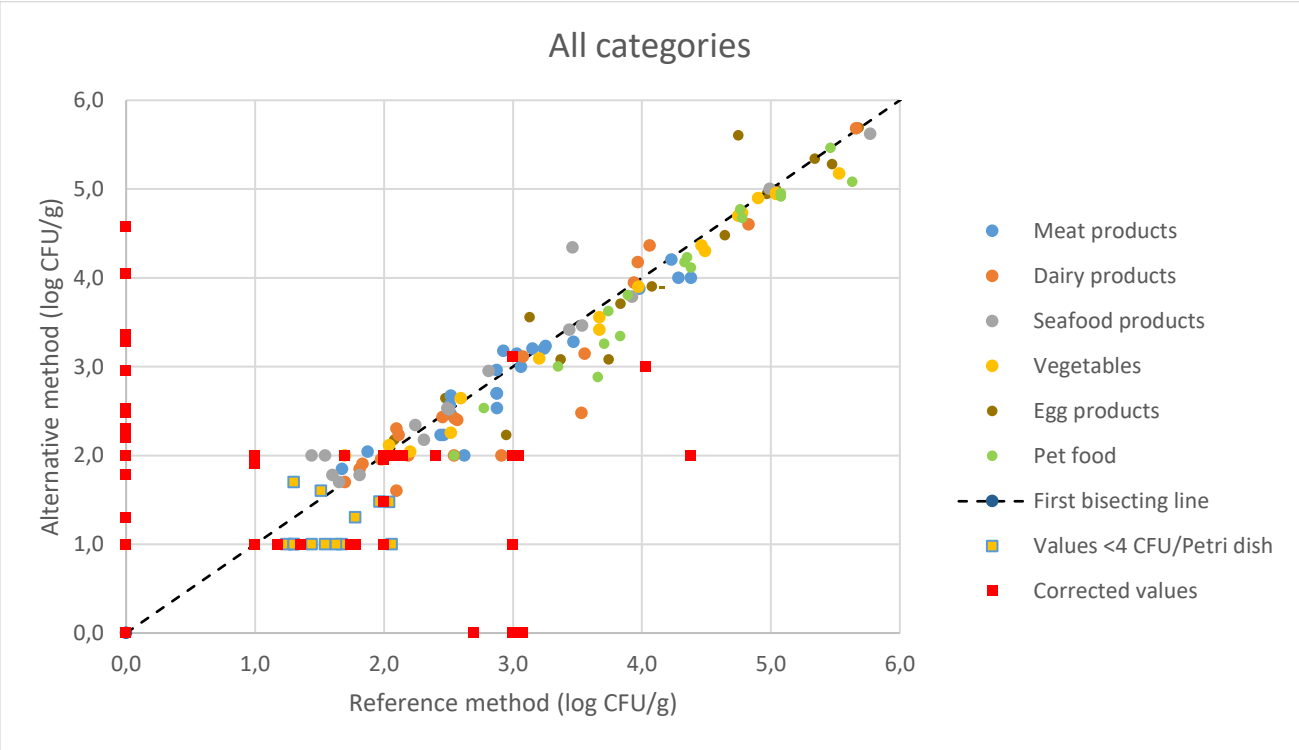


Figure 7: scatter plots of reference-method versus alternative-method results for all categories



6.1.4. Statistical interpretation

The results obtained are analyzed using the Bland-Altman method.
Statistical calculations are presented in Appendix E, as well as the results excluded from the statistical analysis per category.
Table 15 presents the summary of the average differences and standard deviation differences per category and for all categories.

Table 15: values for the Bland-Altman difference plot

Category	n	Standard deviation differences	Bias	Lower Confidence Limit	Upper Confidence Limit
Meat products	24	0.20	-0.08	-0.51	0.35
Dairy products	21	0.35	-0.15	-0.91	0.60
Seafood products	16	0.28	0.12	-0.51	0.74
Vegetal products	17	0.15	-0.09	-0.41	0.24
Pastries and egg products	16	0.37	-0.07	-0.89	0.75
Pet food	17	0.22	-0.27	-0.76	0.22
All cat.	**111**	**0.29**	**-0.09**	**-0.67**	**0.48**

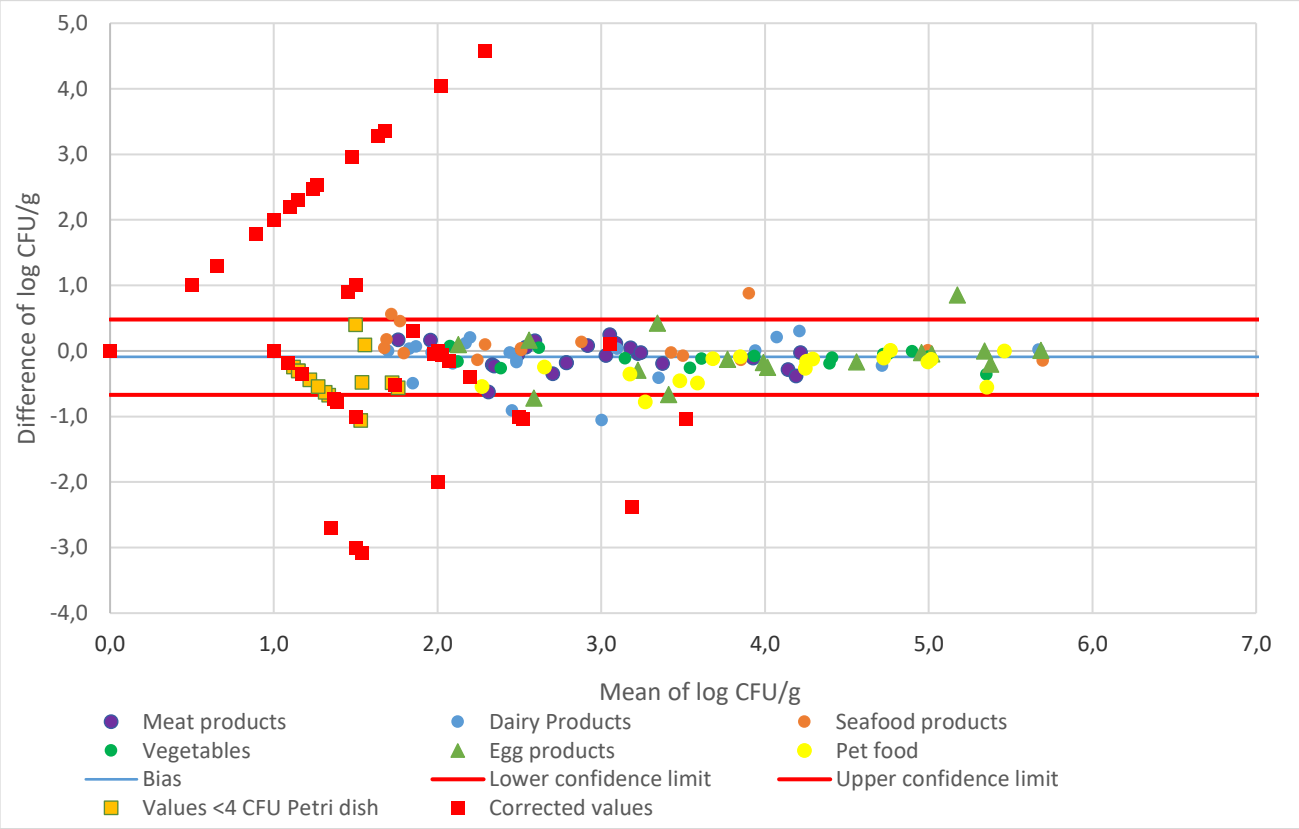
Overall, the average deviation is equal to -0.09, showing a non-significant negative bias between the NEOGEN Petrifilm STX System method and the reference method. The average difference varies from -0.27 log CFU/g (pet food) to 0.12 CFU/g (seafood products).
The upper and lower limits of the 95% confidence interval range from 0.48 to -0.67.

The Bland-Altman difference plots are presented in Figure 8 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 8: 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 16.

Table 16: values outside the confidence limits on the Bland-Altman difference plot

Category	Type	#	Matrix	ISO	Alternative	Mean	Difference
				log CFU/g	log CFU/g		
Meat products	a	M11	Pork filet	1,67	1,00	1,34	-0,67
	a	A16	Liver poultry	2,00	1,00	1,50	-1,00
	a	3M17	Tongue of pork	1,00	2,00	1,50	1,00
	a	3M94	Offals	3,00	1,00	2,00	-2,00
	a	3M95	Horse steak	3,00	1,00	2,00	-2,00
	a	R25	Veal cutlet	0,00	2,48	1,24	2,48
	a	R26	Veal cutlet	0,00	2,20	1,10	2,20
	a	2007 CC3	Turkey cutlet	1,00	1,90	1,45	0,90
	b	3M82	Merguez	2,00	1,00	1,50	-1,00
	b	L14	Smoked sausage	0,00	4,58	2,29	4,58
	c	3M40	Raw ham	1,00	2,00	1,50	1,00
	c	3M93	Ham	3,00	2,00	2,50	-1,00
	c	L11	Ham	2,00	1,00	1,50	-1,00
Dairy products	a	L6	Farmer goat cheese	3,53	2,48	3,00	-1,05
	a	L15	Farmer cheese	2,91	2,00	2,46	-0,91
	a	3M01	Reblochon	2,70	0,00	1,35	-2,70
	a	3M03	Reblochon	3,08	0,00	1,54	-3,08
	a	3M21	Munster	4,38	2,00	3,19	-2,38
	a	3M24	Reblochon	0,00	3,28	1,64	3,28
	a	3M25	Reblochon	0,00	3,36	1,68	3,36
	a	3M26	Reblochon	0,00	2,30	1,15	2,30
	a	3M31	Morbier	2,00	1,00	1,50	-1,00
	a	L16	St Nectaire farmer (CA)	3,04	2,00	2,52	-1,04
	c	E8	Raclette	1,78	1,00	1,39	-0,78
	c	E9	Gouda	2,00	1,00	1,50	-1,00
	c	3M20	Gorgonzola	2,00	1,00	1,50	-1,00
	c	3M30	Sheep cheese	4,03	3,00	3,52	-1,03
	c	R20	Goat milk	0,00	2,53	1,27	2,53
	c	R21	Goat milk	0,00	1,78	0,89	1,78
Seafood products	a	D8	Filet of trout	1,44	2,00	1,72	0,56
	a	STX 5 (◊)	Whiting filet (CA)	3,46	4,34	3,90	0,88
	a	M6	Filet of sole	0,00	1,30	0,65	1,30
	b	R9	Shrimps	1,00	2,00	1,50	1,00
	c	A13	Salad with surimi	3,00	0,00	1,50	-3,00
	c	C15	Smoked salmon	0,00	2,95	1,48	2,95
	c	C17	Salmon with dill	0,00	2,00	1,00	2,00
	c	3M18	Shrimp and surimi	1,74	1,00	1,37	-0,74
	c	3M32	Filet of sole	3,00	1,00	2,00	-2,00
	c	3M51	Saled of shrimp	1,30	1,70	1,50	0,40
	c	3M52	Terrine of langoustine	0,00	1,00	0,50	1,00
Vegetal products	a	3M37	Miwed salad (rice, peppers,	0,00	1,00	0,50	1,00
	c	2007 B1	Dry sausage for animals	3,00	1,00	2,00	-2,00
	c	2007 Y2	Lamb and vegetables terrine (CA)	2,06	1,00	1,53	-1,06
Pastries & egg products	b	B12	Chou Parisien vanille	2,95	2,23	2,59	-0,72
	c	STX 17 (◊)	Mayonnaise (CA)	4,75	5,60	5,18	0,85
	a	3M07	Pastry	3,00	1,00	2,00	-2,00
	b	B3	Carré à la crème	0,00	4,04	2,02	4,04
Feed	a	2007 X2	Pellets for cat (CA)	3,66	2,88	3,27	-0,78

Green cells: values <4 CFU/Petri dish. Yellow cells: values lower and higher than the quantification limits, green: values higher than the confidence limits. Red: values lower than the quantification limits).

Forty-eight samples are out of the confidence limits:

- 41 concern corrected values or samples with less than 4 CFU/Petri dish,
- 26 are lower than the lower confidence limit,
- 22 are higher than the upper confidence limit.

Finally, seven upon 111 interpretable results are outside the upper or the lower limit.

6.1.5. Conclusion

The relative trueness study of the alternative method is satisfying for all categories tested for the NEOGEN Petrifilm® Staph Express Count system method.

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

Table 17: summary Petrifilm one plate versus initial validation

	Petrifilm StaphExpress system							Petrifilm StaphExpress system				
	Category	n	SD	Bias	LCL	UCL		n	SD	Bias	LCL	UCL
One Plate	Meat products	24	0.20	-0.08	-0.51	0.35	Two Plates	24	0.22	-0.09	-0.54	0.36
	Dairy products	21	0.35	-0.15	-0.91	0.60		21	0.35	-0.12	-0.86	0.62
	Seafood products	16	0.28	0.12	-0.51	0.74		16	0.16	0.02	-0.32	0.36
	Vegetal products	17	0.15	-0.09	-0.41	0.24		17	0.12	-0.08	-0.34	0.18
	Pastries & egg products	16	0.37	-0.07	-0.89	0.75		16	0.38	-0.04	-0.86	0.78
	Pet food	17	0.22	-0.27	-0.76	0.22		17	0.23	-0.26	-0.76	0.24
	All cat.	**111**	**0.29**	**-0.09**	**-0.67**	**0.48**		**111**	**0.26**	**-0.09**	**-0.62**	**0.43**

6.2. Accuracy profiles

6.2.1. Protocols

Six matrix – strain pairs were tested by both methods. Two batches of a matrix, representative of each category, were inoculated by a coagulase-positive Staphylococcus strain at three levels of inoculation (low, medium and high). For each sample, 5 replicates, represented by 5 different test portions, were tested by each method. This represents a total of 30 analyses per method.

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

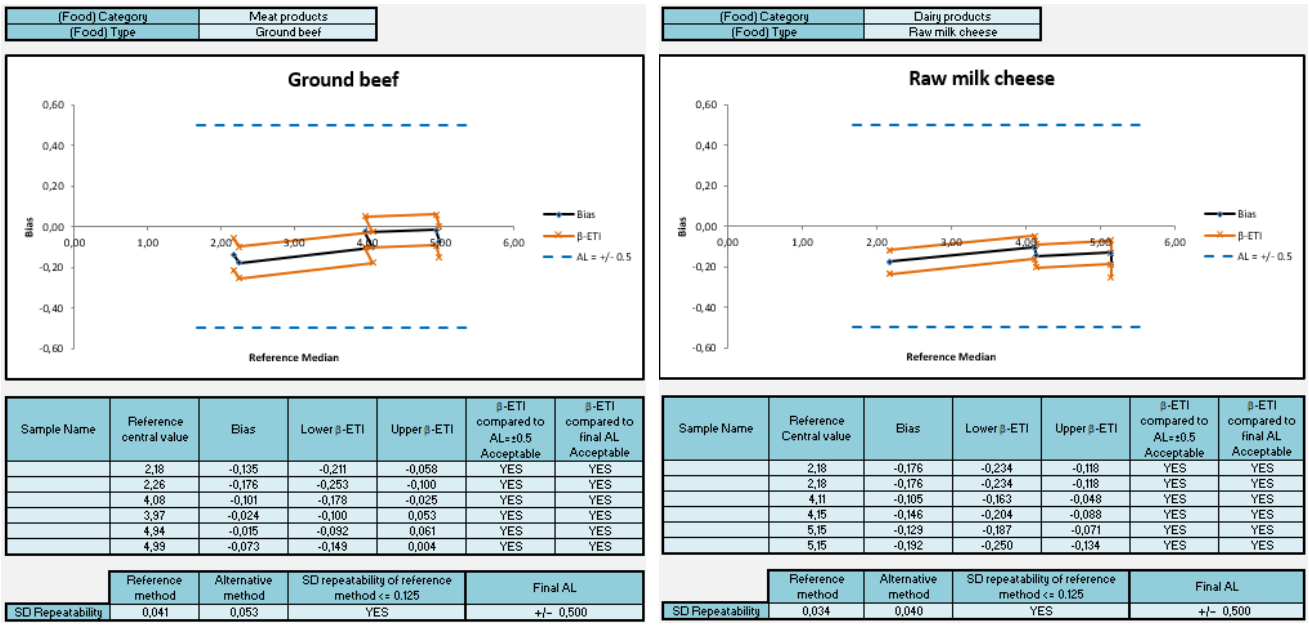
Category	Matrix	Code	Strain	Origin of the strain	Contamination level
Meat product	Ground beef	STA.1.28	*Staphylococcus aureus*	Turkey meat	
Dairy products	Raw milk cheese	STA.1.25	*Staphylococcus aureus*	Saint-Mathurin with raw milk	100 CFU/g
Seafood products	Whiting fillet	STA.1.24	*Staphylococcus aureus*	Shrimp	
Vegetal products	Grated carrot	STA.1.26	*Staphylococcus aureus*	Paella rice	5000 CFU/g
Pastries and egg products	Pasteurized whole egg	STA.1.8	*Staphylococcus aureus*	Biscuit factory	100 000 CFU/g
Pet food	Dog terrine	STA.1.29	*Staphylococcus aureus*	Turkey carcass	

6.2.2. Results and interpretation

The raw data are provided in Appendix F. The summary tables (in log CFU/g) and calculations are provided in Appendix F. The statistical results and the accuracy profiles are provided Figure 9. 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 all the categories, the probability for the tolerance interval β is set at 80% and the acceptability limits at 0.5.

Figure 9: accuracy profiles



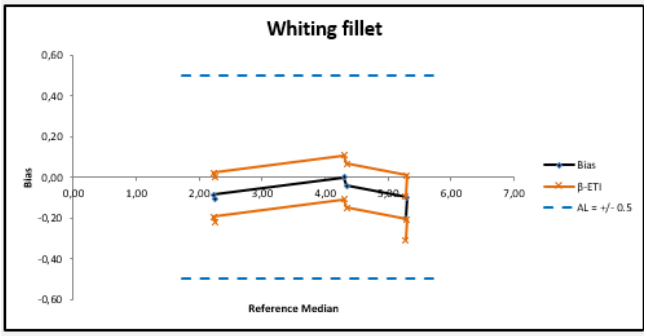
Sample Name	Reference central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
	2,18	-0,135	-0,211	-0,058	YES	YES
	2,26	-0,176	-0,253	-0,100	YES	YES
	4,08	-0,101	-0,178	-0,025	YES	YES
	3,97	-0,024	-0,100	0,053	YES	YES
	4,94	-0,015	-0,092	0,061	YES	YES
	4,99	-0,073	-0,149	0,004	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,041	0,053	YES	+/- 0,500

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
	2,18	-0,176	-0,234	-0,118	YES	YES
	2,18	-0,176	-0,234	-0,118	YES	YES
	4,11	-0,105	-0,163	-0,048	YES	YES
	4,15	-0,146	-0,204	-0,088	YES	YES
	5,15	-0,129	-0,187	-0,071	YES	YES
	5,15	-0,192	-0,250	-0,134	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,034	0,040	YES	+/- 0,500

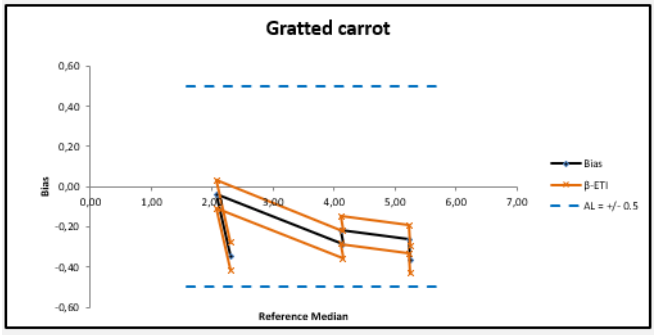
(Food) Category	Seafood
(Food) Type	Whiting fillet



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
	2,26	-0,109	-0,217	-0,001	YES	YES
	2,23	-0,084	-0,193	0,024	YES	YES
	4,30	0,000	-0,108	0,108	YES	YES
	4,34	-0,041	-0,150	0,067	YES	YES
	5,30	-0,097	-0,205	0,011	YES	YES
	5,28	-0,200	-0,308	-0,091	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,047	0,075	YES	+/- 0,500

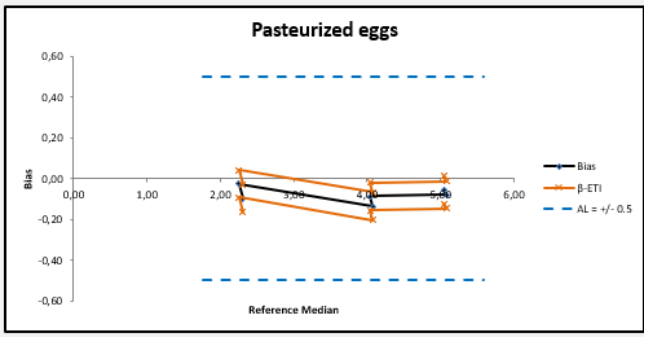
(Food) Category	Vegetables
(Food) Type	Gratted carrot



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
	2,30	-0,347	-0,416	-0,277	YES	YES
	2,08	-0,038	-0,107	0,032	YES	YES
	4,15	-0,289	-0,358	-0,220	YES	YES
	4,11	-0,216	-0,286	-0,147	YES	YES
	5,23	-0,262	-0,331	-0,193	YES	YES
	5,26	-0,363	-0,432	-0,294	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,057	0,048	YES	+/- 0,500

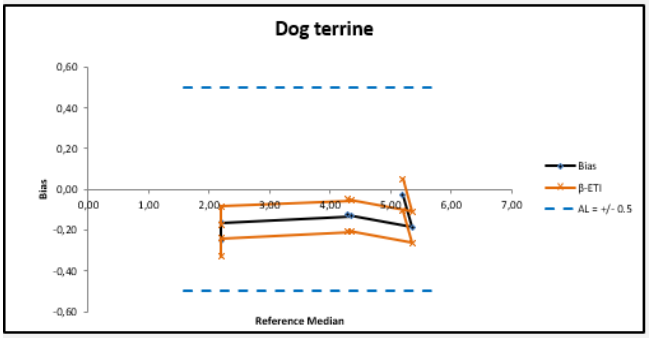
(Food) Category	Egg products and composite
(Food) Type	Pasteurized eggs



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
	2,30	-0,097	-0,165	-0,029	YES	YES
	2,26	-0,025	-0,093	0,043	YES	YES
	4,08	-0,135	-0,203	-0,067	YES	YES
	4,04	-0,087	-0,155	-0,019	YES	YES
	5,08	-0,079	-0,147	-0,011	YES	YES
	5,04	-0,055	-0,122	0,013	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,036	0,047	YES	+/- 0,500

(Food) Category	Pet food
(Food) Type	Dog terrine



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
	2,20	-0,250	-0,328	-0,172	YES	YES
	2,20	-0,163	-0,241	-0,085	YES	YES
	4,36	-0,131	-0,209	-0,053	YES	YES
	4,30	-0,125	-0,203	-0,047	YES	YES
	5,36	-0,186	-0,264	-0,108	YES	YES
	5,20	-0,028	-0,106	0,050	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,046	0,054	YES	+/- 0,500

For the accuracy profiles of all the categories, with β at 80% and AL at 0.5, the upper limits of the β-expectation tolerance interval (β-ETI) are inferior to the positive acceptability limit of 0.5 and the lower limits of the β-ETI are superior to the negative acceptability limit of -0.5.

6.2.3. Conclusion

The accuracy profiles are satisfactory in the range of contamination tested.

7. General conclusion of the extension study

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

222 samples were tested in the relative trueness study which clearly satisfied the required criteria for quantitative method comparison according to the 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. All the accuracy profiles fulfill the performance criteria using Petrifilm one plate approach.

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 feed stuff category and one environmental samples category were tested.
A total of 43 samples were thus analyzed and 42 exploited.

The distribution of the samples are presented in Table 19.

Table 19: number and nature of the samples analyzed

Category		Type	Analyzed samples	Exploited results
Meat products	a	Raw meat	2	2
	b	Prepared, seasoned and processed meat, RTE	2	2
	c	Delicatessen	2	2
	TOTAL		**6**	**6**
Dairy products	a	Raw milk cheese	3	3
	b	Raw milk and raw cream	3	3
	c	Pasteurized milk product and RTHE	3	3
	TOTAL		**9**	**9**
Seafood products	a	Raw fish	3	3
	b	Shellfish	2	2
	c	Processed, RTE, RTRH	2	2
	TOTAL		**7**	**7**
Vegetal products	a	RTE- seasoned	2	2
	b	raw cut vegetable	2	1
	c	transformed vegetable	2	2
	TOTAL		**6**	**5**
Pastries and egg products	a	With butter cream	3	3
	b	With custard	3	3
	c	Egg products	3	3
	TOTAL		**9**	**9**
Petfood	a	Dry food	2	2
	b	Raw meat	2	2
	c	Cat/doog food	2	2
	TOTAL		**6**	**6**
TOTAL			**43**	**42**

8.1.2. Artificial contamination of the samples

For this comparison study, all the samples were artificially contaminated among the 43 tested samples.

The list of artificially contaminated samples and the details relating to inoculation are specified in Appendix L.

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 M.

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
				CFU/g	CFU/g
VP	b	3054851	Grated carrot	**<10**	**<10**

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.

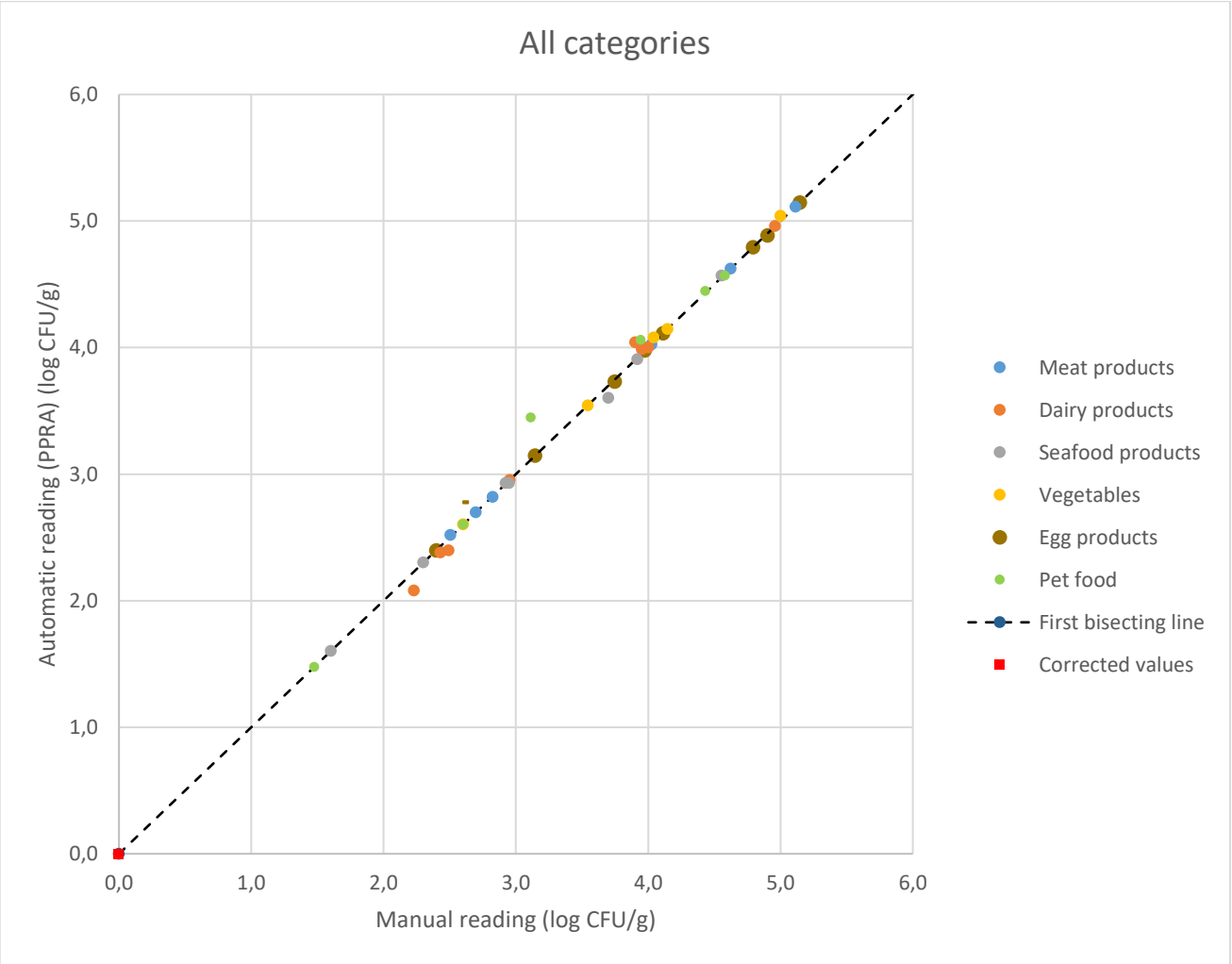
All results are presented in scatter plots per category:

- Figure 10: 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 10: 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 M, 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	0.01	0.00	/	/
Dairy products	9	0.09	-0.01	/	/
Seafood products	7	0.04	-0.02	/	/
Vegetables	5	0.02	0.02	/	/
Pastry and egg products	9	0.06	0.02	/	/
Pet food	6	0.13	0.08	/	/
All cat.	**42**	**0.07**	**0.01**	**-0.14**	**0.16**

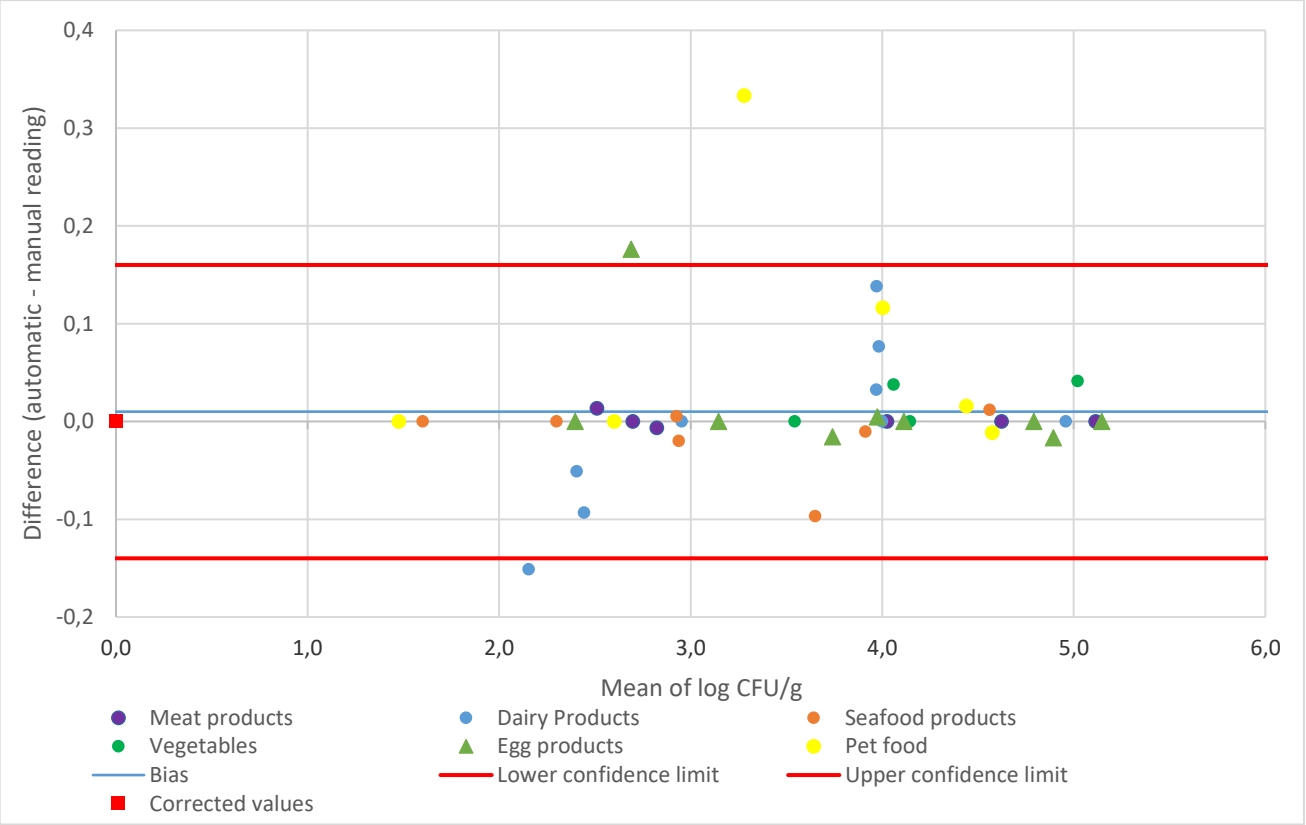
Overall, the average deviation is equal to 0.01, showing no significant bias between the automatic reading by PPRA and manual reading. The average difference varies from -0.02 log CFU/g (seafood products) to 0.08 CFU/g (pet food).
The upper and lower limits of the 95% confidence interval range from 0.16 to -0.14.

The Bland-Altman difference plots are presented in Figure 11 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 11: 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, green: 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: -0.14 UCL: 0.16	DP	c	3054846	2.23	2.08	2.15	**-0.15**
	P&EGP	a	3054791	2.60	2.78	2.69	**0.18**
	Pet food	a	3054745	3.11	3.45	3.28	**0.33**

Two samples are out of the confidence limits (lower than the lower confidence limit) and are above the upper confidence limit.

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 pasteurized goat cheese matrix inoculated with a strain of *Staphylococcus aureus* UCL097 isolated from dairy product.
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.

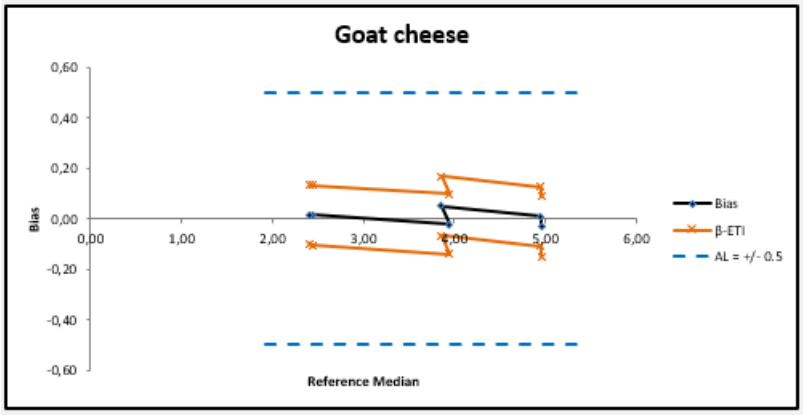
8.2.2. Results and interpretation

Raw data are provided in Appendix N.

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 12: accuracy profile

(Food) Category	Dairy product
(Food) Type	Goat cheese



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
1 to 5	2,45	0,015	-0,103	0,134	YES	YES
1 to 5	2,41	0,016	-0,102	0,135	YES	YES
1 to 5	3,94	-0,020	-0,139	0,098	YES	YES
1 to 5	3,86	0,051	-0,067	0,170	YES	YES
1 to 5	4,95	0,010	-0,109	0,128	YES	YES
1 to 5	4,96	-0,030	-0,148	0,089	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,085	0,082	YES	+/- 0,500

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

9. General conclusion extension study PPRA

In this study, five Petrifilm methods were tested to compare the results obtained by automatic reading performed by the PPRA and manual reading performed by a qualified technician. For each Petrifilm, a reduced study (minimum 5 samples per category) of relative trueness and an accuracy profile were carried out.

A total of 281 samples were tested, and 220 were statistically usable. Of these 22 usable samples, 22 were outside the confidence limits.

Of these 22 samples, 11 had either corrected values or values derived from counts <4 CFU/Petrifilm and were therefore not exploitable.

In summary, out of 220 usable samples, all Petrifilm samples combined, 11 samples showed value outside the confidence limits. It is important to note that no manual corrections were made by the technician on these values, but the software allows this option.

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

10. General conclusion

- **Initial validation:**

The relative trueness of the alternative method is satisfactory.

The accuracy profiles are within the acceptability limits for the six matrix / strain pairs in the range of contamination usually observed for the enumeration of coagulase-positive staphylococci.

The specificity of the alternative method is satisfactory.

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

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

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

222 samples were tested in the relative trueness study which clearly satisfied the required criteria for quantitative method comparison according to the 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. All the accuracy profiles fulfill the performance criteria using One Plate approach.

- **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

ALTERNATIVE METHOD PROTOCOL

NEOGEN® Petrifilm® Staph Express count plate

Initial suspension preparation (1/10)
Realization of decimal dilutions

Dispense 1 mL of the inoculum and its decimal dilutions onto the center of a 3M Petrifilm StaphExpress Plate
Adjust pH from 6,0 to 8,0 if needed

Incubate for 24±2 h at 37±1°C

Interpretation:
Observation of the colonies colour

No colony	Only red-violet colonies	Other colonies than red-violet ones
The test is complete	Colonies are enumerated and recorded as *S. aureus*, *S. hiycus* and *S. intermedius*	The STX disk is inserted to complete the 3M Petrifilm Staph Express System

The test is complete

NEOGEN® Petrifilm® Staph Express Disk Insertion

Lift the top film of the STX plate and insert the STX disk

Incubate for 3 h at 37±1°C

Enumerate the pink zones without or around colonies as *S. aureus*, *S. hiycus* and *S. intermedius*

Appendix B
REFERENCE METHOD PROTOCOL

NF EN ISO 6888-2 - Inoculation protocol

Weigh an aliquot sample – Realize the initial suspension and decimal dilutions

Transfer 1 mL in duplicate in two Petri dishes

Add 12 to15 mL of BP + RPF medium

Let solidify about 10 minutes at room temperature

Let dry about 15 minutes at room temperature

Invert the plates

Incubate for 24±2 h at 37±1°C , and if necessary 24 h more (absence of characteristic colonies)

Enumerate characteristic colonies

Appendix C : Artificial contaminations

Category	Type	N°sample	Analysis date	Sample	Artificial contamination			
					Code	Strain	Origin	Injury protocol
Meat products	m3	STX 1	ISHA 2019	Smoked bacon	STA.1.28	*Staphylococcus aureus*	Chicken leg without antibiotic	Seeding 48h at 5±3°C
	m3	STX 2	ISHA 2019	Bacon				
Dairy products	d1	STX 3	ISHA 2019	Saint Nectaire	STA.1.25	*Staphylococcus aureus*	Saint Mathurin with raw milk	Seeding 48h at 5±3°C
	d1	STX 4	ISHA 2019	Reblochon				
	d3	2007 Y3	Previous validation	Strawberry ice	No available information about the strain and the protocol of contamination used by IPL			
Seafood products	s1	STX 5	ISHA 2019	Whiting filet	STA.1.24	*Staphylococcus aureus*	Shrimps	Seeding 72h at 5±3°C
	s2	STX 6	ISHA 2019	Baked mussels				
	s2	STX 7	ISHA 2019	Baked mussels				
Vegetal products	v1	2007 DD2	Previous validation	Mixed salad	No available information about the strain and the protocol of contamination used by IPL			
	v2	2007 F1	Previous validation	Sliced vegetables	No available information about the strain and the protocol of contamination used by IPL			
	v2	STX 8	ISHA 2019	Grated carrot	STA.1.27	*Staphylococcus aureus*	Rabbit with leek	Seeding 72h at 5±3°C
	v2	STX 9	ISHA 2019	Reb cabbage				
	v2	STX 10	ISHA 2019	Apple	STA.1.26	*Staphylococcus aureus*	Paella rice	Seeding 72h at 5±3°C
	v2	STX 11	ISHA 2019	Kiwi				
	v3	STX 12	ISHA 2019	Baked red beans				
	v3	STX 13	ISHA 2019	Baked green beans	STA.1.37	*Staphylococcus aureus*	Tabbouleh	Seeding 72h at 5±3°C
	v3	STX 14	ISHA 2019	Fruit salad				
Pastries and eggs products	eg2	STX 15	ISHA 2019	Chocolate cake with custard	STA.1.7	*Staphylococcus aureus*	Biscuit factory	Seeding 72h at 5±3°C
	eg2	STX 16	ISHA 2019	Meringue with custard				
	eg3	STX 17	ISHA 2019	Mayonnaise				
	eg3	STX 18	ISHA 2019	Eggs "mimosa"	STA.1.8	*Staphylococcus aureus*	Biscuit factory	Seeding 72h at 5±3°C
	eg3	STX 19	ISHA 2019	Eggs salad	STA.1.38	*Staphylococcus aureus*	Eggs flow	Seeding 72h at 5±3°C
	eg3	STX 20	ISHA 2019	Pasteurized eggs				
Petfood	a1	2007 Z1	Previous validation	Pellets for dog	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 X1	Previous validation	Pellets for cat	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 X2	Previous validation	Pellets for cat	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 X3	Previous validation	Flour for fish	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 E1	Previous validation	Pellets for animals	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 E2	Previous validation	Cereals for animals	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 E3	Previous validation	Pellets for cat	No available information about the strain and the protocol of contamination used by IPL			
	a2	2007 W1	Previous validation	Animal meat waste	No available information about the strain and the protocol of contamination used by IPL			
	a2	2007 W2	Previous validation	Animal meat waste	No available information about the strain and the protocol of contamination used by IPL			
	a2	2007 W3	Previous validation	Animal meat waste	No available information about the strain and the protocol of contamination used by IPL			
	a2	STX 21	ISHA 2019	Pork offal	STA.1.39	*Staphylococcus aureus*	Offal	Seeding 72h at 5±3°C
	a2	STX 22	ISHA 2019	Beef offal				
	a3	2007 Y1	Previous validation	Lamb and vegetables terrine	No available information about the strain and the protocol of contamination used by IPL			
	a3	2007 Y2	Previous validation	Lamb and vegetables terrine	No available information about the strain and the protocol of contamination used by IPL			
	a3	STX 23	ISHA 2019	Dog terrine with chicken	STA.1.39	*Staphylococcus aureus*	Offal	Seeding 72h at 5±3°C
	a3	STX 24	ISHA 2019	Dog terrine with beef	STA.1.29	*Staphylococcus aureus*	Turkey carcass	Seeding 72h at 5±3°C
	a3	STX 25	ISHA 2019	Chicken kibble for cat				
	a3	STX 28	ISHA 2019	Dog terrine with beef	STA.1.29	*Staphylococcus aureus*	Turkey carcass	Seeding 72h at 5±3°C
	a3	STX 29	ISHA 2019	Chicken kibble for cat	STA.1.39	*Staphylococcus aureus*	Offal	Seeding 72h at 5±3°C

Appendix D:

Relative trueness – raw results

Meat products

Category	Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2								MA: Petrifilm Staph Express							
						Dilution	CFU/ plate				CFU/g or mL		Log CFU/g or mL		Dilution	CFU/ plate		CFU		CFU/g or mL		Log CFU/g or mL	
							Rep1		Rep 2		Rep 1	Rep 2	Rep 1	Rep 2		Rep1	Rep 2	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
							Plate 1	Plate 2	Plate 1	Plate 2													
Meat products	m1	M11	PV	Filet de porc	Pork filet						64 EN	~~30 PU~~	1.81	~~1.48~~						10	~~10~~	1.00	~~1.00~~
	m1	A5	PV	Escalope de poulet	Chicken cutlet						35 PU	~~20 PU~~	1.54	~~1.30~~						10	~~20~~	1.00	~~1.30~~
	m1	A6	PV	Morceaux de canard	Duck						300	~~250~~	2.48	~~2.40~~						170	~~190~~	2.23	~~2.28~~
	m1	A15	PV	Viande bovine	Beef meat						10 PU	~~<10~~	1.00	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m1	A16	PV	Foies de volaille	Liver poultry						>10 and <100	~~>10 and <100~~	>1 and <2	~~>1 and <2~~						<10	~~<10~~	<1	~~<1~~
	m1	B6	PV	Rognons	Kidneys						700	~~800~~	2.85	~~2.90~~						500	~~600~~	2.70	~~2.78~~
	m1	D14	PV	Viande hachée	Minced meat						1400	~~750~~	3.15	~~2.88~~						1400	~~1200~~	3.15	~~3.08~~
	m1	3M06	PV	Rognons de porc	Pork kidneys						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m1	3M15	PV	Rognons de porc	Pork kidnes						1455	~~860~~	3.16	~~2.93~~						990	~~880~~	3.00	~~2.94~~
	m1	3M17	PV	Langue de porc	Tongue of pork						<10	~~<10~~	<1	~~<1~~						100	~~100~~	2.00	~~2.00~~
	m1	3M22	PV	Langue de porc	Tongue of pork						>100 and <1000	~~>100 and <1000~~	>2 and <3	~~>2 and <3~~						1300	~~1400~~	3.11	~~3.15~~
	m1	3M80	PV	Viande hachée	Meat minced						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m1	3M94	PV	Abats	Offals						<1000	~~<1000~~	<3	~~<3~~						<10	~~<10~~	<1	~~<1~~
	m1	3M95	PV	Steak de cheval	Horse steak						<1000	~~<1000~~	<3	~~<3~~						<10	~~<10~~	<1	~~<1~~
	m1	L12	PV	Cuisses de caille	Quail wings						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m1	L13	PV	Filet dindonneau	Turkey filet						<100	~~>10 and <100~~	<2	~~>1 and <2~~						30	~~30~~	1.48	~~1.48~~
	m1	R1	PV	Steack haché bœuf	Ground beef						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m1	R2	PV	Boullettes de bœuf	Beef meatballs						1750	~~1750~~	3.24	~~3.24~~						1600	~~1300~~	3.20	~~3.11~~
	m1	R3	PV	Steak haché bœuf	Ground beef						310	~~350~~	2.49	~~2.54~~						470	~~530~~	2.67	~~2.72~~
	m1	R4	PV	Steak haché bœuf	Ground beef						360	~~300~~	2.56	~~2.48~~						290	~~430~~	2.46	~~2.63~~
	m1	R8	PV	Escalope de veau	Veal cutlet						690	~~820~~	2.84	~~2.91~~						500	~~200~~	2.70	~~2.30~~
	m1	R13	PV	Boullettes de bœuf	Beef meatballs						1500	~~1350~~	3.18	~~3.13~~						1600	~~1500~~	3.20	~~3.18~~
	m1	R14	PV	Viande hachée	Meat minced						15 PU	~~<10~~	1.18	~~<1~~						<10	~~10~~	<1	~~1.00~~
	m1	R17	PV	Escalope de veau	Veal cutlet						40 PU	~~55 EN~~	1.60	~~1.74~~						70	~~20~~	1.85	~~1.30~~
	m1	R25	PV	Escalope de veau	Veal cutlet						UR	~~UR~~	/	/						300	~~310~~	2.48	~~2.49~~
	m1	R26	PV	Escalope de veau	Veal cutlet						UR	~~UR~~	/	/						160	~~100~~	2.20	~~2.00~~
	m1	2007 CC3	PV	Escalope de dinde	Turkey cutlet						<10	~~<10~~	<1	~~<1~~						80	~~100~~	1.90	~~2.00~~
	m2	B7	PV	Chair à saucisse	sausage meat						290	~~360~~	2.46	~~2.56~~						370	~~350~~	2.57	~~2.54~~
	m2	D6	PV	Ailes de poulet paprika	Chicken wings with paprika						410	~~430~~	2.61	~~2.63~~						100	~~400~~	2.00	~~2.60~~
	m2	D15	PV	Fricadelles	Fricadelles						1400	~~2200~~	3.15	~~3.34~~						1700	~~1900~~	3.23	~~3.28~~
	m2	D16	PV	Rissolettes de porc pânées	Bread rissolettes of pork						750	~~940~~	2.88	~~2.97~~						1500	~~800~~	3.18	~~2.90~~
	m2	3M41	PV	Lasagne bolognaise	Lasagne bolognaise						240	~~340~~	2.38	~~2.53~~						170	~~160~~	2.23	~~2.20~~
	m2	3M42	PV	Lasagne bolognaise	Lasagne bolognaise						750	~~760~~	2.88	~~2.88~~						340	~~260~~	2.53	~~2.41~~
	m2	3M57	PV	Poudre de viande	Meat powder						20000	~~18500~~	4.30	~~4.27~~						10000	~~20000~~	4.00	~~4.30~~
	m2	3M58	PV	Poudre de viande	Meat powder						31000	~~17000~~	4.49	~~4.23~~						10000	~~23000~~	4.00	~~4.36~~
	m2	3M59	PV	Poudre de viande	Meat powder						17000	~~17000~~	4.23	~~4.23~~						16000	~~15000~~	4.20	~~4.18~~
	m2	3M82	PV	Merguez	Merguez						<100	~~<100~~	<2	~~<2~~						<10	~~<10~~	<1	~~<1~~
	m2	L14	PV	Saucisse à cuire fumée	Smoked sausage						UR	~~UR~~	/	/						38000	~~36000~~	4.58	~~4.56~~
	m3	M2	PV	Saucisse	Sausage						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m3	A1	PV	Andouillette cuite	Cooked andouillette						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m3	A4	PV	Jambon blanc	Ham						110	~~120~~	2.04	~~2.08~~						>10 and <100	~~<>10 and <100~~	>1 and <2	~~>1 and <2~~
	m3	A11	PV	Saucisson à l'ail	Sausage garlic						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m3	B10	PV	Chipolatas aux herbes	Herbal sausage						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m3	B11	PV	Saucisse de Toulouse	Toulouse sausage						100	~~50~~	2.00	~~1.70~~						110	~~120~~	2.04	~~2.08~~
	m3	D12	PV	Andouillettes	Andouillettes						3100	~~2800~~	3.49	~~3.45~~						1900	~~3300~~	3.28	~~3.52~~
	m3	3M23	PV	Poitrine fraîche	Porl belly						<100	~~<100~~	<2	~~<2~~						90	~~110~~	1.95	~~2.04~~
	m3	3M40	PV	Jambon cru	Raw ham						<10	~~<10~~	<1	~~<1~~						<100	~~<100~~	<2	~~<2~~
	m3	3M53	PV	Lardons fumés	Smoked bacon						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m3	3M54	PV	Chorizo	Chorizo						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m3	3M60	PV	Bacon	Bacon						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m3	3M61	PV	Bacon	Bacon						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m3	3M81	PV	Saucisse	Sausage						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	m3	3M93	PV	Jambon	Ham						<1000	~~<1000~~	<3	~~<3~~						<100	~~<100~~	<2	~~<2~~
	m3	L11	PV	Jambon	Ham						>10 and <100	~~<>10 and <100~~	>1 and <2	~~>1 and <2~~						10	~~30~~	1.00	~~1.48~~
	m3	R24	PV	Rilettes	Rilettes						850	~~650~~	2.93	~~2.81~~						910	~~860~~	2.96	~~2.93~~
	m3	STX 1 (◊)	ISHA 2019	Bacon fumé (CA)	Smoked bacon (CA)	100	98	/	/	/	9600	/	3.98	/	100	78	/	75	/	7500	/	3.88	/
						1000	8	/	/	/					1000	7	/	7	/				
	m3	STX 2 (◊)	ISHA 2019	Bacon (CA)	Bacon (CA)	1000	113	/	/	/	110000	/	5.04	/	1000	98	/	91	/	90000	/	4.95	/
						10000	9	/	/	/					10000	8	/	8	/				

PU: Presence unquantifiable
EN: Estimated number
Results excluded

UR: Unreadable
NC: naturally contaminated
No information about the result

PV: Previous Validation

Meat products

Interpretable results

Category	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Substitued value		Mean	Difference
					log RM	Log AM	Log RM	Log AM		
Meat products	m1	A6	PV	Duck	2.48	2.23	/	/	2.35	-0.25
	m1	B6	PV	Kidneys	2.85	2.70	/	/	2.77	-0.15
	m1	D14	PV	Minced meat	3.15	3.15	/	/	3.15	0.00
	m1	3M15	PV	Pork kidneys	3.16	3.00	/	/	3.08	-0.17
	m1	R2	PV	Beef meatballs	3.24	3.20	/	/	3.22	-0.04
	m1	R3	PV	Ground beef	2.49	2.67	/	/	2.58	0.18
	m1	R4	PV	Ground beef	2.56	2.46	/	/	2.51	-0.09
	m1	R8	PV	Veal cutlet	2.84	2.70	/	/	2.77	-0.14
	m1	R13	PV	Beef meatballs	3.18	3.20	/	/	3.19	0.03
	m1	R13	PV	Beef meatballs	1.60	1.85	/	/	1.72	0.25
	m2	B7	PV	sausage meat	2.46	2.57	/	/	2.52	0.11
	m2	D6	PV	Chicken wings with paprika	2.61	2.00	/	/	2.31	-0.61
	m2	D15	PV	Fricadelles	3.15	3.23	/	/	3.19	0.08
	m2	D16	PV	Bread rissolettes of pork	2.88	3.18	/	/	3.03	0.30
	m2	3M41	PV	Lasagne bolognaise	2.38	2.23	/	/	2.31	-0.15
	m2	3M42	PV	Lasagne bolognaise	2.88	2.53	/	/	2.70	-0.34
	m2	3M57	PV	Meat powder	4.30	4.00	/	/	4.15	-0.30
	m2	3M58	PV	Meat powder	4.49	4.00	/	/	4.25	-0.49
	m2	3M59	PV	Meat powder	4.23	4.20	/	/	4.22	-0.03
	m3	B11	PV	Toulouse sausage	2.00	2.04	/	/	2.02	0.04
	m3	D12	PV	Andouillettes	3.49	3.28	/	/	3.39	-0.21
	m3	R24	PV	Rillettes	2.93	2.96	/	/	2.94	0.03
	m3	STX 1	ISHA 2019	Smoked bacon	3.98	3.88	/	/	3.93	-0.11
	m3	STX 2	ISHA 2019	Smoked bacon	5.04	4.95	/	/	5.00	-0.09
								Average category:		-0.09
								Standard deviation of the category:		0.22

Meat products											
Non interpretable results											
	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Substitued value		Mean	Difference
					log RM	Log AM	Log RM	Log AM		
Above or below the quantification range	m1	A15	PV	Beef meat	1.00	<1	/	0.00	0.50	-1.00
	m1	A16	PV	Liver poultry	>1 and <2	<1	1.00	0.00	0.50	-1.00
	m1	3M06	PV	Pork kidneys	<1	<1	0.00	0.00	0.00	0.00
	m1	3M17	PV	Tongue of pork	<1	2.00	0.00	/	1.50	-1.00
	m1	3M22	PV	Tongue of pork	>2 and <3	3.11	2.00	/	2.56	1.11
	m1	3M80	PV	Meat minced	<1	<1	0.00	0.00	0.00	0.00
	m1	3M94	PV	Offals	<3	<1	2.00	0.00	1.00	-2.00
	m1	3M95	PV	Horse steak	<3	<1	2.00	0.00	1.00	-2.00
	m1	L12	PV	Quail wings	<1	<1	0.00	0.00	0.00	0.00
	m1	L13	PV	Turkey filet	<2	1.48	1.00	/	1.24	1.48
	m1	R1	PV	Ground beef	<1	<1	0.00	0.00	0.00	0.00
	m1	R14	PV	Meat minced	1.18	<1	/	0.00	0.59	-1.18
	m1	2007 CC3	PV	Turkey cutlet	<1	1.90	0.00	/	0.95	1.90
	m2	3M82	PV	Merguez	<2	<1	1.00	0.00	0.50	-1.00
	m3	M2	PV	Sausage	<1	<1	0.00	0.00	0.00	0.00
	m3	A1	PV	Cooked andouillette	<1	<1	0.00	0.00	0.00	0.00
	m3	A4	PV	Ham	2.04	>1 and <2	/	1.00	1.52	-1.04
	m3	A11	PV	Sausage garlic	<1	<1	0.00	0.00	0.00	0.00
	m3	B10	PV	Herbal sausage	<1	<1	0.00	0.00	0.00	0.00
	m3	3M23	PV	Porl belly	<2	1.95	1.00	/	1.48	0.95
	m3	3M40	PV	Raw ham	<1	<2	0.00	1.00	0.50	1.00
	m3	3M53	PV	Smoked bacon	<1	<1	0.00	0.00	0.00	0.00
	m3	3M54	PV	Chorizo	<1	<1	0.00	0.00	0.00	0.00
	m3	3M60	PV	Bacon	<1	<1	0.00	0.00	0.00	0.00
	m3	3M61	PV	Bacon	<1	<1	0.00	0.00	0.50	-1.00
	m3	3M81	PV	Sausage	<1	<1	0.00	0.00	2.05	1.30
	m3	3M93	PV	Ham	<3	<2	2.00	1.00	1.50	-1.00
	m3	L11	PV	Ham	>1 and <2	1.00	1.00	/	1.00	0.00
< 4CFU/plate	m1	M11	PV	Pork filet	1.81	1.00	/	/	1.41	-0.81
	m1	A5	PV	Chicken cutlet	1.54	1.00	/	/	1.27	-0.54
Sample excluded	m1	R25	PV	Veal cutlet	/	2.48	/	/	/	/
	m1	R26	PV	Veal cutlet	/	2.20	/	/	/	/
	m2	L14	PV	Smoked sausage	/	4.58	/	/	/	/

Dairy Product

Dairy Product

Category	Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2									MA: Petrifilm Staph Express								
						Dilution	CFU/ plate				CFU/g or mL		Log CFU/g or mL		Dilution	CFU/ plate		CFU confirmed		CFU/g or mL		Log CFU/g or mL	
							Rep1		Rep 2							Rep1	Rep 2	Rep1	Rep 2				
							Plate 1	Plate 2	Plate 1	Plate 2	Rep 1	Rep 2	Rep 1	Rep 2						Rep 1	Rep 2	Rep 1	Rep 2
Dairy products	d1	A3	PV	Munster	Munster						UR	~~UR~~	/	/						UR	~~UR~~	/	/
	d1	3M01	PV	Reblochon	Reblochon						500	~~<1000~~	2.70	<3						UR	~~UR~~	/	/
	d1	3M02	PV	Reblochon	Reblochon						UR	~~UR~~	/	/						UR	~~UR~~	/	/
	d1	3M03	PV	Reblochon	Reblochon						1300	~~1100~~	3.11	~~3.04~~						UR	~~UR~~	/	/
	d1	3M04	PV	Reblochon	Reblochon						UR	~~UR~~	/	/						UR	~~UR~~	/	/
	d1	3M12	PV	Munster	Munster						UR	~~UR~~	/	/						UR	~~UR~~	/	/
	d1	3M21	PV	Munster	Munster						19000	~~29000~~	4.28	~~4.46~~						<100	~~<100~~	<2	~~<2~~
	d1	3M24	PV	Reblochon	Reblochon						UR	~~UR~~	/	/						1900	~~1300~~	3.28	~~3.11~~
	d1	3M25	PV	Reblochon	Reblochon						UR	~~UR~~	/	/						~~1900~~	2300	~~3~~	3.4
	d1	3M26	PV	Reblochon	Reblochon						UR	~~UR~~	/	/						<100	~~200~~	<2	~~2.30~~
	d1	3M27	PV	Reblochon	Reblochon						1200	~~1200~~	3.08	~~3.08~~						1300	~~1400~~	3.11	~~3.15~~
	d1	3M31	PV	Morbier	Morbier						<100	~~<100~~	<2	~~<2~~						<10	~~<10~~	<1	~~<1~~
	d1	L6	PV	Farmer goat cheese	Farmer goat cheese						3600	~~3200~~	3.56	~~3.51~~						300	~~500~~	2.48	~~2.70~~
	d1	L7	PV	Fromage de chêvre	Farmer goat cheese						170	~~110~~	2.23	~~2.04~~						<100	~~<10~~	<2	~~<1~~
	d1	L15	PV	Fromage fermier	Farmer cheese						710	~~920~~	2.85	~~2.96~~						100	~~90~~	2.00	~~1.95~~
	d1	L16	ISHA 2019	St Nectaire fermier (CA)	St Nectaire farmer (CA)						1100	~~>100 and <1000~~	3.04							>100	~~>100~~	>2	~~>2~~
	d1	STX 3 (0)	ISHA 2019	St Nectaire fermier (CA)	St Nectaire farmer (CA)	100	87	/	/	/	8700	/	3.94	/	100	89	/	88	/	9100	/	3.96	/
						1000	9	/	/	/					1000	13	/	12	/				
	d1	STX 4 (0)	ISHA 2019	Reblochon (CA)	Reblochon (CA)	10000	45	/	/	/	460000	/	5.66	/	10000	54	/	48	/	480000	/	5.68	/
						100000	6	/	/	/					100000	6	/	5	/				
	d2	M3	PV	Lait cru	Raw milk						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	d2	L1	PV	Lait cru	Raw milk						40 EN	~~45 EN~~	1.60	~~1.65~~						10	~~<10~~	1.00	~~<1~~
	d2	L2	PV	Lait cru	Raw milk						190	~~120~~	2.28	~~2.08~~						100	~~130~~	2.00	~~2.11~~
	d2	L3	PV	Crème cru	Raw cream						320	~~390~~	2.51	~~2.59~~						260	~~420~~	2.41	~~2.62~~
	d2	L4	PV	Crème cru	raw cream						110	~~150~~	2.04	~~2.18~~						170	~~100~~	2.23	~~2.00~~
	d2	L5	PV	Crème cru	Raw cream						150	~~100~~	2.18	~~2.00~~						200	~~200~~	2.30	~~2.30~~
	d2	L8	PV	Lait cru de chêvre	Goat raw milk						70 EN	~~60 EN~~	1.85	~~1.78~~						70	~~50~~	1.85	~~1.70~~
	d2	L9	PV	Lait cru	Raw milk						50 EN	~~50 EN~~	1.70	~~1.70~~						50	~~60~~	1.70	~~1.78~~
	d2	L10	PV	Lait cru	Raw milk						250	~~250~~	2.40	~~2.40~~						>10 and <100	~~>10 and <100~~	>1 and <2	~~>1 and <2~~
	d2	R32	PV	Lait cru	Raw milk						220	~~350~~	2.34	~~2.54~~						270	~~210~~	2.43	~~2.32~~
	d2	2007 B2	PV	Lait cru	Raw milk						10	~~<10~~	1.00	~~<1~~						<10	~~10~~	<1	~~<1~~
	d2	2007C1	PV	Lait cru	Raw milk						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	d3	M1	PV	Glace	Ice cream						350	~~390~~	2.54	~~2.59~~						250	~~190~~	2.40	~~2.28~~
	d3	A8	PV	Yaourt surgelé fraise	Strawberry frozen yoghurt						110	~~80~~	2.04	~~1.90~~						90	~~30~~	1.95	~~1.48~~
	d3	A9	PV	Yaourt surgelé pêche	Peach frozen yoghurt						55 EN	~~82 EN~~	1.74	~~1.91~~						80	~~30~~	1.90	~~1.48~~
	d3	A10	PV	Yaourt surgelé vanille	Vanilla frozen yoghurt						110	~~75 EN~~	2.04	~~1.88~~						30	~~30~~	1.48	~~1.48~~
	d3	E7	PV	Mimolette	Momolette						50 EN	~~>10 and <100~~	1.70	~~>1 and <2~~						<100	~~<100~~	<2	~~<1~~
	d3	E8	PV	Raclette	Raclette						75 EN	~~45 EN~~	1.88	~~1.65~~						<10	~~<10~~	<1	~~<1~~
	d3	E9	PV	Gouda	Gouda						>10 and <100	~~>10 and <100~~	>1 and <2	~~>1 and <2~~						<10	~~<10~~	<1	~~<1~~
	d3	E10	PV	Gouda	Gouda						100	~~150~~	2.00	~~2.18~~						40	~~40~~	1.60	~~1.60~~
	d3	3M20	PV	Gorgonzola	Gorgonzola						<100	~~<100~~	<2	~~<2~~						<10	~~<10~~	<1	~~<1~~
	d3	3M30	PV	Fromage de brebis	Sheep cheese						12000	~~9500~~	4.08	~~3.98~~						>100 and <1000	~~>100 and <1000~~	>2 and <3	~~>2 and <3~~
	d3	3M36	PV	Fromage de chêvre	Goat cheese						<100	~~<100~~	<2	<2						100	~~100~~	2.00	~~2.00~~
	d3	3M38	PV	Fromage de chêvre	Goat cheese						200	~~500~~	2.30	~~2.70~~						100	~~>10 and <100~~	2.00	~~>1 and <2~~
	d3	R20	PV	Lait de chêvre	Goat milk						UR	~~UR~~	/	/						340	~~360~~	2.53	~~2.56~~
	d3	R21	PV	Lait de chêvre	Goat milk						UR	~~UR~~	/	/						60	~~60~~	1.78	~~1.78~~
	d3	R30	PV	Saint Nectaire	Saint Nectaire						8600	~~10000~~	3.93	~~4.00~~						15000	~~18000~~	4.18	~~4.26~~
	d3	2007 D1	PV	Tartine savoyarde	Tartine savoyarde						64000	~~71000~~	4.81	~~4.85~~						40000	~~48000~~	4.60	~~4.68~~
	d3	2007 D2	PV	Fromage à raclette	Cheese for raclette						10000	~~13000~~	4.00	~~4.11~~						23000	~~33000~~	4.36	~~4.52~~
	d3	2007 AA5	PV	Fromage de Savoie	Cheese from Savoie						3500	~~3700~~	3.54	~~3.57~~						1400	~~1500~~	3.15	~~3.18~~
	d3	2007 B3	PV	Epoisses	Epoisses						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	d3	2007 B4	PV	Fromage de St Priest	Cheese St Priest						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	d3	2007 Y3	PV	Glace à la fraise (CA)	Strawberry ice (CA)						40 EN	~~80 EN~~	1.60	~~1.90~~						20	~~30~~	1.30	~~1.48~~

PU: Presence unquantifiable
EN: Estimated number
Results excluded

UR: Unreadable
NC: naturally contaminated
No information about the result

PV: Previous Validation

Dairy Product										
Interpretable results										
Category	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Substitued value		Mean	Difference
					log RM	Log AM	Log RM	Log AM		
Dairy Product	d1	3M27	PV	Reblochon	3.08	3.11	/	/	3.10	0.03
	d1	L6	PV	Farmer goat cheese	3.56	2.48	/	/	3.02	-1.08
	d1	L15	PV	Farmer cheese	2.85	2.00	/	/	2.43	-0.85
	d1	STX 3 (◊)	ISHA 2019	St Nectaire farmer (CA)	3.94	3.96	/	/	3.95	0.02
	d1	STX 4 (◊)	ISHA 2019	Reblochon (CA)	5.66	5.68	/	/	5.67	0.02
	d2	L2	PV	Raw milk	2.28	2.00	/	/	2.14	-0.28
	d2	L3	PV	Raw cream	2.51	2.41	/	/	2.46	-0.09
	d2	L4	PV	raw cream	2.04	2.23	/	/	2.14	0.19
	d2	L5	PV	Raw cream	2.18	2.30	/	/	2.24	0.12
	d2	L8	PV	Goat raw milk	1.85	1.85	/	/	1.85	0.00
	d2	L9	PV	Raw milk	1.70	1.70	/	/	1.70	0.00
	d2	R32	PV	Raw milk	2.34	2.43	/	/	2.39	0.09
	d3	M1	PV	Ice cream	2.54	2.40	/	/	2.47	-0.15
	d3	A8	PV	Strawberry frozen yoghurt	2.04	1.95	/	/	2.00	-0.09
	d3	A9	PV	Peach frozen yoghurt	1.74	1.90	/	/	1.82	0.16
	d3	E10	PV	Gouda	2.00	1.60	/	/	1.80	-0.40
	d3	3M38	PV	Goat cheese	2.30	2.00	/	/	2.15	-0.30
	d3	R30	PV	Saint Nectaire	3.93	4.18	/	/	4.06	0.24
	d3	2007 D1	PV	Tartine savoyarde	4.81	4.60	/	/	4.70	-0.20
	d3	2007 D2	PV	Cheese for raclette	4.00	4.36	/	/	4.18	0.36
	d3	2007 AA5	PV	Cheese from Savoie	3.54	3.15	/	/	3.35	-0.40
								Average category:		-0.12
								Standard deviation of the category:		0.35

Dairy Product										
Non interpretable results										
	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Corrected value		Mean	Difference
					log RM	Log AM	Log RM	Log AM		
Above or below the quantification range	d1	3M21	PV	Munster	4.28	<2	/	1.00	2.64	-3.28
	d1	3M31	PV	Morbier	<2	<1	1.00	0.00	0.50	-1.00
	d1	L7	PV	Farmer goat cheese	<2	<2	1.00	1.00	1.00	0.00
	d1	L16	PV	St Nectaire farmer (CA)	3.04	>2	/	3.00	3.02	-0.04
	d2	M3	PV	Raw milk	<1	<1	0.00	0.00	0.00	0.00
	d2	L10	PV	Raw milk	2.40	>1 and <2	/	1.00	1.70	-1.40
	d2	2007 B2	PV	Raw milk	1.00	<1	/	0.00	0.50	-1.00
	d2	2007C1	PV	Raw milk	<1	<1	0.00	0.00	0.00	0.00
	d3	E7	PV	Momolette	1.70	<2	/	1.00	1.35	-0.70
	d3	E8	PV	Raclette	1.88	<1	/	0.00	0.94	-1.88
	d3	E9	PV	Gouda	>1 and <2	<1	1.00	0.00	0.50	-1.00
	d3	3M20	PV	Gorgonzola	<2	<1	1.00	0.00	0.50	-1.00
	d3	3M30	PV	Sheep cheese	4.00	>2 and <3	/	2.00	3.00	-2.00
	d3	3M36	PV	Goat cheese	<2	2.00	1.00	/	1.50	1.00
	d3	2007 B3	PV	Epoisses	<1	<1	0.00	0.00	0.00	0.00
	d3	2007 B4	PV	Cheese St Priest	<1	<1	0.00	0.00	0.00	0.00
< 4CFU/plate	d2	L1	PV	Raw milk	0.00	0.00	/	/	0.00	0.00
	d3	A10	PV	Vanilla frozen yoghurt	0.00	0.00	/	/	0.00	0.00
	d3	2007 Y3	PV	Strawberry ice (CA)	0.00	0.00	/	/	0.00	0.00
Sample excluded	d1	A3	PV	Munster	UR	UR	/	/	/	/
	d1	3M01	PV	Reblochon	2.70	UR	/	/	/	/
	d1	3M02	PV	Reblochon	UR	UR	/	/	/	/
	d1	3M03	PV	Reblochon	3.11	UR	/	/	/	/
	d1	3M04	PV	Reblochon	UR	UR	/	/	/	/
	d1	3M12	PV	Munster	UR	UR	/	/	/	/
	d1	3M24	PV	Reblochon	UR	3.28	/	/	/	/
	d1	3M25	PV	Reblochon	UR	<2	/	1.00	/	/
	d1	3M26	PV	Reblochon	UR	UR	/	/	/	/
	d3	R20	PV	Goat milk	UR	2.53	/	/	/	/
	d3	R21	PV	Goat milk	UR	1.78	/	/	/	/

Seafood products

Category	Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2								MA: Petrifilm Staph Express								
						Dilution	CFU/ plate				CFU/g or mL		Log CFU/g or mL		Dilution	CFU/ plate		CFU confirmed		CFU/g or mL		Log CFU/g or mL	
							Rep1		Rep 2														
							Plate 1	Plate 2	Plate 1	Plate 2	Rep 1	Rep 2	Rep 1	Rep 2		Rep1	Rep 2	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
Seafood products	s1	M6	PV	Filet de sole	Filet of sole						UR	~~UR~~	/	/						20	~~10~~	1.30	~~1.00~~
	s1	D8	PV	Filet de truite	Filet of trout						45 EN	~~10 PU~~	1.65	~~1.00~~						100	~~100~~	2.00	~~2.00~~
	s1	R27	PV	Cabillaud	Cod						55 EN	~~25 PU~~	1.74	~~1.40~~						60	~~10~~	1.78	~~1.00~~
	s1	R28	PV	Filet de loup	Filet of loup						40 EN	~~50 EN~~	1.60	~~1.70~~						50	~~60~~	1.70	~~1.78~~
	s1	R38	PV	Filet de merlan	Filet of whiting						300	~~320~~	2.48	~~2.48~~						340	~~210~~	2.53	~~2.32~~
	s1	2007 AA6	PV	Filet de merlu	Filet of hake						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	s1	2007 CC2	PV	Filet de cabillaud	Filet of cod						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	s1	2007 A1	PV	Filet d'empereur	Filet of fish: "empereur"						35 PU	~~30 PU~~	1.54	~~1.48~~						40	~~10~~	1.60	~~1.00~~
	s1	STX 5 (◊)	ISHA 2019	Filet de cabillaud (CA)	Whiting filet (CA)	1000	30	/	/	/	2900	/	3.46	/	1000	22	/	22	/	2000	/	3.30	/
						10000	2	/	/	/					10000	2	/	2	/				
	s2	R9	PV	Crevette	Shrimps						<10	~~<10~~	<1	~~<1~~						<100	~~<100~~	<2	~~<2~~
	s2	R10	PV	Crevette	Shrimps						210	~~200~~	2.32	~~2.30~~						150	~~200~~	2.18	~~2.30~~
	s2	R11	PV	Crevette	Shrimps						70	~~60~~	1.85	~~1.78~~						60	~~60~~	1.78	~~1.78~~
	s2	R12	PV	Crevette	Shrimps						45	~~25~~	1.65	~~1.40~~						100	~~80~~	2.00	~~1.90~~
	s2	STX 6 (◊)	ISHA 2019	Moules cuites (CA)	Cooked mussels (CA)	1000	96	/	/	/	98000	/	4.99		1000	102	/	100	/	100000	/	5.00	/
						10000	12	/	/	/					10000	12	/	12	/				
	s2	STX 7 (◊)	ISHA 2019	Moules cuites (CA)	Cooked mussels (CA)	10000	60	/	/	/	590000	/	5.77		10000	49	/	42	/	420000	/	5.62	/
						100000	5	/	/	/					100000	4	/	4	/				
	s3	A13	PV	Salade au surimi	Salad with surimi						>100 and <1000	~~>100 and <1000~~	>2 and <3	~~>2 and <3~~						UR	~~>100 and <1000~~	/	~~>2 and <3~~
	s3	C14	PV	Sardine	Sardine						UR	~~UR~~	/	/						UR	~~>100 and <1000~~	/	~~>2 and <3~~
	s3	C15	PV	Saumon fumé	Smoked salmon						UR	~~UR~~	/	/						900	~~1000~~	2.95	~~3.00~~
	s3	C17	PV	Saumon à l'aneth	Salmon with dill						UR	~~UR~~	/	/						<100	~~<100~~	<2	
	s3	C19	PV	Saumon précuit	Pre-baked salmon						15 PU	~~25 PU~~	1.18	~~1.40~~						10	~~10~~	1.00	~~1.00~~
	s3	C20	PV	Surimi	Surimi						620	~~680~~	2.79	~~2.83~~						890	~~1200~~	2.95	~~3.08~~
	s3	C21	PV	Assiette marine	Assiette marine						UR	~~UR~~	/	/						UR	~~UR~~	/	/
	s3	3M05	PV	Surimi	Surimi						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	s3	3M18	PV	Crevette et surimi	Shrimp and surimi						>10 and <100	~~<10~~	>1 and <2	~~<1~~						<10	~~<10~~	<1	~~<1~~
	s3	3M32	PV	Filet de sole	Filet of sole						<1000	~~<1000~~	<3	~~<3~~						<10	~~<10~~	<1	~~<1~~
	s3	3M35	PV	Lasagne de saumon	Salmon lasagne						7700	~~9100~~	3.89	~~3.96~~						6100	~~4200~~	3.79	~~3.62~~
	s3	3M43	PV	Lasagne de saumon	Salmon lasagne						3000	~~3900~~	3.48	~~3.59~~						2900	~~2200~~	3.46	~~3.34~~
	s3	3M44	PV	Saumon fumé	Smoked salmon						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	s3	3M51	PV	Salade de crevette	Saled of shrimp						10 PU	~~30 PU~~	1.00	~~1.48~~						50	~~30~~	1.70	~~1.48~~
	s3	3M52	PV	Terrine de langoustine	Terrine of langoustine						UR	~~UR~~	/	/						<10	~~<10~~	<1	~~<1~~
	s3	R34	PV	Crevette et surimi	Srimps and surimi						3000	~~2500~~	3.48	~~3.40~~						2600	~~2200~~	3.41	~~3.34~~
	s3	R37	PV	Poisson cuisiné	Cooked fish						330	~~310~~	2.52	~~2.49~~						330	~~320~~	2.52	~~2.51~~
	s3	R39	PV	Carpaccio de saumon	Salmon carpaccio						230	~~120~~	2.36	~~2.08~~						220	~~160~~	2.34	~~2.20~~
	s3	2007AA4	PV	Mélange de crevette	Mix of shrimps						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~

PU: Presence unquantifiable
EN: Estimated number
Results excluded

UR: Unreadable
NC: naturally contaminated
No information about the result

PV: Previous Validation

Seafood products										
Interpretable results										
Category	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Substitued value		Mean	Difference
					log RM	Log AM	Log RM	Log AM		
Seafood products	s1	D8	PV	Filet of trout	1.65	2.00	/	/	1.83	0.35
	s1	R27	PV	Cod	1.74	1.78	/	/	1.76	0.04
	s1	R28	PV	Filet of loup	1.60	1.70	/	/	1.65	0.10
	s1	R38	PV	Filet of whiting	2.48	2.53	/	/	2.50	0.05
	s1	STX 5 (◊)	ISHA 2019	Whiting filet (CA)	3.46	3.30	/	/	3.38	-0.16
	s2	R10	PV	Shrimps	2.32	2.18	/	/	2.25	-0.15
	s2	R11	PV	Shrimps	1.85	1.78	/	/	1.81	-0.07
	s2	R12	PV	Shrimps	1.65	2.00	/	/	1.83	0.35
	s2	STX 6 (◊)	ISHA 2019	Cooked mussels (CA)	4.99	5.00	/	/	5.00	0.01
	s2	STX 7 (◊)	ISHA 2019	Cooked mussels (CA)	5.77	5.62	/	/	5.70	-0.15
	s3	C20	PV	Surimi	2.79	2.95	/	/	2.87	0.16
	s3	3M35	PV	Salmon lasagne	3.89	3.79	/	/	3.84	-0.10
	s3	3M43	PV	Salmon lasagne	3.48	3.46	/	/	3.47	-0.01
	s3	R34	PV	Srimps and surimi	3.48	3.41	/	/	3.45	-0.06
	s3	R37	PV	Cooked fish	2.52	2.52	/	/	2.52	0.00
	s3	R39	PV	Salmon carpaccio	2.36	2.34	/	/	2.35	-0.02
							Average category:			0.02
							Standard deviation of the category:			0.16

Seafood products										
Non interpretable results										
	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Corrected value		Mean	Difference
					log RM	Log AM	Log RM	Log AM		
Above or below the quantification range	s1	2007 AA6	PV	Filet of hake	<1	<1	0.00	0.00	0.00	0.00
	s1	2007 CC2	PV	Filet of cod	<1	<1	0.00	0.00	0.00	0.00
	s2	R9	PV	Shrimps	<1	<2	0.00	1.00	0.50	1.00
	s3	3M05	PV	Surimi	<1	<1	0.00	0.00	0.00	0.00
	s3	3M18	PV	Shrimp	<1	<1	0.00	0.00	0.00	0.00
	s3	3M32	PV	Filet of sole	<3	<1	2.00	0.00	1.00	-2.00
	s3	3M44	PV	Smoked salmon	<1	<1	0.00	0.00	0.00	0.00
	s3	2007AA4	PV	Mix of shrimps	<1	<1	0.00	0.00	0.00	0.00
< 4CFU/plate	s1	2007 A1	PV	Filet of fish: "empereur"	1.54	1.60	/	/	1.57	0.06
	s3	C19	PV	Pre-baked salmon	1.18	1.00	/	/	1.09	-0.18
	s3	3M51	PV	Salad of shrimp	1.00	1.70	/	/	1.35	0.70
Sample excluded	s1	M6	PV	Filet of sole	/	1.30	/	/	/	/
	s3	A13	PV	Salad with surimi	>2 and <3	/	2.00	/	/	/
	s3	C14	PV	Sardine	/	/	/	/	/	/
	s3	C15	PV	Smoked salmon	/	2.95	/	/	/	/
	s3	C17	PV	Salmon with dill	/	<2	/	1.00	/	/
	s3	C21	PV	Assiette marine	/	/	/	/	/	/
	s3	3M52	PV	Terrine of langoustine	/	<1	/	/	/	/

Vegetal product

Category	Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2									MA: Petrifilm Staph Express								
						Dilution	CFU/ plate				CFU/g or mL		Log CFU/g or mL		Dilution	CFU/ plate		CFU		CFU/g or mL		Log CFU/g or mL	
							Rep1		Rep 2														
							Plate 1	Plate 2	Plate 1	Plate 2	Rep 1	Rep 2	Rep 1	Rep 2		Rep1	Rep 2	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
Vegetal products	v1	A2	PV	Salade composée	Mixed salad						**70**	~~30~~	**1.85**	~~1.48~~						**100**	~~>10 and <100~~	**2.00**	~~>1 and <2~~
	v1	A12	PV	Salade composée (maïs poivr artich)	Mixed salad						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	v1	A14	PV	Salade composée (chou blanc jambon)	Mixed salad (white cabbage, ham)						**90**	~~130~~	**1.95**	~~2.11~~						**30**	~~50~~	**1.48**	~~1.70~~
	v1	D7	PV	Céléry remoulade	Remoulade celery						**1200**	~~2000~~	**3.08**	~~3.30~~						**1230**	~~820~~	**3.09**	~~2.91~~
	v1	D19	PV	Salade composée (céléri carottes)	Mixed salad (carrot, celery)						**360**	~~300~~	**2.56**	~~2.48~~						**180**	~~250~~	**2.26**	~~2.40~~
	v1	3M14	PV	Salade composée (pdt, jambon)	Mixed salad (Potato, ham, tomato)						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	v1	3M37	PV	Salade composée (riz, poivron)	Miwed salad (rice, peppers,						**UR**	~~UR~~	**/**	/						**<10**	~~<10~~	**<1**	~~<1~~
	v1	R5	PV	Salade composée (pdt, thon)	Mixed salad (potato, tuna)						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	v1	R6	PV	Macédoine	Mixed vegetables						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	v1	R7	PV	Salade composée (chou râpé)	Mixed salad (grapped						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	v1	R15	PV	Taboulé	Tabbouleh						**25**	~~15~~	**1.40**	~~1.18~~						**10**	~~10~~	**1.00**	~~1.00~~
	v1	R33	PV	Salade mélée	Mixed of salad						**370**	~~420~~	**2.57**	~~2.62~~						**440**	~~380~~	**2.64**	~~2.58~~
	v1	R35	PV	Céleri rémoulade	Remoulade celery						**4600**	~~4800~~	**3.66**	~~3.68~~						**2600**	~~3500~~	**3.41**	~~3.54~~
	v1	R36	PV	Carottes, tomates	Carrot tomato						**5000**	~~4400~~	**3.70**	~~3.64~~						**3600**	~~3800~~	**3.56**	~~3.58~~
	v1	2007 A2	PV	Salade de pâtes	Pastas salad						**25**	~~15~~	**1.48**	~~1.40~~						**10**	~~10~~	**/**	~~1.00~~
	v1	2007 DD2	PV	Salade composée (CA)	Mixed salad (CA)						**9200**	~~9700~~	**3.96**	~~3.99~~						**7900**	~~8300~~	**3.90**	~~3.92~~
	v2	3M16	PV	Chou	Cabbage						**<100**	~~<100~~	**<2**	~~<2~~						**<100**	~~<100~~	**<2**	~~<2~~
	v2	2007 F1	PV	Emincé de crudité (CA)	Sliced vegetables (CA)						**360000**	~~320000~~	**5.56**	~~5.51~~						**150000**	~~140000~~	**5.18**	~~5.15~~
	v2	STX 8 (◊)	ISHA 2019	Carotte râpées (CA)	Gratted carrot (CA)	1000	32	/	/	/	**31000**	/	**4.49**	/	1000	24	/	20	/	**21000**	/	**4.32**	/
						10000	2	/	/	/					10000	3	/	3	/				
	v2	STX 9 (◊)	ISHA 2019	Chou rouge (CA)	Red cabbage (CA)	1000	57	/	/	/	**56000**	/	**4.75**	/	1000	52	/	50	/	**48000**	/	**4.68**	/
						10000	4	/	/	/					10000	4	/	3	/				
	v2	STX 10 (◊)	ISHA 2019	Pomme (CA)	Apple (CA)	1000	79	/	/	/	**80000**	/	**4.90**	/	1000	82	/	79	/	**78000**	/	**4.89**	/
						10000	9	/	/	/					10000	7	/	7	/				
	v2	STX 11 (◊)	ISHA 2019	Kiwi (CA)	Kiwi (CA)	1000	107	/	/	/	**110000**	/	**5.04**	/	1000	98	/	90	/	**91000**	/	**4.96**	/
						10000	12	/	/	/					10000	11	/	10	/				
	v3	3M08	PV	Légumes ,pour couscous	Vegetables for couscous						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	v3	3M28	PV	Légumes surgelés	Frozen vegetables						**160**	~~160~~	**2.20**	~~2.20~~						**110**	~~180~~	**2.04**	~~2.26~~
	v3	3M29	PV	Poudre de cacao	Powder of cocoa						**<100**	~~<100~~	**<2**	~~<2~~						**<100**	~~<100~~	**<2**	~~<2~~
	v3	3M39	PV	Choucroute	Sauerkaut						**110**	~~110~~	**2.04**	~~2.04~~						**130**	~~110~~	**2.11**	~~2.04~~
	v3	STX 12 (◊)	ISHA 2019	Haricots rouges cuits (CA)	Baked red beans (CA)	1000	29	/	/	/	**29000**	/	**4.46**	/	1000	23	/	23	/	**24000**	/	**4.38**	/
						10000	3	/	/	/					10000	3	/	3	/				
	v3	STX 13 (◊)	ISHA 2019	Haricots verts cuits (CA)	Baked green beans (CA)	1000	62	/	/	/	**60000**	/	**4.78**	/	1000	56	/	54	/	**55000**	/	**4.74**	/
						10000	4	/	/	/					10000	7	/	6	/				
	v3	STX 14 (◊)	ISHA 2019	Salade de fruit (CA)	Fruit salad (CA)	1000	111	/	/	/	**110000**	/	**5.04**	/	1000	104	/	88	/	**88000**	/	**4.94**	/
						10000	10	/	/	/					10000	9	/	9	/				

PU: Presence unquantifiable
EN: Estimated number
Results excluded

UR: Unreadable
NC: naturally contaminated
No information about the result

PV: Previous Validation

Vegetal product										
Interpretable results										
Category	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Substitued value		Mean	Difference
					log RM	Log AM	Log RM	Log AM		
Vegetal product	v1	A2	PV	Mixed salad	1.85	2.00	/	/	1.92	0.15
	v1	D7	PV	Remoulade celery	3.08	3.09	/	/	3.08	0.01
	v1	D19	PV	Mixed salad (carrot, celery)	2.56	2.26	/	/	2.41	-0.30
	v1	R33	PV	Mixed of salad	2.57	2.64	/	/	2.61	0.08
	v1	R35	PV	Remoulade celery	3.66	3.41	/	/	3.54	-0.25
	v1	R36	PV	Carrot tomato	3.70	3.56	/	/	3.63	-0.14
	v1	2007 DD2	PV	Mixed salad	3.96	3.90	/	/	3.93	-0.06
	v2	2007 F1	PV	sliced vegetables	5.40	5.18	/	/	5.29	-0.22
	v2	STX 8 (◊)	ISHA 2019	Gratted carrot (CA)	4.49	4.32	/	/	4.41	-0.17
	v2	STX 9 (◊)	ISHA 2019	Red cabbage (CA)	4.75	4.68	/	/	4.71	-0.07
	v2	STX 10 (◊)	ISHA 2019	Apple (CA)	4.90	4.89	/	/	4.90	-0.01
	v2	STX 11 (◊)	ISHA 2019	Kiwi (CA)	5.04	4.96	/	/	5.00	-0.08
	v3	3M28	PV	Frozen vegetables	2.20	2.04	/	/	2.12	-0.16
	v3	3M39	PV	Sauerkaut	2.04	2.11	/	/	2.08	0.07
	v3	STX 12	ISHA 2019	Baked red beans (CA)	4.46	4.38	/	/	4.42	-0.08
	v3	STX 13	ISHA 2019	Baked green beans (CA)	4.78	4.74	/	/	4.76	-0.04
	v3	STX 14	ISHA 2019	Fruit salad (CA)	5.04	4.94	/	/	4.99	-0.10
								Average category:		-0.08
								Standard deviation of the category:		0.12

Vegetal product										
Non interpretable results										
	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Corrected value		Mean	Difference
					log RM	Log AM	Log RM	Log AM		
Above or below the quantification range	v1	A12	PV	Mix salad (corn, peppers,artichoke)	<1	<1	0.00	0.00	0.00	0.00
	v1	3M14	PV	Mixed salad (potato, ham, tomato)	<1	<1	0.00	0.00	0.00	0.00
	v1	R5	PV	Mixed salad (potato, tuna)	<1	<1	0.00	0.00	0.00	0.00
	v1	R6	PV	Mixed vegetables	<1	<1	0.00	0.00	0.00	0.00
	v1	R7	PV	Mixed salad (grapped cabbage)	<1	<1	0.00	0.00	0.00	0.00
	v2	3M16	PV	Cabbage	<2	<2	1.00	1.00	1.00	0.00
	v3	3M08	PV	Vegetables for couscous	<1	<1	0.00	0.00	0.00	0.00
	v3	3M29	PV	Powder of cocoa	<3	<2	2.00	1.00	1.50	-1.00
< 4CFU/plate	v1	A14	PV	Mixed salad (white cabbage, ham)	1.95	1.48	/	/	1.72	-0.48
	v1	R15	PV	tabbouleh	1.40	1.00	/	/	1.20	-0.40
	v1	2007 A2	PV	Pastas salad	1.48	1.00	/	/	1.24	-0.48
Sample excluded	v1	3M37	PV	Miwed salad (rice, peppers, olive)	UR	<1	/	0.00	/	/
	? *	3M62	PV	Salad	<1	<1	0.00	0.00	0.00	0.00

Pastries and eggs products

Category	Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2									MA: Petrifilm Staph Express								
						Dilution	CFU/ plate				CFU/g		Log CFU/g		Dilution	CFU/ plate		CFU		CFU/g		Log CFU/g	
							Rep1		Rep 2														
							Plate 1	Plate 2	Plate 1	Plate 2	Rep 1	Rep 2	Rep 1	Rep 2		Rep1	Rep 2	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
Pastries and eggs products	eg1	M4	PV	Pâtisserie	Pastry						110	~~130~~	2.04	~~2.11~~						150	~~130~~	2.18	~~2.11~~
	eg1	M5	PV	Pâtisserie	Pastry						6600	~~21000~~	3.82	~~4.32~~						7800	~~11000~~	3.89	~~4.04~~
	eg1	M7	PV	Pâtisserie	Pastry						51000	~~37000~~	4.71	~~4.57~~						30000	~~18000~~	4.48	~~4.26~~
	eg1	B5	PV	Paris Brest	Paris Brest						7500	~~6200~~	3.88	~~3.79~~						5100	~~5600~~	3.71	~~3.75~~
	eg1	B13	PV	Merveilleux chocolat	Merveilleux chocolat						5100	~~6000~~	3.71	~~3.78~~						1200	~~1100~~	3.08	~~3.04~~
	eg1	3M19	PV	Eclair au café	Eclair with coffee						1100	~~1600~~	3.04	~~3.20~~						3600	~~3800~~	3.56	~~3.58~~
	eg1	3M07	PV	Pâtisserie	Pastry						<1000	<1000	<3	~~<3~~						<10	~~10~~	<1	~~<1~~
	eg1	3M13	PV	Pâtisserie	Pastry						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	eg2	A7	PV	Princesse d'été	Princesse d'été						11000	~~13000~~	4.04	~~4.11~~						8000	~~9200~~	3.90	~~3.96~~
	eg2	B3	PV	Carré à la crème	Carré à la crème						UR	~~UR~~	/	/						11000	~~12000~~	4.04	~~4.08~~
	eg2	B12	PV	Chou Parisien vanille	Chou Parisien vanille						820	~~960~~	2.91	~~2.98~~						170	~~160~~	2.23	~~2.20~~
	eg2	C24	PV	Pêche melba	Peach melba						2500	~~2200~~	3.40	~~3.34~~						1200	~~970~~	3.08	~~2.99~~
	eg2	3M11	PV	Crème caramel	Toffee cream						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	eg2	2007 CC1	PV	Flan pâtissier	Flan cake						<10	~~<10~~	<1	~~<1~~						<10	~~<10~~	<1	~~<1~~
	eg2	STX15 (◊)	ISHA 2019	Gâteau chocolat crème anglaise (CA)	Chocolate cake with custard (CA)	1000	89	/	/	/	93000	/	4.97	/	1000	89	/	88	/	89000	~~10~~	4.95	/
						10000	13	/	/	/					10000	10	/	10	/				
	eg2	STX16 (◊)	ISHA 2019	Meringue crème anglaise (CA)	Meringue with custard (CA)	10000	29	/	/	/	300000	/	5.48	/	10000	19	/	19	/	200000	~~8300~~	5.30	/
						100000	4	/	/	/					100000	3	/	3	/				
	eg3	D10	PV	Œufs durs mayonnaise	Hard egg with mayonnaise						300	~~300~~	2.48	~~2.48~~						440	~~590~~	2.64	~~2.77~~
	eg3	3M09	PV	Coule d'œuf	Egg flow						<1	~~<1~~	<0	~~<0~~						1	~~1~~	0.00	~~0.00~~
	eg3	3M10	PV	Coule d'œuf	Egg flow						<1	~~<1~~	<0	~~<0~~						<1	~~<1~~	<0	~~<0~~
	eg3	STX 17 (◊)	ISHA 2019	Mayonnaise (CA)	Mayonnaise (CA)	10000	54	/	/	/	56000	/	4.75	/	10000	44	/	40	/	420000	/	5.62	/
						100000	7	/	/	/					100000	6	/	6	/				
	eg3	STX 18 (◊)	ISHA 2019	Œuf "mimosa" (CA)	Eggs "mimosa" (CA)	1000	107	/	/	/	110000	/	5.04	/	1000	102	/	99	/	98000	/	4.99	/
						10000	11	/	/	/					10000	8	/	8	/				
	eg3	STX 19 (◊)	ISHA 2019	Salade aux œufs (CA)	Eggs salad (CA)	10000	22	/	/	/	220000	/	5.34	/	10000	22	/	22	/	220000	/	5.34	/
						100000	2	/	/	/					100000	2	/	2	/				
	eg3	STX 20 (◊)	ISHA 2019	Œufs pasteurisés (CA)	Pasteurized eggs (CA)	10000	48	/	/	/	480000	/	5.68	/	10000	49	/	49	/	490000	/	5.69	/
						100000	5	/	/	/					100000	5	/	5	/				

PU: Presence unquantifiable
EN: Estimated number
Results excluded

UR: Unreadable
NC: naturally contaminated
No information about the result

PV: Previous Validation

Pastries and eggs products										
Interpretable results										
Category	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Substitued value		Mean	Difference
					log RM	Log AM	Log RM	Log AM		
Pastries and eggs products	eg1	M4	PV	Pastry	2.04	2.18	/	/	2.11	0.13
	eg1	M5	PV	Pastry	3.82	3.89	/	/	3.86	0.07
	eg1	M7	PV	Pastry	4.71	4.48	/	/	4.59	-0.23
	eg1	B5	PV	Paris Brest	3.88	3.71	/	/	3.79	-0.17
	eg1	B13	PV	Merveilleux chocolat	3.71	3.08	/	/	3.39	-0.63
	eg1	3M19	PV	Eclair with coffee	3.04	3.56	/	/	3.30	0.51
	eg2	A7	PV	Princesse d'été	4.04	3.90	/	/	3.97	-0.14
	eg2	B12	PV	Chou Parisien vanille	2.91	2.23	/	/	2.57	-0.68
	eg2	C24	PV	Peach melba	3.40	3.08	/	/	3.24	-0.32
	eg2	STX15 (◊)	ISHA 2019	Chocolate cake with custard	4.97	4.95	/	/	4.96	-0.02
	eg2	STX16	ISHA 2019	Meringue with custard	5.48	5.30	/	/	5.39	-0.18
	eg3	D10	PV	Hard egg with mayonnaise	2.48	2.64	/	/	2.56	0.17
	eg3	STX 17	ISHA 2019	Mayonnaise	4.75	5.62	/	/	5.19	0.88
	eg3	STX 18	ISHA 2019	Eggs "mimosa"	5.04	4.99	/	/	5.02	-0.05
	eg3	STX 19	ISHA 2019	Eggs salad	5.34	5.34	/	/	5.34	0.00
	eg3	STX 20	ISHA 2019	Pasteurized eggs	5.68	5.69	/	/	5.69	0.01
							Average category:			-0.04
							Standard deviation of the category:			0.38

Pastries and eggs products										
Non interpretable results										
	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Corrected value		Mean	Difference
					log RM	Log AM	Log RM	Log AM		
Above or below the quantification range	eg1	3M07	PV	Pastry	<3	<1	2.00	0.00	1.00	-2.00
	eg1	3M13	PV	Pastry	<1	<1	0.00	0.00	0.00	0.00
	eg2	3M11	PV	Toffee cream	<1	<1	0.00	0.00	0.00	0.00
	eg2	2007 CC1	PV	Flan cake	<1	<1	0.00	0.00	0.00	0.00
	eg3	3M09	PV	Egg flow	<0	0.00	0.00	/	0.00	0.00
	eg3	3M10	PV	Egg flow	<0	<0	0.00	0.00	0.00	0.00
Sample excluded	eg2	B3	PV	Carré à la crème	UR	4.04	/	/	/	/

Pet food

Category	Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2									MA: Petrifilm Staph Express								
						Dilution	CFU/ plate				CFU/g or mL		Log CFU/g		Dilution	CFU/ plate		CFU confirmed		CFU/g or mL		Log CFU/g or mL	
							Rep1		Rep 2														
							Plate 1	Plate 2	Plate 1	Plate 2	Rep 1	Rep 2	Rep 1	Rep 2		Rep1	Rep 2	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
Pet food	a1	2007 Z1	PV	Croquette pour chien (CA)	Pellets for dog (CA)						**20000**	~~25000~~	**4.30**	~~4.40~~						**17000**	~~16000~~	**4.23**	~~>1 and <2~~
	a1	2007 C2	PV	Croquette pour animaux	Pellets for animals						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	a1	2007 BB3	PV	Croquette pour animaux	Pellets for animals						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	a1	2007 BB4	PV	Croquette pour animaux	Pellets for animals						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	a1	2007 AA1	PV	Croquette pour chien	Pellets for dog						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	a1	2007 AA2	PV	Croquette pour chat	Pellets for cat						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	a1	2007 AA3	PV	Croquette pour chat	Pellets for cat						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	a1	2007 X1	PV	Croquette pour chat (CA)	Pellets for cat (CA)						**340**	~~360~~	**2.53**	~~2.56~~						**100**	~~70~~	**2.00**	~~1.85~~
	a1	2007 X2	PV	Croquette pour chat (CA)	Pellets for cat (CA)						**4300**	~~4800~~	**3.63**	~~3.68~~						**760**	~~860~~	**2.88**	~~<1~~
	a1	2007 X3	PV	Farine pour poisson (CA)	Flour for fish (CA)						**30 PU**	~~15 PU~~	**1.48**	~~1.18~~						**50**	~~40~~	**<1**	~~<1~~
	a1	2007 E1	PV	Croquette pour animaux (CA)	Pellets for animals (CA)						**410000**	~~450000~~	**5.61**	~~5.65~~						**120000**	~~140000~~	**5.08**	~~<1~~
	a1	2007 E2	PV	Céréals pour animaux (CA)	Cereals for animals (CA)						**26000**	~~22000~~	**4.41**	~~4.34~~						**13000**	~~13000~~	**4.11**	~~4.11~~
	a1	2007 E3	PV	Croquette pour chat (CA)	Pellets for cat (CA)						**2500**	~~2000~~	**3.40**	~~3.30~~						**1000**	~~1200~~	**3.00**	~~3.08~~
	a2	2007 Z2	PV	Déchets de viande pour animaux	Animal meat waste						**21000**	~~22000~~	**4.32**	~~4.34~~						**15000**	~~17000~~	**4.18**	~~4.23~~
	a2	2007 W1	PV	Déchets de viande pour animaux (CA)	Animal meat waste (CA)						**560**	~~630~~	**2.75**	~~2.80~~						**340**	~~340~~	**2.53**	~~2.53~~
	a2	2007 W2	PV	Déchets de viande pour animaux (CA)	Animal meat waste (CA)						**6500**	~~7100~~	**3.81**	~~3.85~~						**2200**	~~2200~~	**3.34**	~~3.34~~
	a2	2007 W3	PV	Déchets de viande pour animaux (CA)	Animal meat waste (CA)						**5300**	~~4900~~	**3.72**	~~3.69~~						**1800**	~~1900~~	**3.26**	~~3.28~~
	a2	STX 21 (◊)	ISHA 2019	Abats de porc (CA)	Pork offal (CA)	1000	62	/	/	/	**60000**	/	**4.78**	/	1000	48	/	47	/	**57000**	/	**4.76**	/
						10000	4	/	/	/					10000	17	/	16	/				
	a2	STX 22 (◊)	ISHA 2019	Abats de bœufs (CA)	Beef offal (CA)	1000	125	/	/	/	**120000**	/	**5.08**	/	1000	89	/	89	/	**90000**	/	**4.95**	/
						10000	10	/	/	/					10000	10	/	10	/				
	a3	2007 B1	PV	Saucisson pour animaux	Dry sausage for animals						**<1000**	~~<1000~~	**<3**	~~<3~~						**<10**	~~<10~~	**<1**	~~<1~~
	a3	2007 AA4	PV	Pâté de viande pour animaux	Meat terrine for animals						**<10**	~~<10~~	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
	a3	2007 Y1	PV	Pâté agneau / légumes (CA)	Lamb and vegetables terrine (CA)						**40 EN**	~~30 EN~~	**1.60**	~~1.48~~						**10**	~~40~~	**1.00**	~~1.60~~
	a3	2007 Y2	PV	Pâté agneau / légumes (CA)	Lamb and vegetables terrine (CA)						**75**	~~155~~	**1.48**	~~1.74~~						**10**	~~<10~~	**1.00**	~~<1~~
	a3	STX 23 (◊)	ISHA 2019	Pâtée pour chien au poulet (CA)	Dog terrine with chicken (CA)	10000	30	/	/	/	**290000**	/	**5.46**	/	10000	29	/	29	/	**300000**	/	**5.48**	/
						100000	2	/	/	/					100000	4	/	4	/				
	a3	STX 24 (◊)	ISHA 2019	Pâtée pour chien au boeuf (CA)	Dog terrine with beef (CA)	1000	58	/	/	/	**58000**	/	**4.76**	/	1000	61	/	59	/	**60000**	/	**4.78**	/
						10000	6	/	/	/					10000	7	/	7	/				
	a3	STX 25 (◊)	ISHA 2019	Pâtée pour chat au poulet (CA)	Cat terrine with chicken (CA)	1000	13	/	/	/	**120000**	/	**5.08**	/	1000	86	/	82	/	**84000**	/	**4.92**	/
						10000	1	/	/	/					10000	11	/	10	/				
	a3	STX 28 (◊)	ISHA 2019	Pâtée pour chien au boeuf (CA)	Dog terrine with salmon (CA)	100	55	/	/	/	**5500**	/	**3.74**	/	100	43	/	42	/	**4300**	/	**3.63**	/
						1000	6	/	/	/					1000	5	/	5	/				
	a3	STX29 (◊)	ISHA 2019	Pâtée pour chat au poulet (CA)	Cat terrine with beef and chicken (CA)	100	78	/	/	/	**7800**	/	**3.89**	/	100	66	/	64	/	**6200**	/	**3.79**	/
						1000	8	/	/	/					1000	5	/	5	/				

PU: Presence unquantifiable
EN: Estimated number
Results excluded

UR: Unreadable
NC: naturally contaminated
No information about the result

PV: Previous Validation

Pet food											
Interpretable results											
Category	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Substitued value		Mean	Difference
					log RM	Log AM	Log RM	Log AM		
Pet food	a1	2007 Z1	PV	Pellets for dog	4.30	4.23	/	/	4.27	-0.07
	a1	2007 X1	PV	Pellets for cat	2.53	2.00	/	/	2.27	-0.53
	a1	2007 X2	PV	Pellets for cat	3.63	2.88	/	/	3.26	-0.75
	a1	2007 E1	PV	Pellets for animals	5.61	5.08	/	/	5.35	-0.53
	a1	2007 E2	PV	Cereals for animals	4.41	4.11	/	/	4.26	-0.30
	a1	2007 E3	PV	Pellets for cat	3.40	3.00	/	/	3.20	-0.40
	a2	2007 Z2	PV	Animal meat waste	4.32	4.18	/	/	4.25	-0.15
	a2	2007 W1	PV	Animal meat waste	2.75	2.53	/	/	2.64	-0.22
	a2	2007 W2	PV	Animal meat waste	3.81	3.34	/	/	3.58	-0.47
	a2	2007 W3	PV	Animal meat waste	3.72	3.26	/	/	3.49	-0.47
	a2	STX 21	ISHA 2019	Pork offal	4.78	4.76	/	/	4.77	-0.02
	a2	STX 22	ISHA 2019	Beef offal	5.08	4.95	/	/	5.02	-0.12
	a3	STX 23 (◊)	PV	Dog terrine with chicken (CA)	5.46	5.48	/	/	5.47	0.01
	a3	STX 24 (◊)	ISHA 2019	Dog terrine with beef (CA)	4.76	4.78	/	/	4.77	0.01
	a3	STX 25 (◊)	ISHA 2019	Cat terrine with chicken (CA)	5.08	4.92	/	/	5.00	-0.15
	a3	STX 28 (◊)	ISHA 2019	Dog terrine with salmon (CA)	3.74	3.63	/	/	3.69	-0.11
	a3	STX29 (◊)	ISHA 2019	Cat terrine with beef and chicken (CA)	3.89	3.79	/	/	3.84	-0.10
							Average category:			-0.26
							Standard deviation of the category:			0.23

Pet food										
Non interpretable results										
	Type	N° sample	Analysis date	Sample	Log (CFU/g)		Corrected value		Mean Difference	
					log RM	Log AM	Log RM	Log AM		
Above or below the quantification range	a1	2007 C2	PV	Pellets for animals	<1	<1	0.00	0.00	0.00	0.00
	a1	2007 BB3	PV	Pellets for animals	<1	<1	0.00	0.00	0.00	0.00
	a1	2007 BB4	PV	Pellets for animals	<1	<1	0.00	0.00	0.00	0.00
	a1	2007 AA1	PV	Pellets for dog	<1	<1	0.00	0.00	0.00	0.00
	a1	2007 AA2	PV	Pellets for cat	<1	<1	0.00	0.00	0.00	0.00
	a1	2007 AA3	PV	Pellets for cat	<1	<1	0.00	0.00	0.00	0.00
	a3	2007 B1	PV	Dry sausage for animals	<3	<1	2.00	0.00	1.00	-2.00
	a3	2007 AA4	PV	Meat terrine for animals	<1	<1	0.00	0.00	0.00	0.00
< 4CFU/plate	a1	2007 X3	PV	Flour for fish	1.48	<1	/	0.00	0.74	-1.48
	a3	2007 Y1	PV	Lamb and vegetables terrine (CA)	1.60	1.00	/	/	1.30	-0.60
	a3	2007 Y2	PV	Lamb and vegetables terrine (CA)	1.48	1.00	/	/	1.24	-0.24

Appendix E:
Accuracy profile – Raw results

Meat products

Matrix (category)	Sample	Code strain/ strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker + RPF)				Final concentration	CFU/Petrifilm				Confirmation STX disk	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Meat products	Ground beef	STA.1.28/ *S.aureus*	L1T1R1	1.00E+02	15	2	/	/	1.5E+02	13	1	/	/	13/1	1.3E+02
			L1T1R2		18	2	/	/	1.8E+02	12	1	/	/	11/1	1.1E+02
			L1T1R3		12	2	/	/	1.3E+02	15	0	/	/	15	1.4E+02
			L1T1R4		16	1	/	/	1.5E+02	10	2	/	/	10/2	1.1E+02
			L1T1R5		12	2	/	/	1.3E+02	11	1	/	/	11/1	1.1E+02
			L1T2R1	5.00E+03	/	122	13	/	1.2E+04	/	89	5	/	82/5	7.9E+03
			L1T2R2		/	115	15	/	1.2E+04	/	111	13	/	102/12	1.0E+04
			L1T2R3		/	104	12	/	1.1E+04	/	91	10	/	87/9	8.7E+03
			L1T2R4		/	118	10	/	1.2E+04	/	107	10	/	104/10	1.0E+04
			L1T2R5		/	109	14	/	1.1E+04	/	101	7	/	95/7	9.3E+03
			L1T3R1	1.00E+05	/		78	10	8.0E+04	/	/	84	7	84/6	8.2E+04
			L1T3R2		/	/	85	9	8.5E+04	/	/	72	10	70/8	7.1E+04
			L1T3R3		/	/	84	12	8.7E+04	/	/	99	8	95/7	9.3E+04
			L1T3R4		/	/	95	14	9.9E+04	/	/	88	6	85/6	8.3E+04
			L1T3R5		/	/	101	10	1.0E+05	/	/	71	7	71/7	7.1E+04
			L2T1R1	1.00E+02	15	2	/	/	1.5E+02	12	2	/	/	12/1	1.2E+02
			L2T1R2		20	1	/	/	1.9E+02	14	1	/	/	13/1	1.3E+02
			L2T1R3		14	3	/	/	1.5E+02	15	2	/	/	14/2	1.4E+02
			L2T1R4		18	2	/	/	1.8E+02	12	2	/	/	12/2	1.3E+02
			L2T1R5		18	2	/	/	1.8E+02	11	1	/	/	10/1	9.1E+01
			L2T2R1	5.00E+03	/	92	9	/	9.2E+03	/	91	8		89/8	8.8E+03
			L2T2R2		/	103	11	/	1.0E+04	/	93	10	/	89/9	8.9E+03
			L2T2R3		/	89	14	/	9.4E+03	/	83	10	/	78/9	7.9E+03
			L2T2R4		/	84	10	/	8.5E+03	/	70	9	/	68/8	6.9E+03
			L2T2R5		/	100	12	/	1.0E+04	/	96	8	/	92/8	9.1E+03
			L2T3R1	1.00E+05	/		82	9	8.3E+04	/	/	87	11	84/10	8.5E+04
			L2T3R2		/	/	85	11	8.7E+04	/	/	84	7	82/7	8.1E+04
			L2T3R3		/	/	99	10	9.9E+04	/	/	89	13	82/12	8.5E+04
			L2T3R4		/	/	96	11	9.7E+04	/	/	75	10	71/10	7.4E+04
			L2T3R5		/	/	101	12	1.0E+05	/	/	82	8	80/8	8.0E+04

Total viable count : 13000 CFU/g

Dairy products

Matrix (category)	Sample	Code strain/strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker + RPF)				Final concentration	CFU/Petrifilm				Confirmation STX disk	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Dairy products	Raw milk cheese	STA.1.25/ *S. aureus*	L1T1R1	1.00E+02	14	2	/	/	1.5E+02	9	1	/	/	9/1	9.0E+01
			L1T1R2		16	1	/	/	1.5E+02	11	0	/	/	10	1.0E+02
			L1T1R3		13	1	/	/	1.3E+02	11	1	/	/	11/1	1.1E+02
			L1T1R4		15	1	/	/	1.5E+02	10	1	/	/	10/1	1.0E+02
			L1T1R5		15	2	/	/	1.5E+02	14	2	/	/	12/2	1.3E+02
			L1T2R1	5.00E+03	/	127	15	/	1.3E+04	/	129	14	/	110/13	1.1E+04
			L1T2R2		/	142	13	/	1.4E+04	/	124	17	/	105/16	1.1E+04
			L1T2R3		/	149	17	/	1.5E+04	/	93	12	/	93/12	9.5E+03
			L1T2R4		/	135	12	/	1.3E+04	/	117	14	/	102/13	1.0E+04
			L1T2R5		/	112	14	/	1.1E+04	/	86	11	/	84/11	8.7E+03
			L1T3R1	1.00E+05	/	/	142	16	1.4E+05	/	/	114	14	101/13	1.1E+05
			L1T3R2		/	/	136	14	1.4E+05	/	/	118	13	104/13	1.1E+05
			L1T3R3		/	/	147	14	1.5E+05	/	/	116	17	108/17	1.1E+05
			L1T3R4		/	/	145	15	1.5E+05	/	/	117	12	110/11	1.1E+05
			L1T3R5		/	/	129	13	1.3E+05	/	/	104	10	101/10	1.0E+05
			L2T1R1	1.00E+02	15	2	/	/	1.5E+02	12	2	/	/	10/2	1.1E+02
			L2T1R2		18	1	/	/	1.7E+02	9	2	/	/	9/2	9.0E+01
			L2T1R3		12	2	/	/	1.3E+02	13	1	/	/	13/1	1.3E+02
			L2T1R4		16	2	/	/	1.6E+02	11	1	/	/	11/1	1.1E+02
			L2T1R5		13	3	/	/	1.5E+02	11	1	/	/	10/1	1.0E+02
			L2T2R1	5.00E+03	/	135	12	/	1.3E+04	/	113	15	/	98/13	1.1E+04
			L2T2R2		/	142	17	/	1.4E+04	/	119	18	/	107/17	1.1E+04
			L2T2R3		/	138	15	/	1.4E+04	/	127	17	/	118/16	1.2E+04
			L2T2R4		/	135	15	/	1.4E+04	/	102	20	/	100/12	1.0E+04
			L2T2R5		/	137	16	/	1.4E+04	/	99	12	/	98/12	1.0E+04
			L2T3R1	1.00E+05	/	/	142	21	1.5E+05	/	/	98	12	92/12	9.5E+04
			L2T3R2		/	/	146	18	1.5E+05	/	/	93	9	90/9	9.0E+04
			L2T3R3		/	/	129	15	1.3E+05	/	/	89	11	85/10	8.6E+04
			L2T3R4		/	/	135	17	1.4E+05	/	/	94	13	91/13	9.5E+04
			L2T3R5		/	/	128	17	1.3E+05	/	/	89	10	89/10	9.0E+04

Total viable count : 230000 CFU/g

Seafood products

Matrix (category)	Sample	Code strain /strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker + RPF)				Final concentration	CFU/Petrifilm				Confirmation STX disk	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Seafood Products	Whiting fillet	STA.1.24/ *S.aureus*	L1T1R1	1.00E+02	16	2	/	/	1.6E+02	16	2	/	/	14/2	1.5E+02
			L1T1R2		18	2	/	/	1.8E+02	14	1	/	/	13/1	1.3E+02
			L1T1R3		15	3	/	/	1.6E+02	18	2	/	/	17/2	1.7E+02
			L1T1R4		21	2	/	/	2.1E+02	13	2	/	/	13/2	1.4E+02
			L1T1R5		19	1	/	/	1.8E+02	16	1	/	/	15/1	1.5E+02
			L1T2R1	5.00E+03	/		22	2	2.2E+04	/	/	24	1	22/1	2.1E+04
			L1T2R2		/	/	24	3	2.5E+04	/	/	17	2	15/2	1.5E+04
			L1T2R3		/	/	19	3	2.0E+04	/	/	24	2	20/2	2.0E+04
			L1T2R4		/	/	18	1	1.7E+04	/	/	22	1	18/1	1.7E+04
			L1T2R5		/	/	20	2	2.0E+04	/	/	24	3	22/3	2.1E+04
			L1T3R1	1.00E+05	/	/	>150	21	2.1E+05	/	/	>150	16	16	1.6E+05
			L1T3R2		/	/	>150	19	1.9E+05	/	/	>150	22	22	2.2E+05
			L1T3R3		/	/	>150	20	2.0E+05	/	/	>150	17	17/1	1.7E+05
			L1T3R4		/	/	>150	20	2.0E+05	/	/	>150	14	14	1.4E+05
			L1T3R5		/	/	>150	17	1.7E+05	/	/	>150	14	14	1.4E+05
			L2T1R1	1.00E+02	16	2	/	/	1.6E+02	14	1	/	/	14/1	1.4E+02
			L2T1R2		16	3	/	/	1.7E+02	19	1	/	/	18/1	1.7E+02
			L2T1R3		19	3	/	/	2.0E+02	13	2	/	/	13/2	1.3E+02
			L2T1R4		20	2	/	/	2.0E+02	15	2	/	/	14/2	1.5E+02
			L2T1R5		15	1	/	/	1.5E+02	15	1	/	/	15/1	1.5E+02
			L2T2R1	5.00E+03	/	/	19	1	1.8E+04	/	/	24	1	20/1	1.9E+04
			L2T2R2		/	/	22	2	2.2E+04	/	/	31	2	28/2	2.7E+04
			L2T2R3		/	/	20	2	2.0E+04	/	/	20	2	18/2	1.8E+04
			L2T2R4		/	/	21	3	2.2E+04	/	/	19	3	19/2	1.9E+04
			L2T2R5		/	/	22	2	2.2E+04	/	/	23	2	20/2	2.0E+04
			L2T3R1	1.00E+05	/	/	>150	18	1.8E+05	/	/	>150	14	13	1.3E+05
			L2T3R2		/	/	>150	22	2.2E+05	/	/	>150	20	19	1.9E+05
			L2T3R3		/	/	>150	21	2.1E+05	/	/	>150	12	12	1.2E+05
			L2T3R4		/	/	>150	19	1.9E+05	/	/	>150	12	11	1.1E+05
			L2T3R5		/	/	>150	19	1.9E+05	/	/	>150	10	10	1.0E+05

Total viable count : 8500 CFU/g

Vegetal products

Matrix (category)	Sample	Code strain /strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker + RPF)				Final concentration	CFU/Petrifilm				Confirmation STX disk	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Vegetal products	Grated carrot	STA.1.26 / *S. aureus*	L1T1R1	5.00E+02	17	2	/	/	1.7E+02	9	1	/	/	8/1	8.0E+01
			L1T1R2		15	2	/	/	1.5E+02	11	1	/	/	11/1	1.1E+02
			L1T1R3		19	3	/	/	2.0E+02	8	2	/	/	8/2	8.0E+01
			L1T1R4		20	2	/	/	2.0E+02	10	1	/	/	9/1	9.0E+01
			L1T1R5		22	3	/	/	2.3E+02	12	1	/	/	11/1	1.1E+02
			L1T2R1	5.00E+03	/	135	12	/	1.3E+04	/	94	8	/	83/7	8.2E+03
			L1T2R2		/	142	18	/	1.5E+04	/	77	9	/	71/9	7.3E+03
			L1T2R3		/	128	15	/	1.3E+04	/	77	7	/	75/7	7.5E+03
			L1T2R4		/	139	19	/	1.4E+04	/	76	8	/	68/8	6.9E+03
			L1T2R5		/	145	15	/	1.5E+04	/	75	5	/	72/5	7.0E+03
			L1T3R1	1.00E+05	/		>150	19	1.9E+05	/	/	99	9	99/7	9.6E+04
			L1T3R2		/	/	>150	17	1.7E+05	/	/	100	10	98/9	9.7E+04
			L1T3R3		/	/	>150	17	1.7E+05	/	/	92	9	89/8	8.8E+04
			L1T3R4		/	/	>150	16	1.6E+05	/	/	94	13	93/13	9.6E+04
			L1T3R5		/	/	>150	20	2.0E+05	/	/	95	9	84/8	8.4E+04
			L2T1R1	5.00E+02	14	1	/	/	1.4E+02	12	1	/	/	11/1	1.1E+02
			L2T1R2		10	2	/	/	1.1E+02	14	1	/	/	13/1	1.3E+02
			L2T1R3		13	0	/	/	1.2E+02	11	0	/	/	11/0	1.0E+02
			L2T1R4		12	1	/	/	1.2E+02	10	1	/	/	10/1	1.0E+02
			L2T1R5		12	1	/	/	1.2E+02	12	1	/	/	10/1	1.0E+02
			L2T2R1	5.00E+03	/	122	21	/	1.3E+04	/	90	7	/	87/6	8.7E+03
			L2T2R2		/	135	15	/	1.4E+04	/	90	6	/	88/4	8.8E+03
			L2T2R3		/	128	17	/	1.3E+04	/	77	10	/	75/10	7.5E+03
			L2T2R4		/	118	18	/	1.2E+04	/	81	8	/	79/7	7.9E+03
			L2T2R5		/	142	18	/	1.5E+04	/	81	10	/	78/10	7.8E+03
			L2T3R1	1.00E+05	/		>150	18	1.8E+05	/	/	86	11	77/10	7.7E+04
			L2T3R2		/	/	>150	21	2.1E+05	/	/	108	14	102/11	1.0E+05
			L2T3R3		/	/	>150	15	1.5E+05	/	/	106	4	97/3	9.7E+04
			L2T3R4		/	/	>150	12	1.2E+05	/	/	85	8	74/7	7.4E+04
			L2T3R5		/	/	>150	19	1.9E+05	/	/	85	5	78/3	7.8E+04

Total viable count : 1200 CFU/g

Pastries and egg products

Matrix (category)	Sample	Code strain/ strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker + RPF)				Final concentration	CFU/Petrifilm				Confirmation STX disk	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Pastries and eggs products	Pasteurized whole egg	STA.1.8/ *S. aureus*	L1T1R1	1.00E+02	18	2	/	/	**1.8E+02**	18	1	/	/	16/1	**1.5E+02**
			L1T1R2		20	2	/	/	**2.0E+02**	14	2	/	/	14/2	**1.5E+02**
			L1T1R3		19	1	/	/	**1.8E+02**	16	1	/	/	15/1	**1.5E+02**
			L1T1R4		21	3	/	/	**2.2E+02**	17	0	/	/	17	**1.5E+02**
			L1T1R5		20	2	/	/	**2.0E+02**	19	1	/	/	18/1	**1.7E+02**
			L1T2R1	5.00E+03	/	99	12	/	**1.0E+04**	/	106	9	/	98/9	**9.7E+03**
			L1T2R2		/	121	10	/	**1.2E+04**	/	92	12	/	84/11	**8.6E+03**
			L1T2R3		/	113	15	/	**1.2E+04**	/	91	9	/	88/8	**8.7E+03**
			L1T2R4		/	118	17	/	**1.2E+04**	/	79	11	/	75/10	**7.7E+03**
			L1T2R5		/	121	12	/	**1.2E+04**	/	99	12	/	98/12	**1.0E+04**
			L1T3R1	1.00E+05	/	/	122	12	**1.2E+05**	/	/	102	11	97/10	**9.7E+04**
			L1T3R2		/	/	148	10	**1.4E+05**	/	/	88	11	85/11	**8.7E+04**
			L1T3R3		/	/	115	15	**1.2E+05**	/	/	108	12	108/12	**1.1E+05**
			L1T3R4		/	/	119	15	**1.2E+05**	/	/	104	10	102/9	**1.0E+05**
			L1T3R5		/	/	132	13	**1.3E+05**	/	/	104	9	100/9	**9.9E+04**
			L2T1R1	1.00E+02	18	2	/	/	**1.8E+02**	18	3	/	/	17/3	**1.8E+02**
			L2T1R2		18	2	/	/	**1.8E+02**	18	1	/	/	18/1	**1.7E+02**
			L2T1R3		18	3	/	/	**1.9E+02**	19	2	/	/	18/2	**1.8E+02**
			L2T1R4		15	1	/	/	**1.5E+02**	17	2	/	/	17/2	**1.7E+02**
			L2T1R5		19	2	/	/	**1.9E+02**	13	0	/	/	13	**1.2E+02**
			L2T2R1	5.00E+03	/	112	9	/	**1.1E+04**	/	81	10	/	78/10	**8.0E+03**
			L2T2R2		/	126	13	/	**1.3E+04**	/	113	7	/	110/7	**1.1E+04**
			L2T2R3		/	102	11	/	**1.0E+04**	/	89	9	/	85/9	**8.5E+03**
			L2T2R4		/	118	15	/	**1.2E+04**	/	97	9	/	90/9	**9.0E+03**
			L2T2R5		/	109	10	/	**1.1E+04**	/	95	8	/	92/8	**9.1E+03**
			L2T3R1	1.00E+05	/		111	12	**1.1E+05**	/	/	101	9	97/10	**9.7E+04**
			L2T3R2		/	/	122	9	**1.2E+05**	/	/	98	13	95/12	**9.7E+04**
			L2T3R3		/	/	109	10	**1.1E+05**	/	/	108	7	104/7	**1.0E+05**
			L2T3R4		/	/	124	12	**1.2E+05**	/	/	109	10	108/10	**1.1E+05**
			L2T3R5		/	/	113	12	**1.1E+05**	/	/	92	14	90/14	**9.5E+04**

Total viable count : <10 CFU/g

Petfood

Matrix (category)	Sample	Code strain /strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker + RPF)				Final concentration	CFU/Petrifilm				Confirmation STX disk	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Pet food	Dog terrine	STA.1.29/ *S. aureus*	L1T1R1	1.00E+02	15	2	/	/	1.5E+02	10	1	/	/	9/1	9.0E+01
			L1T1R2		17	2	/	/	1.7E+02	11	2	/	/	10/2	1.1E+02
			L1T1R3		18	2	/	/	1.8E+02	9	1	/	/	9/1	9.0E+01
			L1T1R4		16	2	/	/	1.6E+02	9	1	/	/	9/1	9.0E+01
			L1T1R5		16	2	/	/	1.6E+02	12	1	/	/	11/1	1.1E+02
			L1T2R1	5.00E+03	/	/	19	3	2.0E+04	/	/	21	2	19/2	1.9E+04
			L1T2R2		/	/	24	3	2.5E+04	/	/	17	3	17/2	1.7E+04
			L1T2R3		/	/	16	2	1.6E+04	/	/	19	1	19/1	1.8E+04
			L1T2R4		/	/	22	3	2.3E+04	/	/	16	2	16/2	1.6E+04
			L1T2R5		/	/	23	4	2.5E+04	/	/	17	0	17/0	1.5E+04
			L1T3R1	1.00E+05	/	/	>150	24	2.4E+05	/	/	>150	16	16	1.6E+05
			L1T3R2		/	/	>150	19	1.9E+05	/	/	>150	16	15	1.5E+05
			L1T3R3		/	/	>150	22	2.2E+05	/	/	>150	20	20	2.0E+05
			L1T3R4		/	/	>150	23	2.3E+05	/	/	>150	16	14	1.4E+05
			L1T3R5		/	/	>150	23	2.3E+05	/	/	>150	16	15	1.5E+05
			L2T1R1	1.00E+02	14	2	/	/	1.5E+02	10	2	/	/	9/2	9.0E+01
			L2T1R2		18	2	/	/	1.8E+02	12	1	/	/	11/1	1.1E+02
			L2T1R3		16	2	/	/	1.6E+02	11	1	/	/	11/1	1.1E+02
			L2T1R4		15	3	/	/	1.6E+02	11	2	/	/	11/2	1.2E+02
			L2T1R5		18	1	/	/	1.7E+02	14	0	/	/	13/0	1.2E+02
			L2T2R1	5.00E+03	/	/	21	2	2.1E+04	/	/	13	2	12/1	1.2E+04
			L2T2R2		/	/	18	3	1.9E+04	/	/	18	2	15/2	1.5E+04
			L2T2R3		/	/	19	3	2.0E+04	/	/	13	3	13/3	1.3E+04
			L2T2R4		/	/	20	2	2.0E+04	/	/	17	1	16/1	1.5E+04
			L2T2R5		/	/	20	2	2.0E+04	/	/	24	2	20/2	2.0E+04
			L2T3R1	1.00E+05	/	/	>150	18	1.8E+05	/	/	>150	16	15	1.5E+05
			L2T3R2		/	/	>150	15	1.5E+05	/	/	>150	15	15	1.5E+05
			L2T3R3		/	/	>150	15	1.5E+05	/	/	>150	16	14	1.4E+05
			L2T3R4		/	/	>150	16	1.6E+05	/	/	>150	17	15	1.5E+05
			L2T3R5		/	/	>150	19	1.9E+05	/	/	>150	13	13	1.3E+05

Total viable count : <10 CFU/g

Appendix F:
Inclusivity and exclusivity – raw results

Inclusivity previous validation study

Strains	Origin	Results after 1st incubation	Results after disk insertion
Staphylococcus aureus **(Characteristic colonies on Baird-Parker agar medium)**	ATCC 6538	red-violet	pink zone
	ATCC 9144	red-violet	pink zone
	Dairy product	red-violet	pink zone
	Meat product	red-violet	pink zone
	Raw milk	red-violet	pink zone
	Raw milk cheese	red-violet	pink zone
	Dairy product	red-violet	pink zone
	Dairy product	red-violet	pink zone
	Raw milk cheese	red-violet	pink zone
	Raw milk cheese	red-violet	pink zone
	Chipolatas	red-violet	pink zone
	Meat product	red-violet	pink zone
	Meat product	red-violet	pink zone
	Meat product	red-violet	pink zone
	Meat product	red-violet	pink zone
	Meat product	red-violet	pink zone
	CIP 7625	red-violet	pink zone
	Cake	red-violet	pink zone
	Cake	red-violet	pink zone
	Smoked salmon	red-violet	pink zone
	Milk	red-violet	pink zone
	CIP 53154	red-violet	pink zone
	Fish filet	red-violet	pink zone
	Salad	red-violet	pink zone
	Toast	red-violet	pink zone
Staphylococcus aureus **(No characteristic colonies on Baird-Parker agar medium)**	Meat product	red-violet	pink zone
	Poultry liver	red-violet	pink zone
	Goat milk	red-violet	pink zone
Staphylococcus hyicus	Collection	red-violet	pink zone
Staphylococcus hyicus	Meat product	black	pink zone
Staphylococcus hyicus	Meat product	black	pink zone
Staphylococcus hyicus	Meat product	black	pink zone
Staphylococcus hyicus	Collection	black	pink zone
Staphylococcus intermedius	Collection	red-violet	pink zone
Staphylococcus intermedius	Collection	violet	pink zone

Exclusivity previous validation study

Strains		Origin	Results after 1st incubation	Results after disk insertion
Coagulase negative *Staphylococcus* strains	*St.xylosus*	Munster (cheese)	black	no pink zone
	St.epidermidis	Dairy product	no colonie	/
	St.epidermidis	ATCC 12228	no colonie	/
	St.scuiri	Collection	no colonie	/
	St.saprophyticus	Collection	black	no pink zone
	St.cohnii	Smoked salmon	no colonie	/
	St.epidermidis	Clinical	no colonie	/
	St.epidermidis	Smoked salmon	no colonie	/
	St.epidermidis	Collection	no colonie	/
	St.simulans	Salad	black	no pink zone
	St.warneri	Ham	no colonie	/
	St.warneri	Bacon	no colonie	/
	St.warneri	Bayonne ham	no colonie	/
	St.xylosus	Salad	black	no pink zone
	St.xylosus	Offal	black	no pink zone
Other genus	*Listeria innocua*	Smoked fish	blue	no pink zone
	Enterococcus faecalis	Meat product	no colonie	/
	Micrococcus spp	Vegetables	no colonie	/
	E.coli	Dairy product	no colonie	/
	Micrococcus spp	Environment	no colonie	/
	Micrococcus luteus	Environment	no colonie	/
	Micrococcus roseus	Environment	no colonie	/
	Enterococcus faecalis	Eggs	blue-green	no pink zone
	Enterococcus faecium	ATCC 3286	blue-green	no pink zone
	Enterococcus faecium	CIP 5433	no colonie	/
	Enterococcus durans	Meat product	no colonie	/

Inclusivity renewal study 2019

Strains	Reference ISHA	Origin	PCA (CFU/plate)	NF EN ISO 6888-2	Petrifilm STX method			
				Baird Parker + RPF (CFU/plate)	Results after 1st incubation		Results after disk insertion	
					CFU/plate	Color of the colonies	CFU/plate	Color of the halo
Staphylococcus aureus (Characteristic colonies on Baird-Parker agar medium)	STA.1.5	Superface	68	56	52	violet	49	pink zone
	STA.1.6	Water	84	85	78	violet	74	pink zone
	STA.1.7	Biscuit factory	59	54	48	violet	46	pink zone
	STA.1.8	Biscuit factory	77	60	62	violet	59	pink zone
	STA.1.9	Biscuit factory	92	87	85	violet	82	pink zone
	STA.1.10	Biscuit factory	56	58	54	violet	53	pink zone
	STA.1.23	Raw milk cheese	85	86	79	violet	75	pink zone
	STA.1.24	Shrimps	66	64	54	violet	50	pink zone
	STA.1.25	Saint Mathurin with raw milk	79	72	64	violet	62	pink zone
	STA.1.26	Paella rice	58	49	38	violet	38	pink zone
	STA.1.27	Rabit and leek terrine	62	54	55	violet	53	pink zone
	STA.1.28	Chicken leg	87	78	76	violet	74	pink zone
	STA.1.29	Turkey carcass	46	42	41	violet	41	pink zone
	STA.1.30	Chicken ground meat	75	72	60	violet	59	pink zone
	STA.1.31	Beef ground meat	66	60	48	violet	48	pink zone

Exclusivity renewal study 2019

Strains	Reference ISHA	Origin	PCA (CFU/plate)	NF EN ISO 6888-1		Petrifilm STX method			
				Baird Parker + RPF (CFU/plate))	Coagulase test	Results after 1st incubation		Results after disk insertion	
						CFU/plate	Color of the colonies	CFU/plate	Color of the halo
Staphylococcus haemolyticus (Characteristic colonies on Baird-Parker)	STA.3.1	Surface sample	101	92*	Negative	64	Black	/	no pink zone
Staphylococcus piscifermentans (Characteristic colonies on Baird-Parker)	STA.4.1	Automotive air conditioning evaporator	87	89*	Negative	67	Black	/	no pink zone
Staphylococcus epidermidis (Characteristic colonies on Baird-Parker)	STA.2.1	Milk products	85	82	Negative	74	/	/	/
Streptococcus bovis	STR.1.1	Milk	96	No colonie	/	No colonie	/	/	/
Klebsiella planticola	KLE.3.1	Sausage	107	No colonie	/	No colonie	/	/	/

*Black colony without halo

Appendix G:

Interlaboratory study – raw results

Number of typical colonies enumerated

Level 0

Laboratories (i)	Reference method (spreading on Baird Parker + RPF)																	
	Sample 1									Sample 8								
	-1		-2		-3		-4		Result (CFU/ml)	-1		-2		-3		-4		Result (CFU/ml)
	1 ml par Plate		1 ml par Plate		1 ml par Plate		1 ml par Plate			1 ml par Plate		1 ml par Plate		1 ml par Plate		1 ml par Plate		
	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2		Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	
A	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
B	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
C	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
D	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
E	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
F	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
G	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
H	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
I	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
J	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
K	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
L	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10
M	14	11	11	17	11	12	16	28		4	4	104	21	52	76	28	64	
Expert laboratory	0	0	0	0	0	0	0	0	<10	0	0	0	0	0	0	0	0	<10

Laboratories (i)	Alternative method (Petrifilm Staph Express)																	
	Sample 1									Sample 8								
	-1		-2		-3		-4		Result (CFU/ml)	-1		-2		-3		-4		Result (CFU/ml)
	1 ml per petrifilm		1 ml per petrifilm		1 ml per petrifilm		1 ml per petrifilm			1 ml per petrifilm		1 ml per petrifilm		1 ml per petrifilm		1 ml per petrifilm		
A	0		0		0		0		<10	0		0		0		0		<10
B	0		0		0		0		<10	0		0		0		0		<10
C	0		0		0		0		<10	0		0		0		0		<10
D	0		0		0		0		<10	0		0		0		0		<10
E	0		0		0		0		<10	0		0		0		0		<10
F	0		0		0		0		<10	0		0		0		0		<10
G	0		0		0		0		<10	0		0		0		0		<10
H	0		0		0		0		<10	0		0		0		0		<10
I	0		0		0		0		<10	0		0		0		0		<10
J	0		0		0		0		<10	0		0		0		0		<10
K	0		0		0		0		<10	0		0		0		0		<10
L	0		0		0		0		<10	0		0		0		0		<10
M	0		0		0		0		<10	0		0		0		0		<10
Expert laboratory	0		0		0		0		<10	0		0		0		0		<10

ILL : Unreadable INC : uncountable
NC : noncoherent

Number of typical colonies enumerated Initial contamination : 81CFU/mL

Level 1

Laboratories (i)	Reference method (spreading on Baird Parker + RPF)																	
	Sample 2									Sample 7								
	-1		-2		-3		-4		Result (CFU/ml)	-1		-2		-3		-4		Result (CFU/ml)
	1 ml par Plate		1 ml par Plate		1 ml par Plate		1 ml par Plate			1 ml par Plate		1 ml par Plate		1 ml par Plate		1 ml par Plate		
	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2		Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	
A	8	6	2	6	0	0	0	0	**70**	5	6	1	3	0	0	0	0	**55**
B	9	12	1	1	0	0	0	0	**105**	2	11	1	1	0	0	0	0	**65**
C	13	4	1	1	0	0	0	0	**85**	4	14	2	0	1	0	0	0	**90**
D	5	10	0	3	1	0	0	0	**75**	7	8	2	1	0	0	0	0	**75**
E	10	6	1	0	0	0	0	0	**80**	8	6	2	2	0	0	0	0	**70**
F	4	7	1	0	0	0	0	0	**55**	6	6	2	0	0	0	0	0	**60**
G	10	7	0	4	0	0	0	0	**85**	11	2	0	0	0	0	0	0	**65**
H	13	7	2	0	0	0	0	0	**100**	12	40	ILL	ILL	0	0	0	0	**260**
I	12	11	0	0	0	0	0	0	**105**	13	8	0	0	0	0	0	0	**95**
J	11	10	0	1	0	0	0	0	**100**	8	12	0	0	0	0	0	0	**91**
K	7	14	0	1	0	0	0	0	**105**	14	6	2	3	0	0	0	0	**100**
L	9	9	0	0	0	0	0	0	**90**	11	13	1	1	0	0	0	0	**118**
M	3	4	5	3	18	16	5	3		0	1	0	5	3	2	0	2	
Expert laboratory	13	6	1	1	0	0	0	0	**95**	3	3	1	1	0	0	0	0	**30**

Laboratories (i)	Alternative method (Petrifilm Staph Express)													
	Sample 2					Sample 7								
	-1	-2	-3	-4	Result (CFU/ml)	-1	-2	-3	-4	Result (CFU/ml)				
	1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm		1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm					
A	8	1	0	0	**80**	10	1	0	0	**100**				
B	4	0	1	0	**40**	9	0	0	0	**90**				
C	4	0	0	0	**40**	9	0	0	0	**90**				
D	7	0	0	0	**70**	9	1	0	0	**90**				
E	4	0	0	0	**40**	4	0	0	0	**40**				
F	7	0	0	0	**70**	6	1	0	0	**60**				
G	3	2	0	0	**30**	4	0	0	0	**40**				
H	8	2	0	0	**80**	6	2	0	0	**60**				
I	8	3	0	0	**80**	18	1	0	0	**173**				
J	12	0	0	0	**109**	7	0	0	0	**70**				
K	5	0	0	0	**50**	5	0	0	0	**50**				
L	9	0	0	0	**90**	6	0	0	0	**60**				
M	8	0	0	0	**80**	6	0	0	0	**60**				
Expert laboratory	4	0	0	0	**40**	4	0	0	0	**40**				

ILL : Unreadable INC : uncountable

NC : noncoherent

Number of typical colonies enumerated Initial contamination : 810 CFU/mL

Level 2

Laboratories (i)	Reference method (spreading on Baird Parker + RPF)																	
	Sample 3									Sample 6								
	-1		-2		-3		-4		Result (CFU/ml)	-1		-2		-3		-4		Result (CFU/ml)
	1 ml par Plate		1 ml par Plate		1 ml par Plate		1 ml par Plate			1 ml par Plate		1 ml par Plate		1 ml par Plate		1 ml par Plate		
	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2		Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	
A	74	86	0	11	0	0	0	0	**777**	80	95	8	8	0	0	0	0	**868**
B	55	60	4	7	1	1	0	0	**573**	71	66	4	9	0	0	0	0	**682**
C	100	98	14	14	0	1	0	0	**1027**	100	104	13	8	2	0	0	1	**1023**
D	108	90	11	11	1	0	0	0	**1000**	109	99	7	12	1	0	1	0	**1032**
E	93	74	9	8	1	0	1	0	**836**	82	84	8	5	1	1	0	0	**814**
F	100	91	10	17	1	0	0	0	**991**	86	87	9	8	1	0	0	0	**864**
G	85	103	8	9	0	0	0	0	**932**	70	79	4	6	1	0	0	0	**723**
H	75	57	**ILL**	**ILL**	0	1	0	0	**660**	90	85	13	8	3	0	0	0	**875**
I	97	83	10	8	0	0	0	0	**900**	98	97	9	10	0	0	0	0	**973**
J	78	72	4	5	0	0	0	0	**723**	99	>100	6	3	0	0	0	0	**900**
K	95	85	5	11	0	1	0	0	**891**	103	108	8	18	1	1	0	1	**1077**
L	99	95	8	7	0	2	1	0	**950**	112	90	10	9	2	1	0	0	**1005**
M	19	5	13	12	6	8	36	40		11	27	11	16	6	11	8	24	
Expert laboratory	68	64	7	3	0	0	0	0	**645**	58	66	4	8	0	0	0	0	**618**

Laboratories (i)	Alternative method (Petrifilm Staph Express)									
	Sample 3					Sample 6				
	-1	-2	-3	-4	Result (CFU/ml)	-1	-2	-3	-4	Result (CFU/ml)
	1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm		1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm	
A	56	9	1	0	**591**	72	7	2	0	**718**
B	46	9	0	0	**500**	54	14	0	1	**618**
C	54	10	1	0	**582**	74	4	0	0	**709**
D	78	8	2	0	**782**	84	7	1	0	**827**
E	55	6	0	0	**555**	69	6	0	0	**682**
F	69	5	0	0	**673**	72	6	0	0	**709**
G	62	7	0	0	**627**	69	5	0	0	**673**
H	89	12	1	1	**918**	84	11	2	0	**864**
I	63	3	1	0	**600**	85	10	2	0	**864**
J	53	4	0	0	**518**	53	6	0	0	**536**
K	68	7	0	0	**682**	64	4	0	0	**618**
L	68	7	0	0	**682**	73	8	1	0	**736**
M	74	7	1	0	**736**	60	6	1	0	**600**
Expert laboratory	35	6	1	0	**373**	60	6	0	0	**600**

ILL : Unreadable INC : uncountable

NC : noncoherent

Number of typical colonies enumerated **Initial contamination : 8100 CFU/mL**

Level 3

Laboratories (i)	Reference method (spreading on Baird Parker + RPF)																	
	Sample 4									Sample 5								
	-1		-2		-3		-4		Result (CFU/ml)	-1		-2		-3		-4		Result (CFU/ml)
	1 ml par Plate		1 ml par Plate		1 ml par Plate		1 ml par Plate			1 ml par Plate		1 ml par Plate		1 ml par Plate		1 ml par Plate		
	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2		Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	
A	INC	INC	88	86	9	13	1	1	**8909**	INC	INC	98	115	8	7	3	0	**10364**
B	INC	INC	80	77	10	11	4	2	**8091**	INC	INC	73	68	9	9	1	0	**7227**
C	>>100	>>100	137	127	14	18	1	2	**15909**	>>100	>>100	121	110	16	11	0	4	**14091**
D	>300	>300	122	102	8	18	2	1	**11364**	>300	>300	109	111	12	10	3	0	**11364**
E	>100	>100	84	74	7	9	0	0	**7909**	>100	>100	82	57	8	5	0	0	**6909**
F	INC	INC	81	91	10	6	0	0	**8545**	INC	INC	100	93	11	7	1	0	**9591**
G	>100	>100	90	70	6	7	1	0	**7864**	>100	>100	87	86	9	8	0	1	**8636**
H	INC	INC	INC	INC	31	26	0	0	**25909**	INC	INC	INC	INC	14	47	3	1	**29545**
I	>100	>100	82	101	11	9	0	1	**9227**	>100	>100	118	97	9	10	0	0	**10636**
J	>100	>100	84	92	16	7	1	0	**9045**	>100	>100	102	112	10	8	0	0	**10545**
K	>100	>100	88	92	4	3	1	0	**8500**	>100	>100	65	84	9	18	0	2	**8000**
L	INC	INC	110	97	10	12	0	3	**10409**	INC	INC	105	99	6	13	2	1	**10136**
M	224	136	79	46	25	16	24	22		36	8	12	5	4	4	11	7	
Expert laboratory	>100	>100	63	66	7	11	0	1	**6682**	>100	>100	65	59	13	10	1	0	**6682**

Laboratories (i)	Alternative method (Petrifilm Staph Express)									
	Sample 4					Sample 5				
	-1	-2	-3	-4	Result (CFU/ml)	-1	-2	-3	-4	Result (CFU/ml)
	1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm		1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm	1 ml per petrifilm	
A	INC	81	5	0	**7818**	INC	44	7	0	**4636**
B C D E F G H I	INC	55	5	2	**5455**	INC	50	3	0	**4818**
	>150	96	11	2	**9727**	>150	78	6	1	**7636**
	>300	86	8	2	**8545**	>300	102	11	2	**10273**
	>300	54	6	0	**5455**	>300	59	5	0	**5818**
	INC	44	1	0	**4091**	INC	60	9	0	**6273**
	INC	66	5	0	**6455**	INC	76	7	2	**7545**
	INC	83	10	2	**8455**	INC	84	14	0	**8909**
	>150	107	10	0	**10636**	>150	105	6	0	**10091**
J	>300	51	6	0	**5182**	>300	52	4	1	**5091**
K	475	65	4	0	**6273**	528	73	5	1	**7091**
L	INC	85	7	0	**8364**	INC	76	6	2	**7455**
M	INC	86	5	2	**8273**	INC	84	11	2	**8636**
Expert laboratory	>150	62	5	0	**6091**	>150	64	4	1	**6182**

ILL : Unreadable INC : uncountable

NC : noncoherent

Appendix H : Artificial contaminations

Category	Type	N°sample	Analysis date	Sample	Artificial contamination			
					Code	Strain	Origin	Injury protocol
Meat products	m3	STX 1	ISHA 2019	Smoked bacon	STA.1.28	*Staphylococcus aureus*	Chicken leg without antibiotic	Seeding 48h at 5±3°C
	m3	STX 2	ISHA 2019	Bacon				
Dairy products	d1	STX 3	ISHA 2019	Saint Nectaire	STA.1.25	*Staphylococcus aureus*	Saint Mathurin with raw milk	Seeding 48h at 5±3°C
	d1	STX 4	ISHA 2019	Reblochon				
	d3	2007 Y3	Previous validation	Strawberry ice	No available information about the strain and the protocol of contamination used by IPL			
Seafood products	s1	STX 5	ISHA 2019	Whiting filet	STA.1.24	*Staphylococcus aureus*	Shrimps	Seeding 72h at 5±3°C
	s2	STX 6	ISHA 2019	Baked mussels				
	s2	STX 7	ISHA 2019	Baked mussels				
Vegetal products	v1	2007 DD2	Previous validation	Mixed salad	No available information about the strain and the protocol of contamination used by IPL			
	v2	2007 F1	Previous validation	Sliced vegetables	No available information about the strain and the protocol of contamination used by IPL			
	v2	STX 8	ISHA 2019	Grated carrot	STA.1.27	*Staphylococcus aureus*	Rabbit with leek	Seeding 72h at 5±3°C
	v2	STX 9	ISHA 2019	Reb cabbage				
	v2	STX 10	ISHA 2019	Apple	STA.1.26	*Staphylococcus aureus*	Paella rice	Seeding 72h at 5±3°C
	v2	STX 11	ISHA 2019	Kiwi				
	v3	STX 12	ISHA 2019	Baked red beans				
	v3	STX 13	ISHA 2019	Baked green beans	STA.1.37	*Staphylococcus aureus*	Tabbouleh	Seeding 72h at 5±3°C
	v3	STX 14	ISHA 2019	Fruit salad				
Pastries and eggs products	eg2	STX 15	ISHA 2019	Chocolate cake with custard	STA.1.7	*Staphylococcus aureus*	Biscuit factory	Seeding 72h at 5±3°C
	eg2	STX 16	ISHA 2019	Meringue with custard				
	eg3	STX 17	ISHA 2019	Mayonnaise				
	eg3	STX 18	ISHA 2019	Eggs "mimosa"	STA.1.8	*Staphylococcus aureus*	Biscuit factory	Seeding 72h at 5±3°C
	eg3	STX 19	ISHA 2019	Eggs salad	STA.1.38	*Staphylococcus aureus*	Eggs flow	Seeding 72h at 5±3°C
	eg3	STX 20	ISHA 2019	Pasteurized eggs				
Petfood	a1	2007 Z1	Previous validation	Pellets for dog	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 X1	Previous validation	Pellets for cat	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 X2	Previous validation	Pellets for cat	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 X3	Previous validation	Flour for fish	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 E1	Previous validation	Pellets for animals	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 E2	Previous validation	Cereals for animals	No available information about the strain and the protocol of contamination used by IPL			
	a1	2007 E3	Previous validation	Pellets for cat	No available information about the strain and the protocol of contamination used by IPL			
	a2	2007 W1	Previous validation	Animal meat waste	No available information about the strain and the protocol of contamination used by IPL			
	a2	2007 W2	Previous validation	Animal meat waste	No available information about the strain and the protocol of contamination used by IPL			
	a2	2007 W3	Previous validation	Animal meat waste	No available information about the strain and the protocol of contamination used by IPL			
	a2	STX 21	ISHA 2019	Pork offal	STA.1.39	*Staphylococcus aureus*	Offal	Seeding 72h at 5±3°C
	a2	STX 22	ISHA 2019	Beef offal				
	a3	2007 Y1	Previous validation	Lamb and vegetables terrine	No available information about the strain and the protocol of contamination used by IPL			
	a3	2007 Y2	Previous validation	Lamb and vegetables terrine	No available information about the strain and the protocol of contamination used by IPL			
	a3	STX 23	ISHA 2019	Dog terrine with chicken	STA.1.39	*Staphylococcus aureus*	Offal	Seeding 72h at 5±3°C
	a3	STX 24	ISHA 2019	Dog terrine with beef	STA.1.29	*Staphylococcus aureus*	Turkey carcass	Seeding 72h at 5±3°C
	a3	STX 25	ISHA 2019	Chicken kibble for cat				
	a3	STX 28	ISHA 2019	Dog terrine with beef	STA.1.29	*Staphylococcus aureus*	Turkey carcass	Seeding 72h at 5±3°C
	a3	STX 29	ISHA 2019	Chicken kibble for cat	STA.1.39	*Staphylococcus aureus*	Offal	Seeding 72h at 5±3°C

Appendix I: relative trueness - raw results

Meat products

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2										MA: Petrifilm Staph Express								
					Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g or mL		Dilution	CFU/ plate		CFU		CFU/g or mL		Log CFU/g or mL	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep1	Rep 2	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						Plate 1	Plate 2	Plate 1	Plate 2														
a	A6	PV	Morceaux de canard	Duck						**300**	250	275	**2,44**	~~2.40~~						**170**	~~190~~	**2,23**	~~2.28~~
a	B6	PV	Rognons	Kidneys						**700**	800	750	**2,88**	~~2.90~~						**500**	~~600~~	**2,70**	~~2.78~~
a	D14	PV	Viande hachée	Minced meat						**1400**	750	1075	**3,03**	~~2.88~~						**1400**	~~1200~~	**3,15**	~~3.08~~
a	3M15	PV	Rognons de porc	Pork kidnes						**1455**	860	1158	**3,06**	~~2.93~~						**990**	~~880~~	**3,00**	~~2.94~~
a	R2	PV	Boullettes de bœuf	Beef meatballs						**1750**	1750	1750	**3,24**	~~3.24~~						**1600**	~~1300~~	**3,20**	~~3.11~~
a	R3	PV	Steak haché bœuf	Ground beef						**310**	350	330	**2,52**	~~2.54~~						**470**	~~530~~	**2,67**	~~2.72~~
a	R4	PV	Steak haché bœuf	Ground beef						**360**	300	330	**2,52**	~~2.48~~						**290**	~~430~~	**2,46**	~~2.63~~
a	R8	PV	Escalope de veau	Veal cutlet						**690**	820	755	**2,88**	~~2.91~~						**500**	~~200~~	**2,70**	~~2.30~~
a	R13	PV	Boullettes de bœuf	Beef meatballs						**1500**	1350	1425	**3,15**	~~3.13~~						**1600**	~~1500~~	**3,20**	~~3.18~~
a	R17	PV	Escalope de veau	Veal cutlet						**40**	55	47,5	**1,68**	~~1.74~~						**70**	~~20~~	**1,85**	~~1.30~~
b	B7	PV	Chair à saucisse	sausage meat						**290**	360	325	**2,51**	~~2.56~~						**370**	~~350~~	**2,57**	~~2.54~~
b	D6	PV	Ailes de poulet paprika	Chicken wings with paprika						**410**	430	420	**2,62**	~~2.63~~						**100**	~~400~~	**2,00**	~~2.60~~
b	D15	PV	Fricadelles	Fricadelles						**1400**	2200	1800	**3,26**	~~3.34~~						**1700**	~~1900~~	**3,23**	~~3.28~~
b	D16	PV	Rissolettes de porc pânées	Bread rissolettes of pork						**750**	940	845	**2,93**	~~2.97~~						**1500**	~~800~~	**3,18**	~~2.90~~
b	3M41	PV	Lasagne bolognaise	Lasagne bolognaise						**240**	340	290	**2,46**	~~2.53~~						**170**	~~160~~	**2,23**	~~2.20~~
b	3M42	PV	Lasagne bolognaise	Lasagne bolognaise						**750**	760	755	**2,88**	~~2.88~~						**340**	~~260~~	**2,53**	~~2.41~~
b	3M57	PV	Poudre de viande	Meat powder						**20000**	18500	19250	**4,28**	~~4.27~~						**10000**	~~20000~~	**4,00**	~~4.30~~
b	3M58	PV	Poudre de viande	Meat powder						**31000**	17000	24000	**4,38**	~~4.23~~						**10000**	~~23000~~	**4,00**	~~4.36~~
b	3M59	PV	Poudre de viande	Meat powder						**17000**	17000	17000	**4,23**	~~4.23~~						**16000**	~~15000~~	**4,20**	~~4.18~~
c	B11	PV	Saucisse de Toulouse	Toulouse sausage						**100**	50	75	**1,88**	~~1.70~~						**110**	~~120~~	**2,04**	~~2.08~~
c	D12	PV	Andouillettes	Andouillettes						**3100**	2800	2950	**3,47**	~~3.45~~						**1900**	~~3300~~	**3,28**	~~3.52~~
c	R24	PV	Rilettes	Rilettes						**850**	650	750	**2,88**	~~2.81~~						**910**	~~860~~	**2,96**	~~2.93~~
c	STX 1 (◊)	ISHA 2019	Bacon fumé (CA)	Smoked bacon (CA)	100	98	/	/	/	**9600**	/	**9600**	**3,98**	/	100	78	/	75	/	**7500**	/	**3,88**	/
					1000	8	/	/	/						~~1000~~	~~7~~	/	~~7~~	/				
c	STX 2 (◊)	ISHA 2019	Bacon (CA)	Bacon (CA)	1000	113	/	/	/	**110000**	/	**110000**	**5,04**	/	1000	98	/	91	/	**91000**	/	**4,96**	/
					10000	9	/	/	/						~~10000~~	~~8~~	/	~~8~~	/				

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2									MA: Petrifilm Staph Express							
					Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g or mL		Dilution	CFU/ plate		CFU		CFU/g or mL		Log CFU/g or mL	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep1	Rep 2	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						Plate 1	Plate 2	Plate 1	Plate 2														
a	M11	PV	Filet de porc	Pork filet						**64**	30	47	**1,67**	~~1.48~~						**10**	~~10~~	**1,00**	~~1.00~~
a	A5	PV	Escalope de poulet	Chicken cutlet						**35**	20	27,5	**1,44**	~~1.30~~						**10**	~~20~~	**1,00**	~~1.30~~
a	A15	PV	Viande bovine	Beef meat						**10**	<10	10	**1,00**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	A16	PV	Foies de volaille	Liver poultry						**>10 and <100**	>10 and <100	<100	**<2**	~~>1 and <2~~						**<10**	~~<10~~	**<1**	~~<1~~
a	3M06	PV	Rognons de porc	Pork kidneys						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	3M17	PV	Langue de porc	Tongue of pork						**<10**	<10	<10	**<1**	~~<1~~						**100**	~~100~~	**2,00**	~~2.00~~
a	3M22	PV	Langue de porc	Tongue of pork						**>100 and <1000**	>100 and <1000	<1000	**<3**	~~>2 and <3~~						**1300**	~~1400~~	**3,11**	~~3.15~~
a	3M80	PV	Viande hachée	Meat minced						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	3M94	PV	Abats	Offals						**<1000**	<1000	<1000	**<3**	~~<3~~						**<10**	~~<10~~	**<1**	~~<1~~
a	3M95	PV	Steak de cheval	Horse steak						**<1000**	<1000	<1000	**<3**	~~<3~~						**<10**	~~<10~~	**<1**	~~<1~~
a	L12	PV	Cuisses de caille	Quail wings						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	L13	PV	Filet dindonneau	Turkey filet						**<100**	>10 and <100	<100	**<2**	~~>1 and <2~~						**30**	~~30~~	**1,48**	~~1.48~~
a	R1	PV	Steack haché bœuf	Ground beef						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	R14	PV	Viande hachée	Meat minced						**15**	<10	15	**1,18**	~~<1~~						**<10**	~~10~~	**<1**	~~1.00~~
a	R25	PV	Escalope de veau	Veal cutlet						**UR**	UR	UR	UR	/						**300**	~~310~~	**2,48**	~~2.49~~
a	R26	PV	Escalope de veau	Veal cutlet						**UR**	UR	UR	UR	/						**160**	~~100~~	**2,20**	~~2.00~~
a	2007 CC3	PV	Escalope de dinde	Turkey cutlet						**<10**	<10	<10	**<1**	~~<1~~						**80**	~~100~~	**1,90**	~~2.00~~
b	3M82	PV	Merguez	Merguez						**<100**	<100	<100	**<2**	~~<2~~						**<10**	~~<10~~	**<1**	~~<1~~
b	L14	PV	Saucisse à cuire fumée	Smoked sausage						**UR**	UR	UR	**UR**	/						**38000**	~~36000~~	**4,58**	~~4.56~~
c	M2	PV	Saucisse	Sausage						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	A1	PV	Andouillette cuite	Cooked andouillette						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	A4	PV	Jambon blanc	Ham						**110**	120	115	**2,06**	~~2.08~~						**>10 and <100**	~~<>10 and <100~~	**<2**	~~>1 and <2~~
c	A11	PV	Saucisson à l'ail	Sausage garlic						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	B10	PV	Chipolatas aux herbes	Herbal sausage						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M23	PV	Poitrine fraîche	Porl belly						**<100**	<100	<100	**<2**	~~<2~~						**90**	~~110~~	**1,95**	~~2.04~~
c	3M40	PV	Jambon cru	Raw ham						**<10**	<10	<10	**<1**	~~<1~~						**<100**	~~<100~~	**<2**	~~<2~~
c	3M53	PV	Lardons fumés	Smoked bacon						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M54	PV	Chorizo	Chorizo						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2									MA: Petrifilm Staph Express							
					Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g or mL		Dilution	CFU/ plate		CFU		CFU/g or mL		Log CFU/g or mL	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep1	Rep 2	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						Plate 1	Plate 2	Plate 1	Plate 2														
c	3M60	PV	Bacon	Bacon						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M61	PV	Bacon	Bacon						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M81	PV	Saucisse	Sausage						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M93	PV	Jambon	Ham						**<1000**	<1000	<1000	**<3**	~~<3~~						**<100**	~~<100~~	**<2**	~~<2~~
c	L11	PV	Jambon	Ham						**>10 and <100**	<>10 and <100	<100	**<2**	~~>1 and <2~~						**10**	~~30~~	**1,00**	~~1.48~~

Dairy Product

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2										MA: Petrifilm Staph Express								
					Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g or mL		Dilution	CFU/ plate		CFU confirmed		CFU/g or mL		Log CFU/g or mL	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep1	Rep 2	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						Plate 1	Plate 2	Plate 1	Plate 2														
a	3M27	PV	Reblochon	Reblochon						**1200**	1200	1200	**3,08**	~~3.08~~						**1300**	~~1400~~	**3,11**	~~3.15~~
a	L6	PV	Farmer goat cheese	Farmer goat cheese						**3600**	3200	3400	**3,53**	~~3.51~~						**300**	~~500~~	**2,48**	~~2.70~~
a	L15	PV	Fromage fermier	Farmer cheese						**710**	920	815	**2,91**	~~2.96~~						**100**	~~90~~	**2,00**	~~1.95~~
a	STX 3 (◊)	ISHA 2019	St Nectaire fermier (CA)	St Nectaire farmer (CA)	100	87	/	/	/	**8700**	/	**8700**	**3,94**	/	100	89	/	88	/	**8800**	/	**3,94**	/
					1000	9	/	/	/						~~1000~~	~~13~~	/	~~12~~	/				
a	STX 4 (◊)	ISHA 2019	Reblochon (CA)	Reblochon (CA)	10000	45	/	/	/	**460000**	/	**460000**	**5,66**	/	10000	54	/	48	/	**480000**	/	**5,68**	/
					100000	6	/	/	/						~~100000~~	~~6~~	/	~~5~~	/				
b	L2	PV	Lait cru	Raw milk						**190**	120	155	**2,19**	~~2.08~~						**100**	~~130~~	**2,00**	~~2.11~~
b	L3	PV	Crème cru	Raw cream						**320**	390	355	**2,55**	~~2.59~~						**260**	~~420~~	**2,41**	~~2.62~~
b	L4	PV	Crème cru	raw cream						**110**	150	130	**2,11**	~~2.18~~						**170**	~~100~~	**2,23**	~~2.00~~
b	L5	PV	Crème cru	Raw cream						**150**	100	125	**2,10**	~~2.00~~						**200**	~~200~~	**2,30**	~~2.30~~
b	L8	PV	Lait cru de chêvre	Goat raw milk						**70**	60	65	**1,81**	~~1.78~~						**70**	~~50~~	**1,85**	~~1.70~~
b	L9	PV	Lait cru	Raw milk						**50**	50	50	**1,70**	~~1.70~~						**50**	~~60~~	**1,70**	~~1.78~~
b	R32	PV	Lait cru	Raw milk						**220**	350	285	**2,45**	~~2.54~~						**270**	~~210~~	**2,43**	~~2.32~~
c	M1	PV	Glace	Ice cream						**350**	390	370	**2,57**	~~2.59~~						**250**	~~190~~	**2,40**	~~2.28~~
c	A8	PV	Yaourt surgelé fraise	Strawberry frozen yoghurt						**110**	80	95	**1,98**	~~1.90~~						**90**	~~30~~	**1,95**	~~1.48~~
c	A9	PV	Yaourt surgelé pêche	Peach frozen yoghurt						**55**	82	68,5	**1,84**	~~1.91~~						**80**	~~30~~	**1,90**	~~1.48~~
c	E10	PV	Gouda	Gouda						**100**	150	125	**2,10**	~~2.18~~						**40**	~~40~~	**1,60**	~~1.60~~
c	3M38	PV	Fromage de chêvre	Goat cheese						**200**	500	350	**2,54**	~~2.70~~						**100**	~~>10 and <100~~	**2,00**	~~>1 and <2~~
c	R30	PV	Saint Nectaire	Saint Nectaire						**8600**	10000	9300	**3,97**	~~4.00~~						**15000**	~~18000~~	**4,18**	~~4.26~~
c	2007 D1	PV	Tartine savoyarde	Tartine savoyarde						**64000**	71000	67500	**4,83**	~~4.85~~						**40000**	~~48000~~	**4,60**	~~4.68~~

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					Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g or mL		Dilution	CFU/ plate		CFU confirmed		CFU/g or mL		Log CFU/g or mL	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep1	Rep 2	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						Plate 1	Plate 2	Plate 1	Plate 2														
c	2007 D2	PV	Fromage à raclette	Cheese for raclette						**10000**	13000	11500	**4,06**	~~4.11~~						**23000**	~~33000~~	**4,36**	~~4.52~~
c	2007 AA5	PV	Fromage de Savoie	Cheese from Savoie						**3500**	3700	3600	**3,56**	~~3.57~~						**1400**	~~1500~~	**3,15**	~~3.18~~
a	A3	PV	Munster	Munster						**UR**	UR	UR	UR	/						**UR**	~~UR~~	**UR**	/
a	3M01	PV	Reblochon	Reblochon						**500**	<1000	500	**2,70**	~~<3~~						**UR**	~~UR~~	**UR**	/
a	3M02	PV	Reblochon	Reblochon						**UR**	UR	UR	UR	/						**UR**	~~UR~~	**UR**	/
a	3M03	PV	Reblochon	Reblochon						**1300**	1100	1200	**3,08**	~~3.04~~						**UR**	~~UR~~	**UR**	/
a	3M04	PV	Reblochon	Reblochon						**UR**	UR	UR	UR	/						**UR**	~~UR~~	**UR**	/
a	3M12	PV	Munster	Munster						**UR**	UR	UR	UR	/						**UR**	~~UR~~	**UR**	/
a	3M21	PV	Munster	Munster						**19000**	29000	24000	**4,38**	~~4.46~~						**<100**	~~<100~~	**<2**	~~<2~~
a	3M24	PV	Reblochon	Reblochon						**UR**	UR	UR	UR	/						**1900**	~~1300~~	**3,28**	~~3.11~~
a	3M25	PV	Reblochon	Reblochon						**UR**	UR	UR	UR	**/**						~~1900~~	**2300**	~~3~~	**3,36**
a	3M26	PV	Reblochon	Reblochon						**UR**	UR	UR	UR	/						~~**<100**~~	200	~~**<2**~~	2,30
a	3M31	PV	Morbier	Morbier						**<100**	<100	<100	**<2**	~~<2~~						**<10**	~~<10~~	**<1**	~~<1~~
a	L7	PV	Fromage de chêvre	Farmer goat cheese						**170**	110	140	**2,15**	~~2.04~~						**<100**	~~<10~~	**<2**	~~<1~~
a	L16	ISHA 2019	St Nectaire fermier (CA)	St Nectaire farmer (CA)						**1100**	>100 and	1100	**3,04**							**>100**	~~>100~~	**>2**	~~>2~~
b	M3	PV	Lait cru	Raw milk						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
b	L1	PV	Lait cru	Raw milk						**40**	45	42,5	**1,63**	~~1.65~~						**10**	~~<10~~	**1,00**	~~<1~~
b	L10	PV	Lait cru	Raw milk						**250**	250	250	**2,40**	~~2.40~~						**>10 and <100**	~~>10 and <100~~	**<2**	~~>1 and <2~~
b	2007 B2	PV	Lait cru	Raw milk						**10**	<10	10	**1,00**	~~<1~~						**<10**	~~10~~	**<1**	~~<1~~

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2										MA: Petrifilm Staph Express								
					Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g or mL		Dilution	CFU/ plate		CFU confirmed		CFU/g or mL		Log CFU/g or mL	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep1	Rep 2	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						Plate 1	Plate 2	Plate 1	Plate 2														
b	2007C1	PV	Lait cru	Raw milk						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	A10	PV	Yaourt surgelé vanille	Vanilla frozen yoghurt						**110**	75	92,5	**1,97**	~~1.88~~						**30**	~~30~~	**1,48**	~~1.48~~
c	E7	PV	Mimolette	Momolette						**50**	>10 and <100	50	**1,70**	~~>1 and <2~~						**<100**	~~<100~~	**<2**	~~<1~~
c	E8	PV	Raclette	Raclette						**75**	45	60	**1,78**	~~1.65~~						**<10**	~~<10~~	**<1**	~~<1~~
c	E9	PV	Gouda	Gouda						**>10 and <100**	>10 and <100	<100	**<2**	~~>1 and <1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M20	PV	Gorgonzola	Gorgonzola						**<100**	<100	<100	**<2**	~~<2~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M30	PV	Fromage de brebis	Sheep cheese						**12000**	9500	10750	**4,03**	~~3.98~~						**>100 and <1000**	~~>100 and <1000~~	**<3**	~~>2 and <3~~
c	3M36	PV	Fromage de chêvre	Goat cheese						**<100**	<100	<100	**<2**	~~<2~~						**100**	~~100~~	**2,00**	~~2.00~~
c	R20	PV	Lait de chêvre	Goat milk						**UR**	UR	UR	UR	~~UR~~						**340**	~~360~~	**2,53**	~~2.56~~
c	R21	PV	Lait de chêvre	Goat milk						**UR**	UR	UR	UR	~~UR~~						**60**	~~60~~	**1,78**	~~1.78~~
c	2007 B3	PV	Epoisses	Epoisses						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	2007 B4	PV	Fromage de St Priest	Cheese St Priest						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	2007 Y3	PV	Glace à la fraise (CA)	Strawberry ice (CA)						**40**	80	60	**1,78**	~~1.90~~						**20**	~~30~~	**1,30**	~~1.48~~

Seafood products																							
					MR: NF ISO 6888-2											MA: Petrifilm Staph Express								
Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g or			Dilution	CFU/ plate		CFU		CFU/g or mL		Log CFU/g	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2			Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						~~Plate 1~~	~~Plate 2~~	~~Plate 1~~	~~Plate 2~~															
a	D8	PV	Filet de truite	Filet of trout						**45**	10	27,5	**1,44**	~~1.00~~						**100**	~~100~~	**2,00**	~~2.00~~
a	R27	PV	Cabillaud	Cod						**55**	25	40	**1,60**	~~1.40~~						**60**	~~10~~	**1,78**	~~1.00~~
a	R28	PV	Filet de loup	Filet of loup						**40**	50	45	**1,65**	~~1.70~~						**50**	~~60~~	**1,70**	~~1.78~~
a	R38	PV	Filet de merlan	Filet of whiting						**300**	320	310	**2,49**	~~2.48~~						**340**	~~210~~	**2,53**	~~2.32~~
a	STX 5 (◊)	ISHA 2019	Filet de cabillaud (CA)	Whiting filet (CA)	1000	30	/	/	/	**2900**	/	**2900**	**3,46**	/		1000	22	/	22	/	**22000**	/	**4,34**	/
					10000	2	/	/	/							~~10000~~	~~2~~	/	~~2~~	/				
b	R10	PV	Crevette	Shrimps						**210**	200	205	**2,31**	~~2.30~~						**150**	~~200~~	**2,18**	~~2.30~~
b	R11	PV	Crevette	Shrimps						**70**	60	65	**1,81**	~~1.78~~						**60**	~~60~~	**1,78**	~~1.78~~
b	R12	PV	Crevette	Shrimps						**45**	25	35	**1,54**	~~1.40~~						**100**	~~80~~	**2,00**	~~1.90~~
b	STX 6 (◊)	ISHA 2019	Moules cuites (CA)	Cooked mussels (CA)	1000	96	/	/	/	**98000**	/	**98000**	**4,99**			1000	102	/	100	/	**100000**	/	**5,00**	/
					10000	12	/	/	/							~~10000~~	~~12~~	/	~~12~~	/				
b	STX 7 (◊)	ISHA 2019	Moules cuites (CA)	Cooked mussels (CA)	10000	60	/	/	/	**590000**	/	**590000**	**5,77**			10000	49	/	42	/	**420000**	/	**5,62**	/
					100000	5	/	/	/							~~100000~~	~~4,00~~	/	~~4,00~~	/				
c	C20	PV	Surimi	Surimi						**620**	680	650	**2,81**	~~2.83~~						**890**	~~1200~~	**2,95**	~~3.08~~
c	3M35	PV	Lasagne de saumon	Salmon lasagne						**7700**	9100	8400	**3,92**	~~3.96~~						**6100**	~~4200~~	**3,79**	~~3.62~~
c	3M43	PV	Lasagne de saumon	Salmon lasagne						**3000**	3900	3450	**3,54**	~~3.59~~						**2900**	~~2200~~	**3,46**	~~3.34~~
c	R34	PV	Crevette et surimi	Srimps and surimi						**3000**	2500	2750	**3,44**	~~3.40~~						**2600**	~~2200~~	**3,41**	~~3.34~~
c	R37	PV	Poisson cuisiné	Cooked fish						**330**	310	320	**2,51**	~~2.49~~						**330**	~~320~~	**2,52**	~~2.51~~
c	R39	PV	Carpaccio de saumon	Salmon carpaccio						**230**	120	175	**2,24**	~~2.08~~						**220**	~~160~~	**2,34**	~~2.20~~
a	M6	PV	Filet de sole	Filet of sole						**UR**	UR	**UR**	**UR**	/						**20**	~~10~~	**1,30**	~~1.00~~

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2										MA: Petrifilm Staph Express								
					Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g or		Dilution	CFU/ plate		CFU		CFU/g or mL		Log CFU/g	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						~~Plate 1~~	~~Plate 2~~	~~Plate 1~~	~~Plate 2~~														
a	2007 AA6	PV	Filet de merlu	Filet of hake						**<10**	<10	**<10**	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	2007 CC2	PV	Filet de cabillaud	Filet of cod						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	2007 A1	PV	Filet d'empereur	Filet of fish: "empereur"						**35**	30	32,5	**1,51**	~~1.48~~						**40**	~~10~~	**1,60**	~~1.00~~
b	R9	PV	Crevette	Shrimps						**<10**	<10	<10	**<1**	~~<1~~						**<100**	~~<100~~	**<2**	~~<2~~
c	A13	PV	Salade au surimi	Salad with surimi						**>100 and <1000**	>100 and <1000	<1000	**<3**	~~>2 and <3~~						**UR**	~~>100 and~~	**UR**	
c	C14	PV	Sardine	Sardine						**UR**	UR	UR	UR	/						**UR**	~~>100 and~~	**UR**	
c	C15	PV	Saumon fumé	Smoked salmon						**UR**	UR	UR	UR	/						**900**	~~1000~~	**2,95**	~~3.00~~
c	C17	PV	Saumon à l'aneth	Salmon with dill						**UR**	UR	UR	UR	/						**<100**	~~<100~~	**<2**	
c	C19	PV	Saumon précuit	Pre-baked salmon						**15**	25	17,5	**1,24**	~~1.40~~						**10**	~~10~~	**1,00**	~~1.00~~
c	C21	PV	Assiette marine	Assiette marine						**UR**	UR	UR	UR	/						**UR**	~~UR~~	**UR**	/
c	3M05	PV	Surimi	Surimi						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M18	PV	Crevette et surimi	Shrimp and surimi						**>10 and <100**	<10	55	**<1,74**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M32	PV	Filet de sole	Filet of sole						**<1000**	<1000	<1000	**<3**	~~<3~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M44	PV	Saumon fumé	Smoked salmon						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M51	PV	Salade de crevette	Saled of shrimp						**10**	30	20	**1,30**	~~1.48~~						**50**	~~30~~	**1,70**	~~1.48~~
c	3M52	PV	Terrine de langoustine	Terrine of langoustine						**UR**	UR	UR	UR	/						**<10**	~~<10~~	**<1**	~~<1~~
c	2007AA4	PV	Mélange de crevette	Mix of shrimps						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~

Vegetal product

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2									MA: Petrifilm Staph Express								
					Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g or mL		Dilution	CFU/ plate		CFU		CFU/g or mL		Log CFU/g or mL	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						~~Plate 1~~	~~Plate 2~~	~~Plate 1~~	~~Plate 2~~														
a	A2	PV	Salade composée	Mixed salad						**70**	30	50	**1,70**	~~1.48~~						**100**	~~>10 and~~	**2,00**	>1 and <2
a	D7	PV	Céléry remoulade	Remoulade celery						**1200**	2000	1600	**3,20**	~~3.30~~						**1230**	~~820~~	**3,09**	~~2.91~~
a	D19	PV	Salade composée (céléri carottes)	Mixed salad (carrot, celery)						**360**	300	330	**2,52**	~~2.48~~						**180**	~~250~~	**2,26**	~~2.40~~
a	R33	PV	Salade mélée	Mixed of salad						**370**	420	395	**2,60**	~~2.62~~						**440**	~~380~~	**2,64**	~~2.58~~
a	R35	PV	Céleri rémoulade	Remoulade celery						**4600**	4800	4700	**3,67**	~~3.68~~						**2600**	~~3500~~	**3,41**	~~3.54~~
a	R36	PV	Carottes, tomates	Carrot tomato						**5000**	4400	4700	**3,67**	~~3.64~~						**3600**	~~3800~~	**3,56**	~~3.58~~
a	2007 DD2	PV	Salade composée (CA)	Mixed salad (CA)						**9200**	9700	9450	**3,98**	~~3.99~~						**7900**	~~8300~~	**3,90**	~~3.92~~
b	2007 F1	PV	Emincé de crudité (CA)	Sliced vegetables (CA)						**360000**	320000	340000	**5,53**	~~5.51~~						**150000**	~~140000~~	**5,18**	~~5.15~~
b	STX 8 (◊)	ISHA 2019	Carotte râpées (CA)	Gratted carrot (CA)	1000	32	/	/	/	**31000**	/	**31000**	**4,49**	/	1000	24	/	20	/	**20000**	/	**4,30**	/
					10000	2	/	/	/						~~10000~~	~~3~~	/	~~3~~	/				
b	STX 9 (◊)	ISHA 2019	Chou rouge (CA)	Red cabbage (CA)	1000	57	/	/	/	**56000**	/	**56000**	**4,75**	/	1000	52	/	50	/	**50000**	/	**4,70**	/
					10000	4	/	/	/						~~10000~~	~~4,00~~	/	~~3~~	/				
b	STX 10 (◊)	ISHA 2019	Pomme (CA)	Apple (CA)	1000	79	/	/	/	**80000**	/	**80000**	**4,90**	/	1000	82	/	79	/	**79000**	/	**4,90**	/
					10000	9	/	/	/						~~10000~~	~~7~~	/	~~7~~	/				
b	STX 11 (◊)	ISHA 2019	Kiwi (CA)	Kiwi (CA)	1000	107	/	/	/	**110000**	/	**110000**	**5,04**	/	1000	98	/	90	/	**90000**	/	**4,95**	/
					10000	12	/	/	/						~~10000~~	~~11~~	/	~~10~~	/				
c	3M28	PV	Légumes surgelés	Frozen vegetables						**160**	160	160	**2,20**	~~2.20~~						**110**	~~180~~	**2,04**	~~2.26~~
c	3M39	PV	Choucroute	Sauerkaut						**110**	110	110	**2,04**	~~2.04~~						**130**	~~110~~	**2,11**	~~2.04~~
c	STX 12 (◊)	ISHA 2019	Haricots rouges cuits (CA)	Baked red beans (CA)	1000	29	/	/	/	**29000**	/	**29000**	**4,46**	/	1000	23	/	23	/	**23000**	/	**4,36**	/
					10000	3	/	/	/						~~10000~~	~~3~~	/	~~3~~	/				
c	STX 13 (◊)	ISHA 2019	Haricots verts cuits (CA)	Baked green beans (CA)	1000	62	/	/	/	**60000**	/	**60000**	**4,78**	/	1000	56	/	54	/	**54000**	/	**4,73**	/
					10000	4	/	/	/						~~10000~~	~~7~~	/	~~6~~	/				
c	STX 14 (◊)	ISHA 2019	Salade de fruit (CA)	Fruit salad (CA)	1000	111	/	/	/	**110000**	/	**110000**	**5,04**	/	1000	104	/	88	/	**88000**	/	**4,94**	/
					10000	10	/	/	/						~~10000~~	~~9~~	/	~~9~~	/				

a	A12	PV	~~Salade composée (maïs poivron artich)~~	Mixed salad						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2										MA: Petrifilm Staph Express									
					Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g or mL		Dilution	CFU/ plate		CFU		CFU/g or mL		Log CFU/g or mL	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						Plate 1	Plate 2	Plate 1	Plate 2														
a	A14	PV	Salade composée (chou blanc jambon)	Mixed salad (white cabbage, ham)						**90**	130	110	**2,04**	~~2.11~~						**30**	~~50~~	**1,48**	~~1.70~~
a	3M14	PV	Salade composée (pdt, jambon)	Mixed salad (Potato, ham, tomato)						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	3M37	PV	Salade composée (riz, poivron)	Miwed salad (rice, peppers,						**UR**	UR	UR	UR	/						**<10**	~~<10~~	**<1**	~~<1~~
a	R5	PV	Salade composée (pdt, thon)	Mixed salad (potato, tuna)						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	R6	PV	Macédoine	Mixed vegetables						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	R7	PV	Salade composée (chou râpé)	Mixed salad (grapped						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	R15	PV	Taboulé	Tabbouleh						**25**	15	20	**1,30**	~~1.18~~						**10**	~~10~~	**1,00**	~~1.00~~
a	2007 A2	PV	Salade de pâtes	Pastas salad						**25**	15	20	**1,30**	~~1.40~~						**10**	~~10~~	**1,00**	~~1.00~~
b	3M16	PV	Chou	Cabbage						**<100**	<100	<100	**<2**	~~<2~~						**<100**	~~<100~~	**<2**	~~<2~~
c	3M08	PV	Légumes ,pour couscous	Vegetables for couscous						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M29	PV	Poudre de cacao	Powder of cocoa						**<100**	<100	<100	**<2**	~~<2~~						**<100**	~~<100~~	**<2**	~~<2~~

Pastries and eggs products

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2										MA: Petrifilm Staph Express									
					Dilution	CFU/ plate				CFU/g		Mean	Log CFU/g		Dilution	CFU/ plate		CFU		CFU/g		Log CFU/g	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						Plate 1	Plate 2	Plate 1	Plate 2														
a	M4	PV	Pâtisserie	Pastry						**110**	130	120	**2,08**	~~2.11~~						**150**	~~130~~	**2,18**	~~2.11~~
a	M5	PV	Pâtisserie	Pastry						**6600**	21000	13800	**4,14**	~~4.32~~						**7800**	~~11000~~	**3,89**	~~4.04~~
a	M7	PV	Pâtisserie	Pastry						**51000**	37000	44000	**4,64**	~~4.57~~						**30000**	~~18000~~	**4,48**	~~4.26~~
a	B5	PV	Paris Brest	Paris Brest						**7500**	6200	6850	**3,84**	~~3.79~~						**5100**	~~5600~~	**3,71**	~~3.75~~
a	B13	PV	Merveilleux chocolat	Merveilleux chocolat						**5100**	6000	5550	**3,74**	~~3.78~~						**1200**	~~1100~~	**3,08**	~~3.04~~
a	3M19	PV	Eclair au café	Eclair with coffee						**1100**	1600	1350	**3,13**	~~3.20~~						**3600**	~~3800~~	**3,56**	~~3.58~~
b	A7	PV	Princesse d'été	Princesse d'été						**11000**	13000	12000	**4,08**	~~4.11~~						**8000**	~~9200~~	**3,90**	~~3.96~~
b	B12	PV	Chou Parisien vanille	Chou Parisien vanille						**820**	960	890	**2,95**	~~2.98~~						**170**	~~160~~	**2,23**	~~2.20~~
b	C24	PV	Pêche melba	Peach melba						**2500**	2200	2350	**3,37**	~~3.34~~						**1200**	~~970~~	**3,08**	~~2.99~~
b	STX15 (◊)	ISHA 2019	Gâteau chocolat crème anglaise (CA)	Chocolate cake with custard (CA)	1000	89	/	/	/	**93000**	/	**93000**	**4,97**	/	1000	89	/	88	/	**88000**	~~10~~	**4,94**	/
					10000	13	/	/	/						~~10000~~	~~10~~	/	~~10~~	/				
b	STX16 (◊)	ISHA 2019	Meringue crème anglaise (CA)	Meringue with custard (CA)	10000	29	/	/	/	**300000**	/	**300000**	**5,48**	/	10000	19	/	19	/	**190000**	~~8300~~	**5,28**	/
					100000	4	/	/	/						~~100000~~	~~3~~	/	~~3~~	/				
c	D10	PV	Œufs durs mayonnaise	Hard egg with mayonnaise						**300**	300	300	**2,48**	~~2.48~~						**440**	~~590~~	**2,64**	~~2.77~~
c	STX 17 (^)	ISHA 2019	Mayonnaise (CA)	Mayonnaise (CA)	10000	54	/	/	/	**56000**	/	**56000**	**4,75**	/	10000	44	/	40	/	**400000**	/	**5,60**	/
					100000	7	/	/	/						~~100000~~	~~6~~	/	~~6~~	/				
c	STX 18 (^)	ISHA 2019	Œuf "mimosa" (CA)	Eggs "mimosa" (CA)	1000	107	/	/	/	**110000**	/	**110000**	**5,04**	/	1000	102	/	99	/	**99000**	/	**5,00**	/
					10000	11	/	/	/						~~10000~~	~~8~~	/	~~8~~	/				
c	STX 19 (^)	ISHA 2019	Salade aux œufs (CA)	Eggs salad (CA)	10000	22	/	/	/	**220000**	/	**220000**	**5,34**	/	10000	22	/	22	/	**220000**	/	**5,34**	/
					100000	2	/	/	/						~~100000~~	~~2~~	/	~~2~~	/				
c	STX 20 (^)	ISHA 2019	Œufs pasteurisés (CA)	Pasteurized eggs (CA)	10000	48	/	/	/	**480000**	/	**480000**	**5,68**	/	10000	49	/	49	/	**490000**	/	**5,69**	/
					100000	5	/	/	/						~~100000~~	~~5~~	/	~~5~~	/				

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2										MA: Petrifilm Staph Express								
					Dilution	CFU/ plate				CFU/g		Mean	Log CFU/g		Dilution	CFU/ plate		CFU		CFU/g		Log CFU/g	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						Plate 1	Plate 2	Plate 1	Plate 2														
a	3M07	PV	Pâtisserie	Pastry						**<1000**	**<100 0**	**<1000**	**<3**	~~<3~~						**<10**	~~10~~	**<1**	~~<1~~
a	3M13	PV	Pâtisserie	Pastry						**<10**	<10	**<10**	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
b	B3	PV	Carré à la crème	Carré à la crème						**UR**	UR	UR	UR	/						**11000**	~~12000~~	**4,04**	~~4.08~~
b	3M11	PV	Crème caramel	Toffee cream						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
b	2007 CC1	PV	Flan pâtissier	Flan cake						**<10**	<10	<10	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	3M09	PV	Coule d'œuf	Egg flow						**<1**	<1	<1	**<0**	~~<0~~						**1**	~~1~~	**0**	~~0.00~~
c	3M10	PV	Coule d'œuf	Egg flow						**<1**	<1	<1	**<0**	~~<0~~						**<1**	~~<1~~	**<0**	~~<0~~

Pet food

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2									MA: Petrifilm Staph Express								
					Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g		Dilution	CFU/ plate		CFU confirmed		CFU/g or mL		Log CFU/g or mL	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						Plate 1	Plate 2	Plate 1	Plate 2														
a	2007 Z1	PV	Croquette pour chien (CA)	Pellets for dog (CA)						**20000**	25000	22500	**4,35**	~~4.40~~						**17000**	~~16000~~	**4,23**	>1 and
a	2007 X1	PV	Croquette pour chat (CA)	Pellets for cat (CA)						**340**	360	350	**2,54**	~~2.56~~						**100**	~~70~~	**2,00**	~~1.85~~
a	2007 X2	PV	Croquette pour chat (CA)	Pellets for cat (CA)						**4300**	4800	4550	**3,66**	~~3.68~~						**760**	~~860~~	**2,88**	~~<1~~
a	2007 E1	PV	Croquette pour animaux (CA)	Pellets for animals (CA)						**410000**	450000	430000	**5,63**	~~5.65~~						**120000**	~~140000~~	**5,08**	~~<1~~
a	2007 E2	PV	Céréals pour animaux (CA)	Cereals for animals (CA)						**26000**	22000	24000	**4,38**	~~4.34~~						**13000**	~~13000~~	**4,11**	~~4.11~~
a	2007 E3	PV	Croquette pour chat (CA)	Pellets for cat (CA)						**2500**	2000	2250	**3,35**	~~3.30~~						**1000**	~~1200~~	**3,00**	~~3.08~~
b	2007 Z2	PV	Déchets de viande pour animaux	Animal meat waste						**21000**	22000	21500	**4,33**	~~4.34~~						**15000**	~~17000~~	**4,18**	~~4.23~~
b	2007 W1	PV	Déchets de viande pour animaux (CA)	Animal meat waste (CA)						**560**	630	595	**2,77**	~~2.80~~						**340**	~~340~~	**2,53**	~~2.53~~
b	2007 W2	PV	Déchets de viande pour animaux (CA)	Animal meat waste (CA)						**6500**	7100	6800	**3,83**	~~3.85~~						**2200**	~~2200~~	**3,34**	~~3.34~~
b	2007 W3	PV	Déchets de viande pour animaux (CA)	Animal meat waste (CA)						**5300**	4900	5100	**3,71**	~~3.69~~						**1800**	~~1900~~	**3,26**	~~3.28~~
b	STX 21 (◊)	ISHA 2019	Abats de porc (CA)	Pork offal (CA)	1000	62	/	/	/	**60000**	/	**60000**	**4,78**	/	1000	48	/	47	/	**47000**	/	**4,67**	/
					10000	4	/	/	/						~~10000~~	~~17~~	/	~~16~~	/				
b	STX 22 (◊)	ISHA 2019	Abats de bœufs (CA)	Beef offal (CA)	1000	125	/	/	/	**120000**	/	**120000**	**5,08**	/	1000	89	/	89	/	**89000**	/	**4,95**	/
					10000	10	/	/	/						~~10000~~	~~10~~	/	~~10~~	/				
c	STX 23 (◊)	ISHA 2019	Pâtée pour chien au poulet (CA)	Dog terrine with chicken (CA)	10000	30	/	/	/	**290000**	/	**290000**	**5,46**	/	10000	29	/	29	/	**290000**	/	**5,46**	/
					100000	2	/	/	/						~~100000~~	~~4,00~~	/	~~4,00~~	/				
c	STX 24 (◊)	ISHA 2019	Pâtée pour chien au boeuf (CA)	Dog terrine with beef (CA)	1000	58	/	/	/	**58000**	/	**58000**	**4,76**	/	1000	61	/	59	/	**59000**	/	**4,77**	/
					10000	6	/	/	/						~~10000~~	~~7~~	/	~~7~~	/				
c	STX 25 (◊)	ISHA 2019	Pâtée pour chat au poulet (CA)	Cat terrine with chicken (CA)	1000	13	/	/	/	**120000**	/	**120000**	**5,08**	/	1000	86	/	82	/	**82000**	/	**4,91**	/
					10000	1	/	/	/						~~10000~~	~~11~~	/	~~10~~	/				
c	STX 28 (◊)	ISHA 2019	Pâtée pour chien au boeuf (CA)	Dog terrine with salmon (CA)	100	55	/	/	/	**5500**	/	**5500**	**3,74**	/	100	43	/	42	/	**4200**	/	**3,62**	/
					1000	6	/	/	/						~~1000~~	~~5~~	/	~~5~~	/				
c	STX29 (◊)	ISHA 2019	Pâtée pour chat au poulet (CA)	Cat terrine with beef and chicken (CA)	100	78	/	/	/	**7800**	/	**7800**	**3,89**	/	100	66	/	64	/	**6400**	/	**3,81**	/

Type	N° sample	Analysis date	Sample name (french)	Sample name (english)	MR: NF ISO 6888-2										MA: Petrifilm Staph Express								
					Dilution	CFU/ plate				CFU/g or mL		Mean	Log CFU/g		Dilution	CFU/ plate		CFU confirmed		CFU/g or mL		Log CFU/g or mL	
						Rep1		Rep 2		Rep 1	Rep 2		Rep 1	Rep 2		Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
						Plate 1	Plate 2	Plate 1	Plate 2														
					1000	8	/	/	/						~~1000~~	~~5~~	/	~~5~~	/				
a	2007 C2	PV	Croquette pour animaux	Pellets for animals						**<10**	<10	**<10**	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	2007 BB3	PV	Croquette pour animaux	Pellets for animals						**<10**	<10	**<10**	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	2007 BB4	PV	Croquette pour animaux	Pellets for animals						**<10**	<10	**<10**	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	2007 AA1	PV	Croquette pour chien	Pellets for dog						**<10**	<10	**<10**	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	2007 AA2	PV	Croquette pour chat	Pellets for cat						**<10**	<10	**<10**	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	2007 AA3	PV	Croquette pour chat	Pellets for cat						**<10**	<10	**<10**	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
a	2007 X3	PV	Farine pour poisson (CA)	Flour for fish (CA)						**30**	15	22,5	**1,35**	~~1.18~~						**50**	~~40~~	**<1**	~~<1~~
c	2007 B1	PV	Saucisson pour animaux	Dry sausage for animals						**<1000**	<1000	<1000	**<3**	~~<3~~						**<10**	~~<10~~	**<1**	~~<1~~
c	2007 AA4	PV	Pâté de viande pour animaux	Meat terrine for animals						**<10**	<10	**<10**	**<1**	~~<1~~						**<10**	~~<10~~	**<1**	~~<1~~
c	2007 Y1	PV	Pâté agneau / légumes (CA)	Lamb and vegetables terrine (CA)						**40**	30	35	**1,54**	~~1.48~~						**10**	~~40~~	**1**	~~1.60~~
c	2007 Y2	PV	Pâté agneau / légumes (CA)	Lamb and vegetables terrine (CA)						**75**	155	115	**2,06**	~~1.74~~						**10**	~~<10~~	**1**	~~<1~~

Appendix J: statistical calculations

Category	Type	#	Matrix	ISO CFU/g	Alternative CFU/g	ISO log CFU/g	Alternative log CFU/g	Mean	Difference	
Meat products	a	A6	Duck			2,44	2,23	2,33	-0,21	1
	a	B6	Kidneys			2,88	2,70	2,79	-0,18	2
	a	D14	Minced meat			3,03	3,15	3,09	0,11	3
	a	3M15	Pork kidnes			3,06	3,00	3,03	-0,07	4
	a	R2	Beef meatballs			3,24	3,20	3,22	-0,04	5
	a	R3	Ground beef			2,52	2,67	2,60	0,15	6
	a	R4	Ground beef			2,52	2,46	2,49	-0,06	7
	a	R8	Veal cutlet			2,88	2,70	2,79	-0,18	8
	a	R13	Beef meatballs			3,15	3,20	3,18	0,05	9
	a	R17	Veal cutlet			1,68	1,85	1,76	0,17	10
	b	B7	sausage meat			2,51	2,57	2,54	0,06	11
	b	D6	Chicken wings with paprika			2,62	2,00	2,31	-0,62	12
	b	D15	Fricadelles			3,26	3,23	3,24	-0,02	13
	b	D16	Bread rissolettes of pork			2,93	3,18	3,05	0,25	14
	b	3M41	Lasagne bolognaise			2,46	2,23	2,35	-0,23	15
	b	3M42	Lasagne bolognaise			2,88	2,53	2,70	-0,35	16
	b	3M57	Meat powder			4,28	4,00	4,14	-0,28	17
	b	3M58	Meat powder			4,38	4,00	4,19	-0,38	18
	b	3M59	Meat powder			4,23	4,20	4,22	-0,03	19
	c	B11	Toulouse sausage			1,88	2,04	1,96	0,17	20
	c	D12	Andouillettes			3,47	3,28	3,37	-0,19	21
	c	R24	Rilettes			2,88	2,96	2,92	0,08	22
	c	STX 1 (◊)	Smoked bacon (CA)			3,98	3,88	3,93	-0,11	23
	c	STX 2 (◊)	Bacon (CA)			5,04	4,96	5,00	-0,08	24
		Average difference of the category							-0,08	
		Standard deviation of differences							0,20	
Dairy products	a	3M27	Reblochon			3,08	3,11	3,10	0,03	1
	a	L6	Farmer goat cheese			3,53	2,48	3,00	-1,05	2
	a	L15	Farmer cheese			2,91	2,00	2,46	-0,91	3
	a	STX 3 (◊)	St Nectaire farmer (CA)			3,94	3,94	3,94	0,00	4
	a	STX 4 (◊)	Reblochon (CA)			5,66	5,68	5,67	0,02	5
	b	L2	Raw milk			2,19	2,00	2,10	-0,19	6
	b	L3	Raw cream			2,55	2,41	2,48	-0,14	7
	b	L4	raw cream			2,11	2,23	2,17	0,12	8
	b	L5	Raw cream			2,10	2,30	2,20	0,20	9
	b	L8	Goat raw milk			1,81	1,85	1,83	0,03	10
	b	L9	Raw milk			1,70	1,70	1,70	0,00	11
	b	R32	Raw milk			2,45	2,43	2,44	-0,02	12
	c	M1	Ice cream			2,57	2,40	2,48	-0,17	13
	c	A8	Strawberry frozen yoghurt			1,98	1,95	1,97	-0,02	14
	c	A9	Peach frozen yoghurt			1,84	1,90	1,87	0,07	15
	c	E10	Gouda			2,10	1,60	1,85	-0,49	16
	c	3M38	Goat cheese			2,54	2,00	2,27	-0,54	17
	c	R30	Saint Nectaire			3,97	4,18	4,07	0,21	18
	c	2007 D1	Tartine savoyarde			4,83	4,60	4,72	-0,23	19
	c	2007 D2	Cheese for raclette			4,06	4,36	4,21	0,30	20
	c	2007 AA5	Cheese from Savoie			3,56	3,15	3,35	-0,41	21
		Average difference of the category							-0,15	
		Standard deviation of differences							0,35	
Seafood products	a	D8	Filet of trout			1,44	2,00	1,72	0,56	1
	a	R27	Cod			1,60	1,78	1,69	0,18	2
	a	R28	Filet of loup			1,65	1,70	1,68	0,05	3
	a	R38	Filet of whiting			2,49	2,53	2,51	0,04	4
	a	STX 5 (◊)	Whiting filet (CA)			3,46	4,34	3,90	0,88	5
	b	R10	Shrimps			2,31	2,18	2,24	-0,14	6
	b	R11	Shrimps			1,81	1,78	1,80	-0,03	7
	b	R12	Shrimps			1,54	2,00	1,77	0,46	8
	b	STX 6 (◊)	Cooked mussels (CA)			4,99	5,00	5,00	0,01	9
	b	STX 7 (◊)	Cooked mussels (CA)			5,77	5,62	5,70	-0,15	10
	c	C20	Surimi			2,81	2,95	2,88	0,14	11
	c	3M35	Salmon lasagne			3,92	3,79	3,85	-0,14	12
	c	3M43	Salmon lasagne			3,54	3,46	3,50	-0,08	13
	c	R34	Srimps and surimi			3,44	3,41	3,43	-0,02	14
	c	R37	Cooked fish			2,51	2,52	2,51	0,01	15
	c	R39	Salmon carpaccio			2,24	2,34	2,29	0,10	16
		Average difference of the category							0,12	
		Standard deviation of differences							0,28	

Vegetables	a	A2	Mixed salad			**1,70**	2,00	1,85	0,30	1
	a	D7	Remoulade celery			**3,20**	3,09	3,15	-0,11	2
	a	D19	Mixed salad (carrot, celery)			**2,52**	2,26	2,39	-0,26	3
	a	R33	Mixed of salad			**2,60**	2,64	2,62	0,05	4
	a	R35	Remoulade celery			**3,67**	3,41	3,54	-0,26	5
	a	R36	Carrot tomato			**3,67**	3,56	3,61	-0,12	6
	a	2007 DD2	Mixed salad (CA)			**3,98**	3,90	3,94	-0,08	7
	b	2007 F1	Sliced vegetables (CA)			**5,53**	5,18	5,35	-0,36	8
	b	STX 8 (◊)	Gratted carrot (CA)			**4,49**	4,30	4,40	-0,19	9
	b	STX 9 (◊)	Red cabbage (CA)			**4,75**	4,70	4,72	-0,05	10
	b	STX 10 (◊)	Apple (CA)			**4,90**	4,90	4,90	-0,01	11
	b	STX 11 (◊)	Kiwi (CA)			**5,04**	4,95	5,00	-0,09	12
	c	3M28	Frozen vegetables			**2,20**	2,04	2,12	-0,16	13
	c	3M39	Sauerkaut			**2,04**	2,11	2,08	0,07	14
	c	STX 12 (◊)	Baked red beans (CA)			**4,46**	4,36	4,41	-0,10	15
	c	STX 13 (◊)	Baked green beans (CA)			**4,78**	4,73	4,76	-0,05	16
	c	STX 14 (◊)	Fruit salad (CA)			**5,04**	4,94	4,99	-0,10	17
		Average difference of the category							-0,09	
		Standard deviation of differences							0,15	

Egg products	a	M4	Pastry			2,08	2,18	2,13	0,10	1
	a	M5	Pastry			4,14	3,89	4,02	-0,25	2
	a	M7	Pastry			4,64	4,48	4,56	-0,17	3
	a	B5	Paris Brest			3,84	3,71	3,77	-0,13	4
	a	B13	Merveilleux chocolat			3,74	3,08	3,41	-0,67	5
	a	3M19	Eclair with coffee			3,13	3,56	3,34	0,43	6
	b	A7	Princesse d'été			4,08	3,90	3,99	-0,18	7
	b	B12	Chou Parisien vanille			2,95	2,23	2,59	-0,72	8
	b	C24	Peach melba			3,37	3,08	3,23	-0,29	9
	b	STX15 (◊)	Chocolate cake with custard (CA)			4,97	4,94	4,96	-0,02	10
	b	STX16 (◊)	Meringue with custard (CA)			5,48	5,28	5,38	-0,20	11
	c	D10	Hard egg with mayonnaise			2,48	2,64	2,56	0,17	12
	c	STX 17 (◊)	Mayonnaise (CA)			4,75	5,60	5,18	0,85	13
	c	STX 18 (◊)	Eggs "mimosa" (CA)			5,04	5,00	5,02	-0,05	14
	c	STX 19 (◊)	Eggs salad (CA)			5,34	5,34	5,34	0,00	15
	c	STX 20 (◊)	Pasteurized eggs (CA)			5,68	5,69	5,69	0,01	16
		Average difference of the category							-0,07	
		Standard deviation of differences							0,37	

Pet food	a	2007 Z1	Pellets for dog (CA)			**4,35**	**4,23**	4,29	-0,12	1
	a	2007 X1	Pellets for cat (CA)			**2,54**	**2,00**	2,27	-0,54	2
	a	2007 X2	Pellets for cat (CA)			**3,66**	**2,88**	3,27	-0,78	3
	a	2007 E1	Pellets for animals (CA)			**5,63**	**5,08**	5,36	-0,55	4
	a	2007 E2	Cereals for animals (CA)			**4,38**	**4,11**	4,25	-0,27	5
	a	2007 E3	Pellets for cat (CA)			**3,35**	**3,00**	3,18	-0,35	6
	b	2007 Z2	Animal meat waste			**4,33**	**4,18**	4,25	-0,16	7
	b	2007 W1	Animal meat waste (CA)			**2,77**	**2,53**	2,65	-0,24	8
	b	2007 W2	Animal meat waste (CA)			**3,83**	**3,34**	3,59	-0,49	9
	b	2007 W3	Animal meat waste (CA)			**3,71**	**3,26**	3,48	-0,45	10
	b	STX 21 (◊)	Pork offal (CA)			**4,78**	**4,67**	4,73	-0,11	11
	b	STX 22 (◊)	Beef offal (CA)			**5,08**	**4,95**	5,01	-0,13	12
	c	STX 23 (◊)	Dog terrine with chicken (CA)			**5,46**	**5,46**	5,46	0,00	13
	c	STX 24 (◊)	Dog terrine with beef (CA)			**4,76**	**4,77**	4,77	0,01	14
	c	STX 25 (◊)	Cat terrine with chicken (CA)			**5,08**	**4,91**	5,00	-0,17	15
	c	STX 28 (◊)	Dog terrine with salmon (CA)			**3,74**	**3,62**	3,68	-0,12	16
	c	STX29 (◊)	Cat terrine with beef and chicken (CA)			**3,89**	**3,81**	3,85	-0,09	17
		Average difference of the category							-0,27	
		Standard deviation of differences							0,22	111
Average difference all categories									-0,09	
Standard deviation of differences									0,29	

			Lower confidence limit	Upper confidence limit
n =	111			
β =	95%			
$T(0.025;110)$=	1,98176528		-0,67	0,48
n =	24			
β =	95%	Meat product	-0,51	0,35
$T(0.025;23)$=	2,06865761			
n =	21			
β =	95%	Dairy product	-0,91	0,60
$T(0.025;20)$=	2,08596345			
n =	16			
β =	95%	Seafood	-0,51	0,74
$T(0.025;15)$=	2,13144955			
n =	17			
β =	95%	Vegetables	-0,41	0,24
$T(0.025;16)$=	2,1199053			
n =	16			
β =	95%	Egg products and composite food	-0,89	0,75
$T(0.025;15)$=	2,13144955			
n =	17			
β =	95%	Pet food	-0,76	0,22
$T(0.025;16)$=	2,1199053			

Results not used in the statistical interpretation

Category	Type	#	Sample	ISO CFU/g	MA CFU/g	Mean	Difference	
	a	M11	Pork filet	**1,67**	**1,00**	1,34	-0,67	<4
	a	A5	Chicken cutlet	**1,44**	**1,00**	1,22	-0,44	<4
	a	A15	Beef meat	**1,00**	**1,00**	1,00	0,00	corr
	a	A16	Liver poultry	**2,00**	**1,00**	1,50	-1,00	corr
	a	3M06	Pork kidneys	**1,00**	**1,00**	1,00	0,00	corr
	a	3M17	Tongue of pork	**1,00**	**2,00**	1,50	1,00	corr
	a	3M22	Tongue of pork	**3,00**	**3,11**	3,06	0,11	corr
	a	3M80	Meat minced	**1,00**	**1,00**	1,00	0,00	corr
	a	3M94	Offals	**3,00**	**1,00**	2,00	-2,00	corr
	a	3M95	Horse steak	**3,00**	**1,00**	2,00	-2,00	corr
	a	L12	Quail wings	**1,00**	**1,00**	1,00	0,00	corr
	a	L13	Turkey filet	**2,00**	**1,48**	1,74	-0,52	corr
	a	R1	Ground beef	**1,00**	**1,00**	1,00	0,00	corr
	a	R14	Meat minced	**1,18**	**1,00**	1,09	-0,18	corr
	a	R25	Veal cutlet	0,00	**2,48**	1,24	2,48	corr
	a	R26	Veal cutlet	0,00	**2,20**	1,10	2,20	corr
Meat products	a	2007 CC3	Turkey cutlet	**1,00**	**1,90**	1,45	0,90	corr
	b	3M82	Merguez	**2,00**	**1,00**	1,50	-1,00	corr
	b	L14	Smoked sausage	**0,00**	**4,58**	2,29	4,58	corr
	c	M2	Sausage	**1,00**	**1,00**	1,00	0,00	corr
	c	A1	Cooked andouillette	**1,00**	**1,00**	1,00	0,00	corr
	c	A4	Ham	**2,06**	**2,00**	2,03	-0,06	corr
	c	A11	Sausage garlic	**1,00**	**1,00**	1,00	0,00	corr
	c	B10	Herbal sausage	**1,00**	**1,00**	1,00	0,00	corr
	c	3M23	Porl belly	**2,00**	**1,95**	1,98	-0,05	corr
	c	3M40	Raw ham	**1,00**	**2,00**	1,50	1,00	corr
	c	3M53	Smoked bacon	**1,00**	**1,00**	1,00	0,00	corr
	c	3M54	Chorizo	**1,00**	**1,00**	1,00	0,00	corr
	c	3M60	Bacon	**1,00**	**1,00**	1,00	0,00	corr
	c	3M61	Bacon	**1,00**	**1,00**	1,00	0,00	corr
	c	3M81	Sausage	**1,00**	**1,00**	1,00	0,00	corr
	c	3M93	Ham	**3,00**	**2,00**	2,50	-1,00	corr
	c	L11	Ham	**2,00**	**1,00**	1,50	-1,00	corr
	a	A3	Munster	0,00	0,00	0,00	0,00	corr
	a	3M01	Reblochon	**2,70**	0,00	1,35	-2,70	corr
	a	3M02	Reblochon	0,00	0,00	0,00	0,00	corr
	a	3M03	Reblochon	**3,08**	0,00	1,54	-3,08	corr
	a	3M04	Reblochon	0,00	0,00	0,00	0,00	corr
	a	3M12	Munster	0,00	0,00	0,00	0,00	corr
	a	3M21	Munster	**4,38**	**2,00**	3,19	-2,38	corr
	a	3M24	Reblochon	0,00	**3,28**	1,64	3,28	corr
	a	3M25	Reblochon	0,00	**3,36**	1,68	3,36	corr
	a	3M26	Reblochon	0,00	2,30	1,15	2,30	corr
	a	3M31	Morbier	**2,00**	**1,00**	1,50	-1,00	corr
	a	L7	Farmer goat cheese	**2,15**	**2,00**	2,07	-0,15	corr
	a	L16	St Nectaire farmer (CA)	**3,04**	**2,00**	2,52	-1,04	corr
	b	M3	Raw milk	**1,00**	**1,00**	1,00	0,00	corr
Dairy products	b	L1	Raw milk	**1,63**	**1,00**	1,31	-0,63	<4

Dairy products	b	L10	Raw milk	**2,40**	**2,00**	2,20	-0,40	corr
	b	2007 B2	Raw milk	**1,00**	**1,00**	1,00	0,00	corr
	b	2007C1	Raw milk	**1,00**	**1,00**	1,00	0,00	corr
	c	A10	Vanilla frozen yoghurt	**1,97**	**1,48**	1,72	-0,49	<4
	c	E7	Momolette	**1,70**	**2,00**	1,85	0,30	corr
	c	E8	Raclette	**1,78**	**1,00**	1,39	-0,78	corr
	c	E9	Gouda	**2,00**	**1,00**	1,50	-1,00	corr
	c	3M20	Gorgonzola	**2,00**	**1,00**	1,50	-1,00	corr
	c	3M30	Sheep cheese	**4,03**	**3,00**	3,52	-1,03	corr
	c	3M36	Goat cheese	**2,00**	**2,00**	2,00	0,00	corr
	c	R20	Goat milk	0,00	**2,53**	1,27	2,53	corr
	c	R21	Goat milk	0,00	**1,78**	0,89	1,78	corr
	c	2007 B3	Epoisses	**1,00**	**1,00**	1,00	0,00	corr
	c	2007 B4	Cheese St Priest	**1,00**	**1,00**	1,00	0,00	corr
	c	2007 Y3	Strawberry ice (CA)	**1,78**	**1,30**	1,54	-0,48	<4
Seafood products	a	M6	Filet of sole	0,00	**1,30**	0,65	1,30	corr
	a	2007 AA6	Filet of hake	**1,00**	**1,00**	1,00	0,00	corr
	a	2007 CC2	Filet of cod	**1,00**	**1,00**	1,00	0,00	corr
	a	2007 A1	Filet of fish: "empereur"	**1,51**	**1,60**	1,56	0,09	<4
	b	R9	Shrimps	**1,00**	**2,00**	1,50	1,00	corr
	c	A13	Salad with surimi	**3,00**	0,00	1,50	-3,00	corr
	c	C14	Sardine	0,00	0,00	0,00	0,00	corr
	c	C15	Smoked salmon	0,00	**2,95**	1,48	2,95	corr
	c	C17	Salmon with dill	0,00	**2,00**	1,00	2,00	corr
	c	C19	Pre-baked salmon	**1,24**	**1,00**	1,12	-0,24	<4
	c	C21	Assiette marine	0,00	0,00	0,00	0,00	corr
	c	3M05	Surimi	**1,00**	**1,00**	1,00	0,00	corr
	c	3M18	Shrimp and surimi	**1,74**	**1,00**	1,37	-0,74	corr
	c	3M32	Filet of sole	**3,00**	**1,00**	2,00	-2,00	corr
	c	3M44	Smoked salmon	**1,00**	**1,00**	1,00	0,00	corr
	c	3M51	Saled of shrimp	**1,30**	**1,70**	1,50	0,40	<4
	c	3M52	Terrine of langoustine	0,00	**1,00**	0,50	1,00	corr
	c	2007AA4	Mix of shrimps	**1,00**	**1,00**	1,00	0,00	corr
Vegetables	a	A12	Mixed salad	**1,00**	**1,00**	1,00	0,00	corr
	a	A14	Mixed salad (white cabbage, ham)	**2,04**	**1,48**	1,76	-0,56	<4
	a	3M14	Mixed salad (Potato, ham, tomato)	**1,00**	**1,00**	1,00	0,00	corr
	a	3M37	Miwed salad (rice, peppers,	0,00	**1,00**	0,50	1,00	corr
	a	R5	Mixed salad (potato, tuna)	**1,00**	**1,00**	1,00	0,00	corr
	a	R6	Mixed vegetables	**1,00**	**1,00**	1,00	0,00	corr
	a	R7	Mixed salad (grapped	**1,00**	**1,00**	1,00	0,00	corr
	a	R15	Tabbouleh	**1,30**	**1,00**	1,15	-0,30	<4
	a	2007 A2	Pastas salad	**1,30**	**1,00**	1,15	-0,30	<4
	b	3M16	Cabbage	**2,00**	**2,00**	2,00	0,00	corr
	c	3M08	Vegetables for couscous	**1,00**	**1,00**	1,00	0,00	corr
	c	3M29	Powder of cocoa	**2,00**	**2,00**	2,00	0,00	corr
Egg products	a	3M07	Pastry	**3,00**	**1,00**	2,00	-2,00	corr
	a	3M13	Pastry	**1,00**	**1,00**	1,00	0,00	corr
	b	B3	Carré à la crème	0,00	**4,04**	2,02	4,04	corr
	b	3M11	Toffee cream	**1,00**	**1,00**	1,00	0,00	corr
	b	2007 CC1	Flan cake	**1,00**	**1,00**	1,00	0,00	corr
	c	3M09	Egg flow	**0,00**	**0,00**	0,00	0,00	corr
	c	3M10	Egg flow	**0,00**	**0,00**	0,00	0,00	corr
Pet food	a	2007 C2	Pellets for animals	**1,00**	**1,00**	1,00	0,00	corr
	a	2007 BB3	Pellets for animals	**1,00**	**1,00**	1,00	0,00	corr
	a	2007 BB4	Pellets for animals	**1,00**	**1,00**	1,00	0,00	corr
	a	2007 AA1	Pellets for dog	**1,00**	**1,00**	1,00	0,00	corr
	a	2007 AA2	Pellets for cat	**1,00**	**1,00**	1,00	0,00	corr
	a	2007 AA3	Pellets for cat	**1,00**	**1,00**	1,00	0,00	corr
	a	2007 X3	Flour for fish (CA)	**1,35**	**1,00**	1,18	-0,35	corr
	c	2007 B1	Dry sausage for animals	**3,00**	**1,00**	2,00	-2,00	corr
	c	2007 AA4	Meat terrine for animals	**1,00**	**1,00**	1,00	0,00	corr
	c	2007 Y1	Lamb and vegetables terrine (CA)	**1,54**	**1,00**	1,27	-0,54	<4
	c	2007 Y2	Lamb and vegetables terrine (CA)	**2,06**	**1,00**	1,53	-1,06	<4

Appendix K: accuracy profile - raw results

Matrix (category)	Sample	Code strain/ strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker +				Final concentration	CFU/Petrifilm				Confirmation STX disk	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Meat products	Ground beef	STA.1.28/ *S.aureus*	[illegible]	1.00E+02	15	2	/	/	1.5E+02	13	1	/	/	13	130
			[illegible]		18	2	/	/	1.8E+02	12	1	/	/	11	110
			[illegible]		12	2	/	/	1.3E+02	15	0	/	/	15	150
			[illegible]		16	1	/	/	1.5E+02	10	2	/	/	10	100
			[illegible]		12	2	/	/	1.3E+02	11	1	/	/	11	110
			[illegible]	5.00E+03	/	122	13	/	1.2E+04	/	89	5	/	82	8200
			[illegible]		/	115	15	/	1.2E+04	/	111	13	/	102	10200
			[illegible]		/	104	12	/	1.1E+04	/	91	10	/	87	8700
			[illegible]		/	118	10	/	1.2E+04	/	107	10	/	104	10400
			[illegible]		/	109	14	/	1.1E+04	/	101	7	/	95	9500
			[illegible]	1.00E+05	/		78	10	8.0E+04	/	/	84	7	84	84000
			[illegible]		/	/	85	9	8.5E+04	/	/	72	10	70	70000
			[illegible]		/	/	84	12	8.7E+04	/	/	99	8	95	95000
			[illegible]		/	/	95	14	9.9E+04	/	/	88	6	85	85000
			[illegible]		/	/	101	10	1.0E+05	/	/	71	7	71	71000
Meat products			[illegible]	1.00E+02	15	2	/	/	1.5E+02	12	2	/	/	12	120
			[illegible]		20	1	/	/	1.9E+02	14	1	/	/	13	130
			[illegible]		14	3	/	/	1.5E+02	15	2	/	/	14	140
			[illegible]		18	2	/	/	1.8E+02	12	2	/	/	12	120
			[illegible]		18	2	/	/	1.8E+02	11	1	/	/	10	100
			[illegible]	5.00E+03	/	92	9	/	9.2E+03	/	91	8		89	8900
			[illegible]		/	103	11	/	1.0E+04	/	93	10	/	89	8900
			[illegible]		/	89	14	/	9.4E+03	/	83	10	/	78	7800
			[illegible]		/	84	10	/	8.5E+03	/	70	9	/	68	6800
			[illegible]		/	100	12	/	1.0E+04	/	96	8	/	92	9200
			[illegible]	1.00E+05	/		82	9	8.3E+04	/	/	87	11	84	84000
			[illegible]		/	/	85	11	8.7E+04	/	/	84	7	82	82000
			[illegible]		/	/	99	10	9.9E+04	/	/	89	13	82	82000
			[illegible]		/	/	96	11	9.7E+04	/	/	75	10	71	71000
			[illegible]		/	/	101	12	1.0E+05	/	/	82	8	80	80000

Matrix (category)	Sample	Code strain/strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker +				Final concentration	CFU/Petrifilm				Confirmation STX disk	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Dairy products	Raw milk cheese	STA.1.25/ *S. aureus*	L1T1R1	1.00E+02	14	2	/	/	1.5E+02	9	1	/	/	9	90
			L1T1R2		16	1	/	/	1.5E+02	11	0	/	/	10	100
			L1T1R3		13	1	/	/	1.3E+02	11	1	/	/	11	110
			L1T1R4		15	1	/	/	1.5E+02	10	1	/	/	10	100
			L1T1R5		15	2	/	/	1.5E+02	14	2	/	/	12	120
			L1T2R1	5.00E+03	/	127	15	/	1.3E+04	/	129	14	/	110	11000
			L1T2R2		/	142	13	/	1.4E+04	/	124	17	/	105	10500
			L1T2R3		/	149	17	/	1.5E+04	/	93	12	/	93	9300
			L1T2R4		/	135	12	/	1.3E+04	/	117	14	/	102	10200
			L1T2R5		/	112	14	/	1.1E+04	/	86	11	/	84	8400
			L1T3R1	1.00E+05	/	/	142	16	1.4E+05	/	/	114	14	101	101000
			L1T3R2		/	/	136	14	1.4E+05	/	/	118	13	104	104000
			L1T3R3		/	/	147	14	1.5E+05	/	/	116	17	108	108000
			L1T3R4		/	/	145	15	1.5E+05	/	/	117	12	110	110000
			L1T3R5		/	/	129	13	1.3E+05	/	/	104	10	101	101000
Dairy products			L2T1R1	1.00E+02	15	2	/	/	1.5E+02	12	2	/	/	10	100
			L2T1R2		18	1	/	/	1.7E+02	9	2	/	/	9	90
			L2T1R3		12	2	/	/	1.3E+02	13	1	/	/	13	130
			L2T1R4		16	2	/	/	1.6E+02	11	1	/	/	11	110
			L2T1R5		13	3	/	/	1.5E+02	11	1	/	/	10	100
			L2T2R1	5.00E+03	/	135	12	/	1.3E+04	/	113	15	/	98	9800
			L2T2R2		/	142	17	/	1.4E+04	/	119	18	/	107	10700
			L2T2R3		/	138	15	/	1.4E+04	/	127	17	/	118	11800
			L2T2R4		/	135	15	/	1.4E+04	/	102	20	/	100	10000
			L2T2R5		/	137	16	/	1.4E+04	/	99	12	/	98	9800
			L2T3R1	1.00E+05	/	/	142	21	1.5E+05	/	/	98	12	92	92000
			L2T3R2		/	/	146	18	1.5E+05	/	/	93	9	90	90000
			L2T3R3		/	/	129	15	1.3E+05	/	/	89	11	85	85000
			L2T3R4		/	/	135	17	1.4E+05	/	/	94	13	91	91000
			L2T3R5		/	/	128	17	1.3E+05	/	/	89	10	89	89000

Matrix (category)	Sample	Code strain /strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker + RPF)				Final concentration	CFU/Petrifilm				Confirmatio n STX disk	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Seafood Products	Whiting fillet	STA.1.24/ *S.aureus*	L1T1R1	1.00E+02	16	2	/	/	1.6E+02	16	2	/	/	14	140
			L1T1R		18	2	/	/	1.8E+02	14	1	/	/	13	130
			L1T1R		15	3	/	/	1.6E+02	18	2	/	/	17	170
			L1T1R		21	2	/	/	2.1E+02	13	2	/	/	13	130
			L1T1R		19	1	/	/	1.8E+02	16	1	/	/	15	150
			L1T2R	5.00E+03	/		22	2	2.2E+04	/	/	24	1	22	22000
			L1T2R		/	/	24	3	2.5E+04	/	/	17	2	15	15000
			L1T2R		/	/	19	3	2.0E+04	/	/	24	2	20	20000
			L1T2R		/	/	18	1	1.7E+04	/	/	22	1	18	18000
			L1T2R		/	/	20	2	2.0E+04	/	/	24	3	22	22000
			L1T3R	1.00E+05	/	/	>150	21	2.1E+05	/	/	>15	16	16	160000
			L1T3R		/	/	>150	19	1.9E+05	/	/	>15	22	22	220000
			L1T3R		/	/	>150	20	2.0E+05	/	/	>15	17	17	170000
			L1T3R		/	/	>150	20	2.0E+05	/	/	>15	14	14	140000
			L1T3R		/	/	>150	17	1.7E+05	/	/	>15	14	14	140000
Seafood Products			L2T1R	1.00E+02	16	2	/	/	1.6E+02	14	1	/	/	14	140
			L2T1R		16	3	/	/	1.7E+02	19	1	/	/	18	180
			L2T1R		19	3	/	/	2.0E+02	13	2	/	/	13	130
			L2T1R		20	2	/	/	2.0E+02	15	2	/	/	14	140
			L2T1R		15	1	/	/	1.5E+02	15	1	/	/	15	150
			L2T2R	5.00E+03	/	/	19	1	1.8E+04	/	/	24	1	20	20000
			L2T2R		/	/	22	2	2.2E+04	/	/	31	2	28	28000
			L2T2R		/	/	20	2	2.0E+04	/	/	20	2	18	18000
			L2T2R		/	/	21	3	2.2E+04	/	/	19	3	19	19000
			L2T2R		/	/	22	2	2.2E+04	/	/	23	2	20	20000
			L2T3R	1.00E+05	/	/	>150	18	1.8E+05	/	/	>15	14	13	130000
			L2T3R		/	/	>150	22	2.2E+05	/	/	>15	20	19	190000
			L2T3R		/	/	>150	21	2.1E+05	/	/	>15	12	12	120000
			L2T3R		/	/	>150	19	1.9E+05	/	/	>15	12	11	110000
			L2T3R		/	/	>150	19	1.9E+05	/	/	>15	10	10	100000

Matrix (category)	Sample	Code strain /strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker +				Final concentration	CFU/Petrifilm				Confirmation STX disk	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Vegetal products	Grated carrot	STA.1.26 / *S. aureus*	L1T1R1	5.00E+02	17	2	/	/	1.7E+02	9	1	/	/	8	80
			L1T1R2		15	2	/	/	1.5E+02	11	1	/	/	11	110
			L1T1R3		19	3	/	/	2.0E+02	8	2	/	/	8	80
			L1T1R4		20	2	/	/	2.0E+02	10	1	/	/	9	90
			L1T1R5		22	3	/	/	2.3E+02	12	1	/	/	11	110
			L1T2R1	5.00E+03	/	135	12	/	1.3E+04	/	94	8	/	83	8300
			L1T2R2		/	142	18	/	1.5E+04	/	77	9	/	71	7100
			L1T2R3		/	128	15	/	1.3E+04	/	77	7	/	75	7500
			L1T2R4		/	139	19	/	1.4E+04	/	76	8	/	68	6800
			L1T2R5		/	145	15	/	1.5E+04	/	75	5	/	72	7200
			L1T3R1	1.00E+05	/		>150	19	1.9E+05	/	/	99	9	99	99000
			L1T3R2		/	/	>150	17	1.7E+05	/	/	100	10	98	98000
			L1T3R3		/	/	>150	17	1.7E+05	/	/	92	9	89	89000
			L1T3R4		/	/	>150	16	1.6E+05	/	/	94	13	93	93000
			L1T3R5		/	/	>150	20	2.0E+05	/	/	95	9	84	84000
Vegetal products			L2T1R1	5.00E+02	14	1	/	/	1.4E+02	12	1	/	/	11	110
			L2T1R2		10	2	/	/	1.1E+02	14	1	/	/	13	130
			L2T1R3		13	0	/	/	1.2E+02	11	0	/	/	11	110
			L2T1R4		12	1	/	/	1.2E+02	10	1	/	/	10	100
			L2T1R5		12	1	/	/	1.2E+02	12	1	/	/	10	100
			L2T2R1	5.00E+03	/	122	21	/	1.3E+04	/	90	7	/	87	8700
			L2T2R2		/	135	15	/	1.4E+04	/	90	6	/	88	8800
			L2T2R3		/	128	17	/	1.3E+04	/	77	10	/	75	7500
			L2T2R4		/	118	18	/	1.2E+04	/	81	8	/	79	7900
			L2T2R5		/	142	18	/	1.5E+04	/	81	10	/	78	7800
			L2T3R1	1.00E+05	/		>150	18	1.8E+05	/	/	86	11	77	77000
			L2T3R2		/	/	>150	21	2.1E+05	/	/	108	14	102	102000
			L2T3R3		/	/	>150	15	1.5E+05	/	/	106	4	97	97000
			L2T3R4		/	/	>150	12	1.2E+05	/	/	85	8	74	74000
			L2T3R5		/	/	>150	19	1.9E+05	/	/	85	5	78	78000

Matrix (category)	Sample	Code strain/ strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker +				Final concentration	CFU/Petrifilm				Confirmation STX disk	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Pastries and eggs products	Pasteurized whole egg	STA.1.8/ *S. aureus*	L1T1R1	1.00E+02	18	2	/	/	**1.8E+02**	18	1	/	/	16	**160**
			L1T1R		20	2	/	/	**2.0E+02**	14	2	/	/	14	**140**
			L1T1R2		19	1	/	/	**1.8E+02**	16	1	/	/	15	**150**
			L1T1R		21	3	/	/	**2.2E+02**	17	0	/	/	17	**170**
			L1T1R		20	2	/	/	**2.0E+02**	19	1	/	/	18	**180**
			L1T2R	5.00E+03	/	99	12	/	**1.0E+04**	/	106	9	/	98	**9800**
			L1T2R1		/	121	10	/	**1.2E+04**	/	92	12	/	84	**8400**
			L1T2R2		/	113	15	/	**1.2E+04**	/	91	9	/	88	**8800**
			L1T2R		/	118	17	/	**1.2E+04**	/	79	11	/	75	**7500**
			L1T2R		/	121	12	/	**1.2E+04**	/	99	12	/	98	**9800**
			L1T5R	1.00E+05	/	/	122	12	**1.2E+05**	/	/	102	11	97	**97000**
			L1T5R1		/	/	148	10	**1.4E+05**	/	/	88	11	85	**85000**
			L1T5R		/	/	115	15	**1.2E+05**	/	/	108	12	108	**108000**
			L1T5R		/	/	119	15	**1.2E+05**	/	/	104	10	102	**102000**
			L1T5R		/	/	132	13	**1.3E+05**	/	/	104	9	100	**100000**
Pastries and eggs products			L2T1R	1.00E+02	18	2	/	/	**1.8E+02**	18	3	/	/	17	**170**
			L2T1R1		18	2	/	/	**1.8E+02**	18	1	/	/	18	**180**
			L2T1R		18	3	/	/	**1.9E+02**	19	2	/	/	18	**180**
			L2T1R		15	1	/	/	**1.5E+02**	17	2	/	/	17	**170**
			L2T1R		19	2	/	/	**1.9E+02**	13	0	/	/	13	**130**
			L2T2R	5.00E+03	/	112	9	/	**1.1E+04**	/	81	10	/	78	**7800**
			L2T2R1		/	126	13	/	**1.3E+04**	/	113	7	/	110	**11000**
			L2T2R		/	102	11	/	**1.0E+04**	/	89	9	/	85	**8500**
			L2T2R		/	118	15	/	**1.2E+04**	/	97	9	/	90	**9000**
			L2T2R		/	109	10	/	**1.1E+04**	/	95	8	/	92	**9200**
			L2T5R	1.00E+05	/		111	12	**1.1E+05**	/	/	101	9	97	**97000**
			L2T5R1		/	/	122	9	**1.2E+05**	/	/	98	13	95	**95000**
			L2T5R		/	/	109	10	**1.1E+05**	/	/	108	7	104	**104000**
			L2T5R		/	/	124	12	**1.2E+05**	/	/	109	10	108	**108000**
			L2T5R		/	/	113	12	**1.1E+05**	/	/	92	14	90	**90000**

Matrix (category)	Sample	Code strain /strain	Lot	Target level (CFU/g)	RM: NF EN ISO 6888-2					AM: Petrifilm Staph Express					
					CFU/plate (Baird Parker +				Final concentration	CFU/Petrifilm				ConfirmationST	Final concentration
					Dilution				CFU/g	Dilution				Number of colonie confirmed	CFU/g
					10	100	1000	10000		10	100	1000	10000		
Pet food	Dog terrine	STA.1.29/ *S. aureus*	L1T1R1	1.00E+02	15	2	/	/	1.5E+02	10	1	/	/	9	90
			L1T1R2		17	2	/	/	1.7E+02	11	2	/	/	10	100
			L1T1R3		18	2	/	/	1.8E+02	9	1	/	/	9	90
			L1T1R4		16	2	/	/	1.6E+02	9	1	/	/	9	90
			L1T1R5		16	2	/	/	1.6E+02	12	1	/	/	11	110
			L1T2R1	5.00E+03	/	/	19	3	2.0E+04	/	/	21	2	19	19000
			L1T2R2		/	/	24	3	2.5E+04	/	/	17	3	17	17000
			L1T2R3		/	/	16	2	1.6E+04	/	/	19	1	19	19000
			L1T2R4		/	/	22	3	2.3E+04	/	/	16	2	16	16000
			L1T2R5		/	/	23	4	2.5E+04	/	/	17	0	17	17000
			L1T3R1	1.00E+05	/	/	>150	24	2.4E+05	/	/	>1[illegible]	16	16	160000
			L1T3R2		/	/	>150	19	1.9E+05	/	/	>1[illegible]	16	15	150000
			L1T3R3		/	/	>150	22	2.2E+05	/	/	>1[illegible]	20	20	200000
			L1T3R4		/	/	>150	23	2.3E+05	/	/	>1[illegible]	16	14	140000
			L1T3R5		/	/	>150	23	2.3E+05	/	/	>1[illegible]	16	15	150000
Pet food			L2T1R1	1.00E+02	14	2	/	/	1.5E+02	10	2	/	/	9	90
			L2T1R2		18	2	/	/	1.8E+02	12	1	/	/	11	110
			L2T1R3		16	2	/	/	1.6E+02	11	1	/	/	11	110
			L2T1R4		15	3	/	/	1.6E+02	11	2	/	/	11	110
			L2T1R5		18	1	/	/	1.7E+02	14	0	/	/	13	130
			L2T2R1	5.00E+03	/	/	21	2	2.1E+04	/	/	13	2	12	12000
			L2T2R2		/	/	18	3	1.9E+04	/	/	18	2	15	15000
			L2T2R3		/	/	19	3	2.0E+04	/	/	13	3	13	13000
			L2T2R4		/	/	20	2	2.0E+04	/	/	17	1	16	16000
			L2T2R5		/	/	20	2	2.0E+04	/	/	24	2	20	20000
			L2T3R1	1.00E+05	/	/	>150	18	1.8E+05	/	/	>1[illegible]	16	15	150000
			L2T3R2		/	/	>150	15	1.5E+05	/	/	>1[illegible]	15	15	150000
			L2T3R3		/	/	>150	15	1.5E+05	/	/	>1[illegible]	16	14	140000
			L2T3R4		/	/	>150	16	1.6E+05	/	/	>1[illegible]	17	15	150000
			L2T3R5		/	/	>150	19	1.9E+05	/	/	>1[illegible]	13	13	130000

APPENDIX L - Artificial contaminations

Petrifilm® Staph Express Count plate A + B (STX)

#	Sample name	Category	Type	Strain			Injury protocol	Mesured stress
				Strain	Code	Origin		
3054762	Chopped steak	Meat product	a	*Staphylococcus aureus*	BYEL73	Raw turkey	Seeding 72h at 3±2°C	/
3054763	Meat steak	Meat product	a	*Staphylococcus aureus*	BYEL73	Raw turkey	Seeding 72h at 3±2°C	/
3054838	Chicken aiguillette with curry sauce	Meat product	b	*Staphylococcus aureus*	CFQ207	Chicken leg	Seeding 72h at 3±2°C	/
3054839	Pork in sauce	Meat product	b	*Staphylococcus aureus*	CFQ207	Chicken leg	Seeding 72h at 3±2°C	/
3054840	Duck rillette	Meat product	c	*Staphylococcus aureus*	TYG310	Sausage	Seeding 72h at 3±2°C	/
3054841	Rabbit pate	Meat product	c	*Staphylococcus aureus*	TYG310	Sausage	Seeding 72h at 3±2°C	/
3054775	Raw milk Parmesan	Dairy product	a	*Staphylococcus aureus*	UCN908	Raw milk cheese	Seeding 72h at 3±2°C	/
3054776	Tomme de Savoie with raw milk	Dairy product	a	*Staphylococcus aureus*	UCN908	Raw milk cheese	Seeding 72h at 3±2°C	/
3054777	Raw milk goat	Dairy product	a	*Staphylococcus aureus*	UCN908	Raw milk cheese	Seeding 72h at 3±2°C	/
3054778	Farmhouse raw milk	Dairy product	b	*Staphylococcus aureus*	HCU266	Custard	Seeding 72h at 3±2°C	/
3054779	Raw cream	Dairy product	b	*Staphylococcus aureus*	HCU266	Custard	Seeding 72h at 3±2°C	/
3054780	Raw cream	Dairy product	b	*Staphylococcus aureus*	HCU266	Custard	Seeding 72h at 3±2°C	/
3054845	Pasteurized goat's milk	Dairy product	c	*Staphylococcus aureus*	GAU875	Thermized sheep's milk cheese	Seeding 72h at 3±2°C	/
3054846	Pasteurized sheep's milk	Dairy product	c	*Staphylococcus aureus*	GAU875	Thermized sheep's milk cheese	Seeding 72h at 3±2°C	/
3054847	Pasteurized cow's milk	Dairy product	c	*Staphylococcus aureus*	GAU875	Thermized sheep's milk cheese	Seeding 72h at 3±2°C	/
3054842	Mackerel	Seafood product	a	*Staphylococcus aureus*	ACY440	Shrimp	Seeding 72h at 3±2°C	/
3054843	Salmon	Seafood product	a	*Staphylococcus aureus*	ACY440	Shrimp	Seeding 72h at 3±2°C	/
3054844	Sardine fillet	Seafood product	a	*Staphylococcus aureus*	ACY440	Shrimp	Seeding 72h at 3±2°C	/
3054770	Octopus carpaccio	Seafood product	b	*Staphylococcus aureus*	ACY440	Shrimp	Seeding 72h at 3±2°C	/
3054771	Cooked shrimps	Seafood product	b	*Staphylococcus aureus*	ACY440	Shrimp	Seeding 72h at 3±2°C	/
3054772	Fish buns	Seafood product	c	*Staphylococcus aureus*	BATB46	Smoked herring	Seeding 72h at 3±2°C	/
3054773	Codfish brandade	Seafood product	c	*Staphylococcus aureus*	BATB46	Smoked herring	Seeding 72h at 3±2°C	/

APPENDIX L - Artificial contaminations

#	Sample name	Category	Type	Strain			Injury protocol	Mesured stress
				Strain	Code	Origin		
3054848	Cucumber with cream sauce	Vegetables	a	*Staphylococcus aureus*	XMJ107	Collection strain	Seeding 72h at 3±2°C	/
3054849	Tomato salad, corn, soya germ, vinaigrette	Vegetables	a	*Staphylococcus aureus*	XMJ107	Collection strain	Seeding 72h at 3±2°C	/
3054850	Mashed vegetables	Vegetables	b	*Staphylococcus aureus*	XMN156	Collection strain	Seeding 72h at 3±2°C	/
3054851	Grated carrot	Vegetables	b	*Staphylococcus aureus*	XMN156	Collection strain	Seeding 72h at 3±2°C	/
3054852	Dauphinois gratin	Vegetables	c	*Staphylococcus aureus*	XMQ556	Collection strain	Seeding 72h at 3±2°C	/
3054853	Mirabelle plum tart	Vegetables	c	*Staphylococcus aureus*	XMQ556	Collection strain	Seeding 72h at 3±2°C	/
3054790	Eclair with coffee	Pastries Egg products	a	*Staphylococcus aureus*	HCU266	Custard	Seeding 72h at 3±2°C	/
3054791	Paris Brest	Pastries Egg products	a	*Staphylococcus aureus*	HCU266	Custard	Seeding 72h at 3±2°C	/
3054792	Paris Brest	Pastries Egg products	a	*Staphylococcus aureus*	HCU266	Custard	Seeding 72h at 3±2°C	/
3054854	Egg custard flan	Pastries Egg products	b	*Staphylococcus aureus*	XMQ556	Collection strain	Seeding 72h at 3±2°C	/
3054855	Custard	Pastries Egg products	b	*Staphylococcus aureus*	XMQ556	Collection strain	Seeding 72h at 3±2°C	/
3054856	Custard cream	Pastries Egg products	b	*Staphylococcus aureus*	XMQ556	Collection strain	Seeding 72h at 3±2°C	/
3054796	Hard-boiled egg	Pastries Egg products	c	*Staphylococcus aureus*	KNWQ77	Composite food	Seeding 72h at 3±2°C	/
3054797	Liquid whole egg	Pastries Egg products	c	*Staphylococcus aureus*	KNWQ77	Composite food	Seeding 72h at 3±2°C	/
3054799	Homemade mayonnaise	Pastries Egg products	c	*Staphylococcus aureus*	KNWQ77	Composite food	Seeding 72h at 3±2°C	/
3054745	Rabbit food	Pet food	a	*Staphylococcus aureus*	BYEL73	Raw turkey	Spiking - 10 ' à 56°c	0,5
3054746	Cat food	Pet food	a	*Staphylococcus aureus*	BYEL73	Raw turkey	Spiking - 10 ' à 56°c	0,5
3054800	Beef meat	Pet food	b	*Staphylococcus aureus*	BYEL73	Raw turkey	Seeding 72h at 3±2°C	/
3054801	Chicken neck skin	Pet food	b	*Staphylococcus aureus*	BYEL73	Raw turkey	Seeding 72h at 3±2°C	/
3054857	Fish pate	Pet food	c	*Staphylococcus aureus*	BATB46	Smoked herring	Seeding 72h at 3±2°C	/
3054858	Fish jelly	Pet food	c	*Staphylococcus aureus*	BATB46	Smoked herring	Seeding 72h at 3±2°C	/

Appendix M: relative trueness - raw results

Category	Type	#	Sample	Strain	Injury protocol	Petrifilm™ Staph Express Count Plate (STX) -Visual reading 24h ± 2h -37°C					Petrifilm™ Staph Express Count Plate (STX) -Automatic reader (PPRA) 24h ± 2h -37°C				
						dil 1	CFU	dil 2	CFU	Result (CFU/g)	dil 1	CFU	dil 2	CFU	Result (CFU/g)
Meat products	a	3054762	Chopped steak	BYEL73 - *Staphylococcus aureus*	Seeding	-2	5	-3	0	**5,0E+02**	-2	5	-3	0	**5,0E+02**
	a	3054763	Meat steak	BYEL73 - *Staphylococcus aureus*	Seeding	-1	67	-2	8	**6,7E+02**	-1	66	-2	8	**6,6E+02**
	b	3054838	Chicken aiguillette with curry sauce	CFQ207 - *Staphylococcus aureus*	Seeding	-3	128	-4	13	**1,3E+05**	-3	128	-4	13	**1,3E+05**
	b	3054839	Pork in sauce	CFQ207 - *Staphylococcus aureus*	Seeding	-1	32	-2	0	**3,2E+02**	-1	33	-2	0	**3,3E+02**
	c	3054840	Duck rillette	TYG310 - *Staphylococcus aureus*	Seeding	-2	106	-3	9	**1,1E+04**	-2	106	-3	8	**1,1E+04**
	c	3054841	Rabbit pate	TYG310 - *Staphylococcus aureus*	Seeding	-3	42	-4	7	**4,2E+04**	-3	42	-4	8	**4,2E+04**
Dairy products	a	3054775	Raw milk Parmesan	UCN908 - *Staphylococcus aureus*	Seeding	-2	90	-3	9	**9,0E+03**	-2	97	-3	9	**9,7E+03**
	a	3054776	Tomme de Savoie with raw milk	UCN908 - *Staphylococcus aureus*	Seeding	-3	91	-4	9	**9,1E+04**	-3	91	-4	9	**9,1E+04**
	a	3054777	Raw milk goat	UCN908 - *Staphylococcus aureus*	Seeding	-2	84	-3	13	**8,8E+03**	-2	88	-3	27	**1,1E+04**
	b	3054778	Farmhouse raw milk	HCU266 - *Staphylococcus aureus*	Seeding	-2	76	-3	12	**8,0E+03**	-2	100	-3	25	**1,1E+04**
	b	3054779	Raw cream	HCU266 - *Staphylococcus aureus*	Seeding	-2	9	-3	0	**9,0E+02**	-2	9	-3	0	**9,0E+02**
	b	3054780	Raw cream	HCU266 - *Staphylococcus aureus*	Seeding	-3	10	-4	2	**1,0E+04**	-3	10	-4	2	**1,0E+04**
	c	3054845	Pasteurized goat's milk	GAU875 - *Staphylococcus aureus*	Seeding	-1	31	-2	4	**3,1E+02**	-1	25	-2	4	**2,5E+02**
	c	3054846	Pasteurized sheep's milk	GAU875 - *Staphylococcus aureus*	Seeding	-1	17	-2	3	**1,7E+02**	-1	12	-2	3	**1,2E+02**
	c	3054847	Pasteurized cow's milk	GAU875 - *Staphylococcus aureus*	Seeding	-1	27	-2	3	**2,7E+02**	-1	24	-2	3	**2,4E+02**
Seafood products	a	3054842	Mackerel	ACY440 - *Staphylococcus aureus*	Seeding	-3	36	-4	5	**3,6E+04**	-3	37	-4	5	**3,7E+04**
	a	3054843	Salmon	ACY440 - *Staphylococcus aureus*	Seeding	-1	4	-2	1	**4,0E+01**	-1	4	-2	1	**3,0E+01**
	a	3054844	Sardine fillet	ACY440 - *Staphylococcus aureus*	Seeding	-3	5	-4	1	**5,0E+03**	-3	4	-4	1	**4,0E+03**
	b	3054770	Octopus carpaccio	ACY440 - *Staphylococcus aureus*	Seeding	-1	79	-2	13	**8,4E+02**	-1	81	-2	13	**8,5E+02**
	b	3054771	Cooked shrimps	ACY440 - *Staphylococcus aureus*	Seeding	-1	88	-2	10	**8,9E+02**	-1	84	-2	10	**8,5E+02**
	c	3054772	Fish buns	BATB46 - *Staphylococcus aureus*	Seeding	-2	83	-3	7	**8,3E+03**	-2	81	-3	7	**8,1E+03**
	c	3054773	Codfish brandade	BATB46 - *Staphylococcus aureus*	Seeding	-1	20	-2	4	**2,0E+02**	-1	20	-2	4	**2,0E+02**
Vegetables	a	3054848	Cucumber with cream sauce	XMJ107 - *Staphylococcus aureus*	Seeding	-2	4	-3	0	**4,0E+02**	-2	4	-3	0	**4,0E+02**
	a	3054849	Tomato salad, corn, soya germ, vinaigrette	XMJ107 - *Staphylococcus aureus*	Seeding	-3	14	-4	1	**1,4E+04**	-3	14	-4	1	**1,4E+04**
	b	3054850	Mashed vegetables	XMN156 - *Staphylococcus aureus*	Seeding	-2	112	-3	7	**1,1E+04**	-2	116	-3	6	**1,2E+04**
	b	3054851	Grated carrot	XMN156 - *Staphylococcus aureus*	Seeding	-1	0	-2	0	**<10**	-1	0	-2	0	**<10**
	c	3054852	Dauphinois gratin	XMQ556 - *Staphylococcus aureus*	Seeding	-3	93	-4	17	**1,0E+05**	-3	99	-4	18	**1,1E+05**
	c	3054853	Mirabelle plum tart	XMQ556 - *Staphylococcus aureus*	Seeding	-2	35	-3	3	**3,5E+03**	-2	35	-3	3	**3,5E+03**
Pastries Egg products	a	3054790	Eclair with coffee	HCU266 - *Staphylococcus aureus*	Seeding	-2	94	-3	9	**9,4E+03**	-2	94	-3	10	**9,5E+03**
	a	3054791	Paris Brest	HCU266 - *Staphylococcus aureus*	Seeding	-2	4	-3	0	**4,0E+02**	-2	6	-3	2	**6,0E+02**
	a	3054792	Paris Brest	HCU266 - *Staphylococcus aureus*	Seeding	-2	14	-3	3	**1,4E+03**	-2	14	-3	3	**1,4E+03**
	b	3054854	Egg custard flan	XMQ556 - *Staphylococcus aureus*	Seeding	-3	131	-4	20	**1,4E+05**	-3	130	-4	20	**1,4E+05**
	b	3054855	Custard	XMQ556 - *Staphylococcus aureus*	Seeding	-1	25	-2	6	**2,5E+02**	-1	25	-2	6	**2,5E+02**
	b	3054856	Custard cream	XMQ556 - *Staphylococcus aureus*	Seeding	-2	122	-3	19	**1,3E+04**	-2	122	-3	19	**1,3E+04**
	c	3054796	Hard-boiled egg	KNWQ77 - *Staphylococcus aureus*	Seeding	-2	56	-3	7	**5,6E+03**	-2	54	-3	7	**5,4E+03**
	c	3054797	Liquid whole egg	KNWQ77 - *Staphylococcus aureus*	Seeding	-3	80	-4	4	**8,0E+04**	-3	77	-4	5	**7,7E+04**
	c	3054799	Homemade mayonnaise	KNWQ77 - *Staphylococcus aureus*	Seeding	-3	62	-4	4	**6,2E+04**	-3	62	-4	3	**6,2E+04**
Pet food	a	3054745	Rabbit food	BYEL73 - *Staphylococcus aureus*	Spiking - 10 ' à 56°c	-2	12	-3	2	**1,3E+03**	-2	26	-3	5	**2,8E+03**
	a	3054746	Cat food	BYEL73 - *Staphylococcus aureus*	Spiking - 10 ' à 56°c	-3	40	-4	2	**3,8E+04**	-3	39	-4	2	**3,7E+04**
	b	3054800	Beef meat	BYEL73 - *Staphylococcus aureus*	Seeding	-2	4	-3	0	**4,0E+02**	-2	4	-3	0	**4,0E+02**
	b	3054801	Chicken neck skin	BYEL73 - *Staphylococcus aureus*	Seeding	-2	88	-3	8	**8,8E+03**	-2	115	-3	8	**1,2E+04**
	c	3054857	Fish pate	BATB46 - *Staphylococcus aureus*	Seeding	-1	3	-2	0	**3,0E+01**	-1	3	-2	0	**3,0E+01**
	c	3054858	Fish jelly	BATB46 - *Staphylococcus aureus*	Seeding	-3	27	-4	5	**2,7E+04**	-3	28	-4	5	**2,8E+04**

Category	Type	#	Matrix	Manual CFU/g	PPRA CFU/g	Manual log CFU/g	PPRA log CFU/g	Mean	Difference	
Meat products	a	3054762	Chopped steak	500	500	2,70	2,70	2,70	0,00	1
	a	3054763	Meat steak	670	660	2,83	2,82	2,82	-0,01	2
	b	3054838	Chicken aiguillette with curry sauce	130000	130000	5,11	5,11	5,11	0,00	3
	b	3054839	Pork in sauce	320	330	2,51	2,52	2,51	0,01	4
	c	3054840	Duck rillette	10600	10600	4,03	4,03	4,03	0,00	5
	c	3054841	Rabbit pate	42000	42000	4,62	4,62	4,62	0,00	6
			Average difference of the category						0,00	
			Standard deviation of differences						0,01	
Dairy products	a	3054775	Raw milk Parmesan	9000	9700	3,95	3,99	3,97	0,03	1
	a	3054776	Tomme de Savoie with raw milk	91000	91000	4,96	4,96	4,96	0,00	2
	a	3054777	Raw milk goat	8800	10500	3,94	4,02	3,98	0,08	3
	b	3054778	Farmhouse raw milk	8000	11000	3,90	4,04	3,97	0,14	4
	b	3054779	Raw cream	900	900	2,95	2,95	2,95	0,00	5
	b	3054780	Raw cream	10000	10000	4,00	4,00	4,00	0,00	6
	c	3054845	Pasteurized goat's milk	310	250	2,49	2,40	2,44	-0,09	7
	c	3054846	Pasteurized sheep's milk	170	120	2,23	2,08	2,15	-0,15	8
	c	3054847	Pasteurized cow's milk	270	240	2,43	2,38	2,41	-0,05	9
			Average difference of the category						-0,01	
			Standard deviation of differences						0,09	
Seafood products	a	3054842	Mackerel	36 000	37 000	4,56	4,57	4,56	0,01	1
	a	3054843	Salmon	40	40	1,60	1,60	1,60	0,00	2
	a	3054844	Sardine fillet	5 000	4 000	3,70	3,60	3,65	-0,10	3
	b	3054770	Octopus carpaccio	840	850	2,92	2,93	2,93	0,01	4
	b	3054771	Cooked shrimps	890	850	2,95	2,93	2,94	-0,02	5
	c	3054772	Fish buns	8 300	8 100	3,92	3,91	3,91	-0,01	6
	c	3054773	Codfish brandade	200	200	2,30	2,30	2,30	0,00	7
			Average difference of the category						-0,02	
			Standard deviation of differences						0,04	
Vegetables	a	3054848	Cucumber with cream sauce	400	400	2,60	2,60	2,60	0,00	1
	a	3054849	Tomato salad, corn, soya germ, vinaigrette	14000	14000	4,15	4,15	4,15	0,00	2
	b	3054850	Mashed vegetables	11000	12000	4,04	4,08	4,06	0,04	3
	c	3054852	Dauphinois gratin	100000	110000	5,00	5,04	5,02	0,04	4
	c	3054853	Mirabelle plum tart	3500	3500	3,54	3,54	3,54	0,00	5
			Average difference of the category						0,02	
			Standard deviation of differences						0,02	
Pastry and egg products	a	3054790	Eclair with coffee	9400	9500	3,97	3,98	3,98	0,00	1
	a	3054791	Paris Brest	400	600	2,60	2,78	2,69	0,18	2
	a	3054792	Paris Brest	1400	1400	3,15	3,15	3,15	0,00	3
	b	3054854	Egg custard flan	140000	140000	5,15	5,15	5,15	0,00	4
	b	3054855	Custard	250	250	2,40	2,40	2,40	0,00	5
	b	3054856	Custard cream	13000	13000	4,11	4,11	4,11	0,00	6
	c	3054796	Hard-boiled egg	5600	5400	3,75	3,73	3,74	-0,02	7
	c	3054797	Liquid whole egg	80000	77000	4,90	4,89	4,89	-0,02	8
	c	3054799	Homemade mayonnaise	62000	62000	4,79	4,79	4,79	0,00	9
			Average difference of the category						0,02	
			Standard deviation of differences						0,06	
Pet food	a	3054745	Rabbit food	1300	2800	3,11	3,45	3,28	0,33	1
	a	3054746	Cat food	38000	37000	4,58	4,57	4,57	-0,01	2
	b	3054800	Beef meat	400	400	2,60	2,60	2,60	0,00	3
	b	3054801	Chicken neck skin	8800	11500	3,94	4,06	4,00	0,12	4
	c	3054857	Fish pate	30	30	1,48	1,48	1,48	0,00	5
	c	3054858	Fish jelly	27000	28000	4,43	4,45	4,44	0,02	6
			Average difference of the category						0,08	
			Standard deviation of differences						0,13	
Average difference all categories									0,01	42
Standard deviation of differences									0,07	

n =	42
β =	95%
$T(0.025;42)$=	2,01954097

Lower confidence limit	Upper confidence limit
-0,14	0,16

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
VP	b	3054851	Grated carrot	**<10**	**<10**	0,00	0,00	0,00	0,00

Appendix N: accuracy profile - raw results

ACCURACY PROFIL

Matrix: Goat cheese

Enumeration of the microorganisms at 37°C - batch 1: $2{,}8.10^3$ CFU/g

Enumeration of the microorganisms at 37°C - batch 2: $1{,}5.10^3$ CFU/g

Strain: *Staphylococcus aureus*

Level	Batch	R.	Petrifilm Staph Express (STX) -Manual reading 37°C 24h± 2h					Petrifilm Staph Express (STX) - 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	15	-2	1	**150**	-1	15	-2	1	**150**
		R2	-1	34	-2	2	**330**	-1	33	-2	2	**320**
		R3	-1	25	-2	6	**280**	-1	25	-2	7	**290**
		R4	-1	37	-2	1	**350**	-1	41	-2	3	**400**
		R5	-1	19	-2	2	**190**	-1	20	-2	4	**220**
	Batch 2	R1	-1	21	-2	7	**260**	-1	23	-2	7	**270**
		R2	-1	27	-2	3	**270**	-1	30	-2	8	**350**
		R3	-1	27	-2	2	**260**	-1	28	-2	2	**270**
		R4	-1	21	-2	5	**240**	-1	21	-2	5	**240**
		R5	-1	25	-2	3	**260**	-1	26	-2	5	**280**
Level 2	Batch 1	R1	-2	88	-3	9	**8800**	-2	88	-3	9	**8800**
		R2	-2	80	-3	11	**8300**	-2	78	-3	14	**8400**
		R3	-2	77	-3	14	**8300**	-2	74	-3	14	**8000**
		R4	-2	90	-3	20	**10000**	-2	82	-3	23	**9500**
		R5	-2	88	-3	9	**8800**	-2	79	-3	9	**8000**
	Batch 2	R1	-2	98	-3	4	**9300**	-2	100	-3	6	**9600**
		R2	-2	70	-3	8	**7100**	-2	75	-3	8	**7500**
		R3	-2	65	-3	5	**6400**	-2	65	-3	6	**6500**
		R4	-2	68	-3	11	**7200**	-2	78	-3	11	**8100**
		R5	-2	87	-3	9	**8700**	-2	89	-3	9	**8900**
Level 3	Batch 1	R1	-3	80	-4	9	**81000**	-3	86	-4	10	**87000**
		R2	-3	57	-4	7	**58000**	-3	76	-4	7	**75000**
		R3	-3	89	-4	9	**89000**	-3	96	-4	8	**95000**
		R4	-3	101	-4	9	**100000**	-3	91	-4	9	**91000**
		R5	-3	98	-4	20	**107000**	-3	92	-4	19	**101000**
	Batch 2	R1	-3	92	-4	9	**92000**	-3	85	-4	8	**85000**
		R2	-3	77	-4	8	**77300**	-3	77	-4	7	**76000**
		R3	-3	97	-4	4	**93000**	-3	98	-4	4	**93000**
		R4	-3	88	-4	3	**83000**	-3	84	-4	3	**79000**
		R5	-3	89	-4	11	**91000**	-3	94	-4	11	**95000**