

NF VALIDATION
Validation of alternative analytical methods
Application in food microbiology

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

3M™ Petrifilm Lactic Acid Bacteria Count Plate
(Certificate number: 3M 01/19 - 11/17)
for the enumeration of mesophilic lactic acid bacteria colony
in food products (excluding yoghourts) and
production environmental samples

Quantitative method

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This report consists of 71 pages, including 10 appendices.
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Competencies of the laboratory are certified by COFRAC accreditation for the analyses marked with the symbol♦.

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1	INTRODUCTION	5
2	METHODS DESCRIPTION	5
2.1	Alternative method	5
2.1.1	<i>Principle</i>	5
2.1.2	<i>Protocol</i>	6
2.1.3	<i>Restrictions</i>	6
2.2	Reference method	6
3	METHOD COMPARISON STUDY	6
3.1	Relative trueness study	6
3.1.1	<i>Number and nature of the samples</i>	6
3.1.2	<i>Artificial and natural contamination of the samples</i>	7
3.1.3	<i>Protocol applied during the validation study</i>	7
3.1.4	<i>Raw data</i>	8
3.1.5	<i>Statistical interpretation</i>	10
3.1.6	<i>Discordant results</i>	16
3.1.7	<i>Conclusion</i>	16
3.2	Accuracy profile study	17
3.2.1	<i>Matrices</i>	17
3.2.2	<i>Calculation and interpretation</i>	17
3.2.3	<i>Conclusion</i>	18
3.3	Inclusivity and exclusivity studies	20
3.3.1	<i>Protocol</i>	20
3.3.2	<i>Results</i>	20
3.4	Practicability	22
4	INTER-LABORATORY STUDY	22
4.1	Study organisation	22
4.2	Experimental parameters controls	24
4.2.1	<i>Strain stability</i>	24
4.2.2	<i>Logistic conditions</i>	24
4.2.3	<i>Homogeneity of inoculation</i>	25
4.3	Calculation, interpretation, and summary of data	26
4.3.1	<i>Results obtained by the expert Lab.</i>	26
4.3.2	<i>Results obtained by the collaborators</i>	26
4.4	Calculations and interpretations	28
4.4.1	<i>Visual linearity checking</i>	28
4.4.2	<i>Accuracy profile calculations</i>	29
5	GENERAL CONCLUSION	32

✚	Appendix 1 - Flow diagram of the alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate	33
✚	Appendix 2 - Flow diagram of the reference method: ISO 15214 (1998): Microbiology of food and animal feeding stuffs. Horizontal method for the enumeration of mesophilic lactic acid bacteria colony – count technique at 30°C.	34
✚	Appendix 3 – Artificial contaminations of samples	35
✚	Appendix 4 - Relative trueness study: raw data	38
✚	Appendix 5 - Relative trueness study: summarized results and calculations	48
✚	Appendix 6 - Accuracy profile study: raw data	52
✚	Appendix 7 - Accuracy profile study: summarized results	58
✚	Appendix 8 – Inclusivity / Exclusivity: raw data	59
✚	Appendix 9 - Homogeneity of inoculation	62
✚	Appendix 10 - Results obtained by the collaborative laboratories and the expert laboratory	63

Quality Assurance documents related to this study can be consulted upon request from 3M Health Care.

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

Validation protocols	<input checked="" type="checkbox"/> ISO 16140-1 (2016): Microbiology of the food chain - Method validation — <i>Part 1: Vocabulary</i> <input checked="" type="checkbox"/> ISO 16140-2 (2016): Microbiology of the food chain - Method validation — <i>Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method</i> <input checked="" type="checkbox"/> AFNOR technical rules (PR Revision 7)
Reference method[♦]	ISO 15214 (September 1998): Microbiology of food and animal feeding stuffs. Horizontal method for the enumeration of mesophilic lactic acid bacteria colony-count technique at 30°C
Alternative method	3M™ Petrifilm™ Lactic Acid Bacteria Count Plate
Scope	<input checked="" type="checkbox"/> Food products (excluding yoghurts) <input checked="" type="checkbox"/> Production environmental samples
Certification organism	AFNOR Certification (http://nf-validation.afnor.org/)

♦ Analyses performed according to the COFRAC accreditation

1 INTRODUCTION

The 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate was validated on the 23rd of November 2017 (Certificate number 3M 01/19 - 11/17) for all human food (except yoghourts) and production environmental samples according to the ISO 16140-2:2016.

The method was renewed in October 2021 according to the ISO16140-2:2016 for the same scope and without modification

2 METHODS DESCRIPTION

2.1 Alternative method

2.1.1 Principle

The 3M™ Petrifilm™ Lactic Acid Bacteria Count (LAB) plate is a self-contained, sample-ready-culture-medium system which contains nutrients, selective agents, a cold-water-soluble gelling agent, and a tetrazolium indicator that facilitates colony enumeration. The 3M Petrifilm LAB plate contains oxygen scavenging compounds which create an anaerobic environment for the recovery of homofermentative and heterofermentative lactic acid bacteria in the food and beverage industries. Lactic acid bacteria are defined as non-spore forming, Gram positive cocci or rods, which produce lactic acid as a result of carbohydrate fermentation. Homofermentative lactic acid bacteria primarily produce lactic acid whereas heterofermentative lactic acid bacteria produce gas in addition to lactic acid. On the 3M Petrifilm LAB plate homofermentative lactic acid bacteria appear as red colonies without gas; heterofermentative colonies appear as red colonies with an associated gas bubble.

As the ISO 15214 does not offer the possibility to enumerate homofermentative and heterofermentative colonies separately, the differentiation between homofermentative and heterofermentative lactic acid bacteria is not part of the validation study.

In order to offer more practicability to the users, it is possible to store the 3M Petrifilm LAB Plates one week at -18°C before enumeration. This was tested for the relative trueness study.

2.1.2 Protocol

The flow diagram of the alternative method is provided in **Appendix 1**.

2.1.3 Restrictions

There is no restriction for use.

2.2 Reference method

The reference method used is the ISO 15214 (1998): Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of mesophilic lactic acid bacteria colony-count technique at 30°C (See **Appendix 2**).

3 METHOD COMPARISON STUDY

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

The study was carried out on a diversity of samples and strains representative of agri-food products. This does not constitute an exhaustive list of the different matrices included in the scope.

For any comment on the alternative method, please contact AFNOR Certification at <http://nf-validation.afnor.org/contact-2/>.

3.1 Relative trueness study

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

3.1.1 Number and nature of the samples

Five food categories and production environmental samples category were tested. The repartition per tested category and type is provided in Table 1.

Table 1 – Categories and types

Category	Type	Number of samples tested	Number of samples with interpretable results
1. Meat products	a. Cooked meats (beef, pork, poultry, etc....)	12	5
	b. Fermented dry meat	6	6
	c. Raw cured meat	5	5
	Total	23	16
2. Dairy products	a. Pasteurized milk cheeses	5	5
	b. Pasteurized milk-based products	9	6
	c. Fermented milk products	5	5
	Total	19	16
3. Seafood products	a. Cooked products	9	5
	b. Smoked fish	14	5
	c. Acidified fishery (marinated)	7	5
	Total	30	15
4. Composite foods (RTE, RTRE, RTH foods)	a. Vegetables	10	6
	b. Deli salads	7	7
	c. Composite foods	6	5
	Total	23	18
5. Meal components	a. Dressings, sauces	5	5
	b. Components ready to bake	6	5
	c. Pastry confectionary and desserts	8	5
	Total	19	15
6. Production environmental samples	a. Surface sample	11	6
	b. Waters	10	6
	c. Dusts, scrapes, wastes	8	5
	Total	29	17
All categories		143	97

143 samples were analyzed, leading to 97 exploitable results.

3.1.2 Artificial and natural contamination of the samples

Artificial contaminations were realized by seeding protocols. The inoculated strains, the contamination protocols, the injured protocols of the inoculated vegetative cells are provided in **Appendix 3**.

54 samples were artificially contaminated; 49 gave interpretable results.
48 samples were naturally contaminated.

3.1.3 Protocol applied during the validation study

The minimum incubation time was applied during the study: 45 h. The storage of the 3M Petrifilm plates for one week at -18°C was also tested for the trueness study.

3.1.4 Raw data

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

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

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

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

Table 2 - Classification of the data

Category	Interpretable results	Below the quantification limit by one or both methods	Above quantification limit by one or both methods	<4 CFU/plate	Total
1	16	6	0	1	23
2	16	2	1	0	19
3	15	13	0	2	30
4	18	3	0	2	23
5	15	3	0	1	19
6	17	11	0	1	29
Total	97	38	1	7	143

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

Table 3 - Samples which were not used in the calculations

Sample No	Reference method [†]	Alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria Count plate		Category	Type
		45 h	45 h + 1 week at -18°C		
		Log(CFU/g)	Log(CFU/g)		
7141	<1,00	<1,00	<1,00	3	a
7142	<1,00	<1,00	<1,00	3	b
7143	<1,00	<1,00	<1,00	4	c
7226	<1,00	<1,00	<1,00	2	b
7227	<1,00	<1,00	<1,00	2	b
7228	<1,00	<1,00	<1,00	1	a
7229	<1,00	<1,00	<1,00	3	a
7377	1,30*	<1,00	<1,00	4	a
7466	<1,00	1,00*	1,00*	3	b
7911	<1,00	TNTC	TNTC	3	b
7912	<1,00	3,65	3,51	3	b
7913	<1,00	<1,00	<1,00	3	b
7914	<1,00	<1,00	<1,00	3	b
1271	<1,00	<1,00	<1,00	1	a
1272	1,00*	1,60	1,60	3	a
1273	1,00*	1,00*	1,00*	3	a
2556	<1,00	<1,00	<1,00	4	a
2558	<1,00	<1,00	<1,00	3	b
2560	<1,00	<1,00	<1,00	3	b
2561	<1,00	<1,00	<1,00	3	b
2595	<1,00	<1,00	<1,00	6	a
2596	<1,00	<1,00	<1,00	6	a
2598	<0,00	<0,00	0,00*	6	b
3513	1,30*	1,30*	1,30*	4	a
3514	3,55	1,30*	1,30*	4	a
3515	<1,00	TNTC	TNTC	1	a
3516	<1,00	<1,00	<1,00	1	a
3517	<1,00	<1,00	<1,00	1	a
3518	<1,00	<1,00	<1,00	1	a
3519	1,30*	1,48*	1,48*	1	a
3522	<1,00	<1,00	<1,00	3	c
3523	<1,00	<1,00	<1,00	3	c
3758	>5,48	>5,48	>5,48	2	b
3788	<2,00	<2,00	<2,00	6	b
3808	5,48*	5,30*	5,00*	5	c
3809	4,30*	<4,00	<4,00	5	c
3810	3,58	<3,00	<3,00	5	c
3866	<1,00	<1,00	<1,00	6	b
3867	1,00*	1,60	1,60	6	a
3868	<1,00	1,30*	1,30*	6	a
3869	<1,00	<1,00	<1,00	6	c
3870	<1,00	1,00*	<1,00	6	c
3871	1,00*	<2,00	<2,00	6	c
3872	<1,00	<1,00	<1,00	6	b
3873	<1,00	1,00*	<1,00	6	a
3877	<1,00	<1,00	<1,00	5	b

TNTC: Too numerous to count

*: < 4 CFU/plate

[†] Analyses performed according to the COFRAC accreditation

3.1.5 Statistical interpretation

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

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

The Figures 1 to 6 show the data plotted for the different studied categories, and the Figure 7 for all the products after incubation time (Figures 1a to 7a) and after a week storage at -18°C (Figures 1b to 7b).

Figure 1 - Data plotted for the Meat products

Figure 1a - After 45 h incubation time

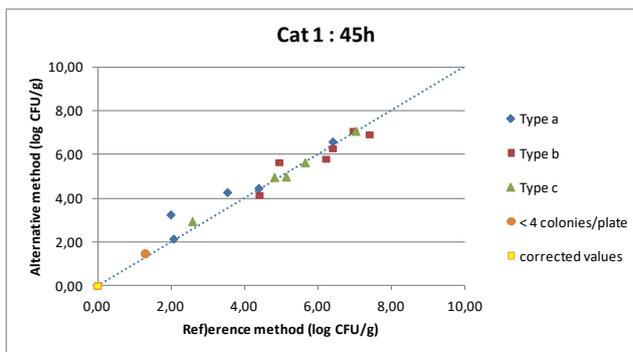


Figure 1b - After 45 h incubation time and storage for a week at -18°C

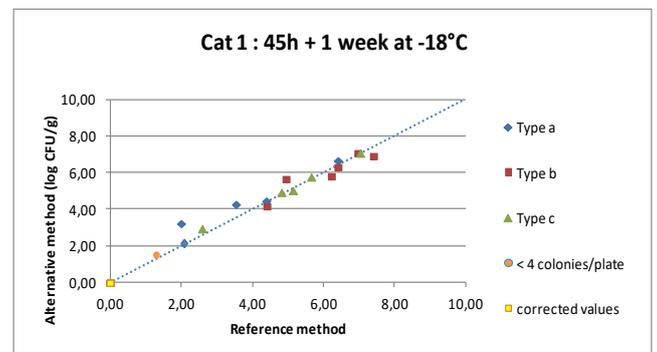


Figure 2 - Data plotted for the Dairy products

Figure 2a - After 45 h incubation time

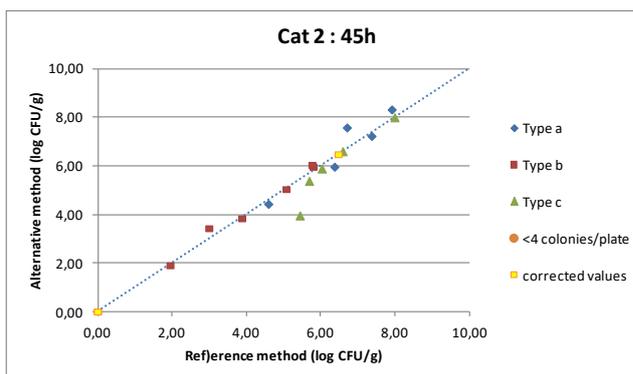


Figure 2b - After 45 h incubation time and storage for a week at -18°C

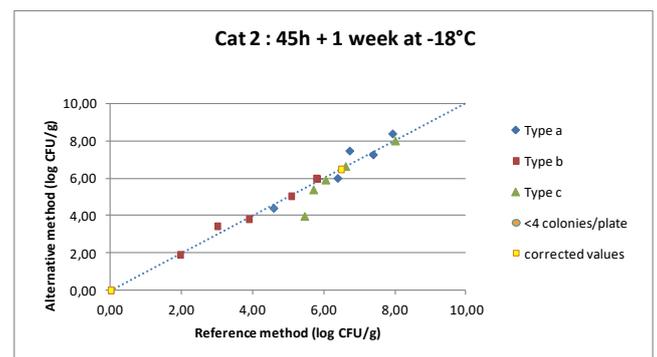


Figure 3 - Data plotted for the Seafood products

Figure 3a - After 45 h incubation time

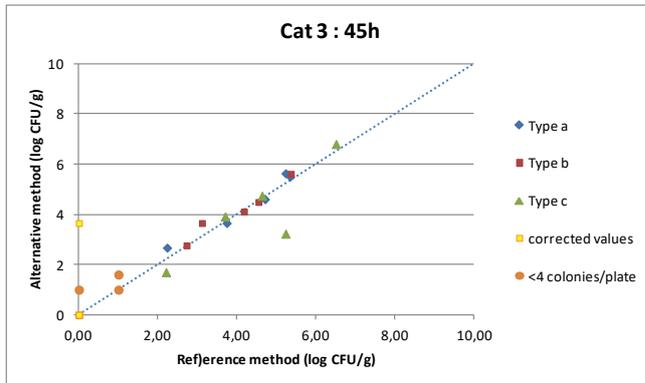


Figure 3b - After 45 h incubation time and storage for a week at -18°C

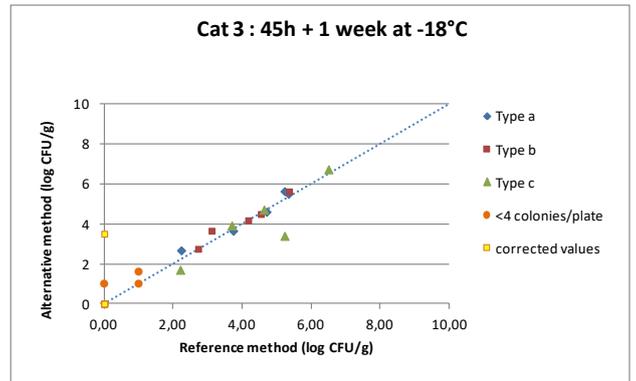


Figure 4 - Data plotted for the Composite products

Figure 4a - After 45 h incubation time

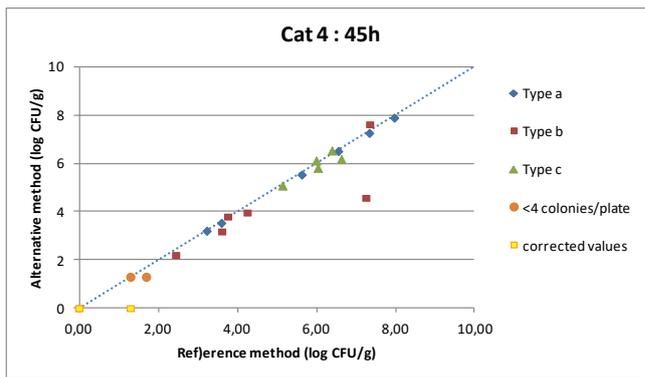


Figure 4b - After 45 h incubation time and storage for a week at -18°C

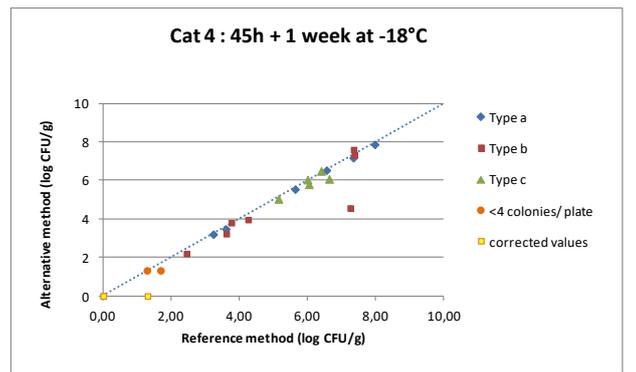


Figure 5 - Data plotted for the Meal components

Figure 5a - After 45 h incubation time

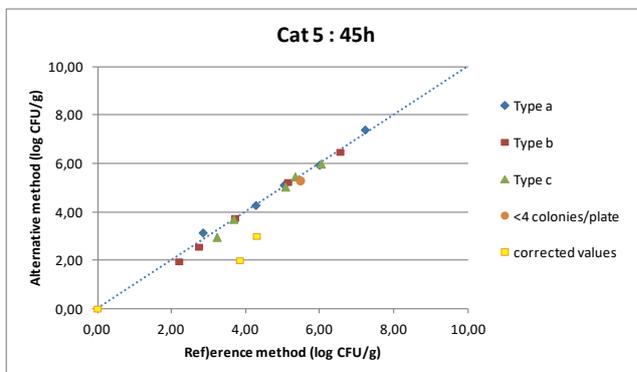


Figure 5b - After 45 h incubation time and storage for a week at -18°C

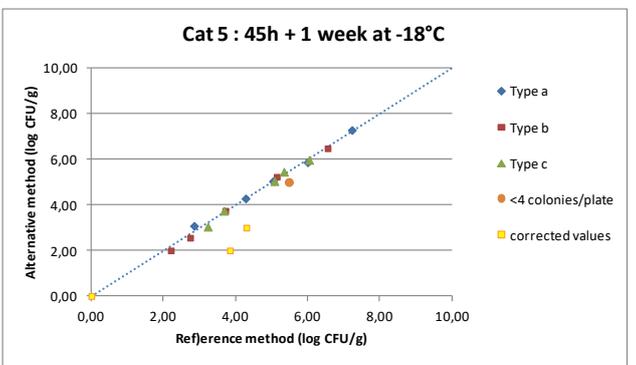


Figure 6 - Data plotted for the Production environmental samples

Figure 6a - After 45 h incubation time

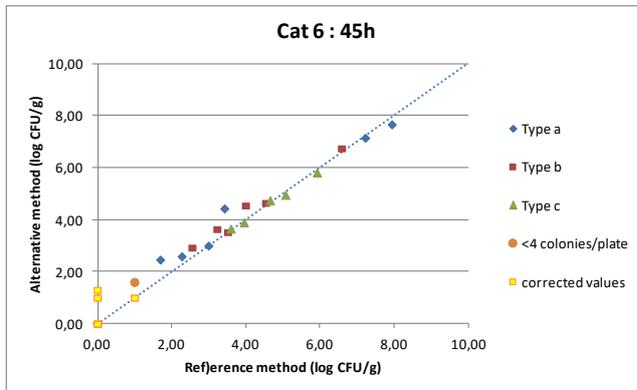


Figure 6b - After 45 h incubation time and storage for a week at -18°C

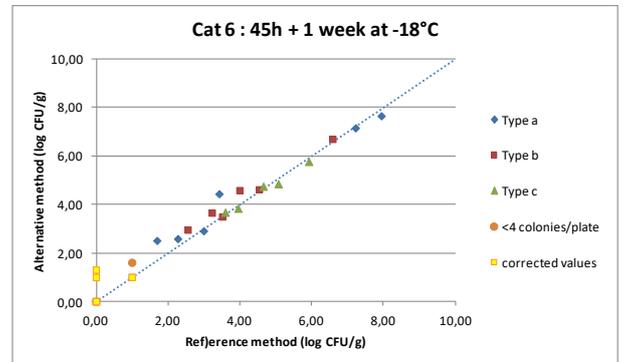


Figure 7 - Data plotted for all the products

Figure 7a - After 45 h incubation time

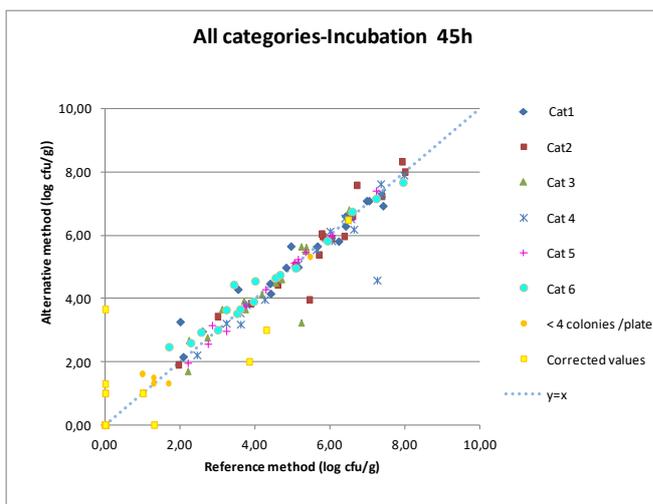
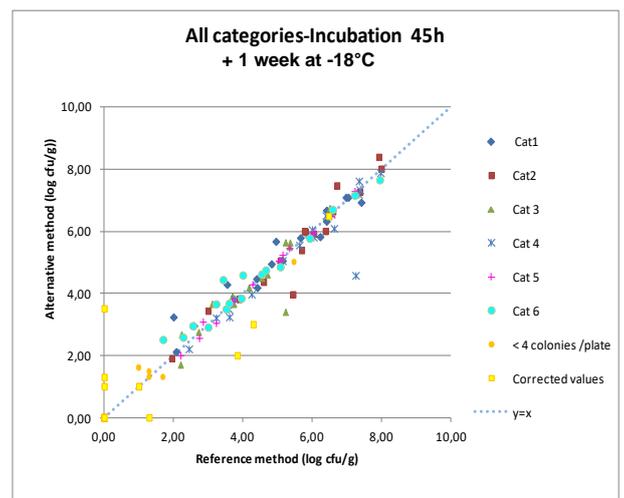


Figure 7b - After 45 h incubation time and storage for a week at -18°C



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

Table 4 - Calculated values per category and incubation time

Incubation time	Category	n	\bar{D} Bias	SD	95% lower limit	95% upper limit
45h	1	16	0,13	0,45	-0.86	1.12
	2	16	-0,05	0,5	-1.13	1.04
	3	15	0,02	0,61	-1.33	1.36
	4	18	-0,05	0,2	-0.48	0.38
	5	15	-0,01	0,15	-0.34	0.33
	6	17	0,18	0,34	-0.56	0.93
	All categories	97	0,05	0,42	-0,79	0,88
45h + 1 week at -18°C	1	16	0,15	0,44	-0.82	1.12
	2	16	-0,05	0,49	-1.11	1.00
	3	15	0,02	0,57	-1.23	1.28
	4	18	-0,09	0,21	-0.55	0.38
	5	15	-0,02	0,12	-0.30	0.25
	6	17	0,16	0,37	-0.64	0.97
	All categories	97	0,04	0,41	-0,78	0,86

\bar{D} : Average difference

SD: Standard deviation of differences

The Bland-Altman difference plot for all the samples is given Figure 8a after incubation time and Figure 8b after a week storage at - 18°C.

Figure 8 – Bland-Altman difference plot for all the samples

Figure 8a - After 45 h incubation time

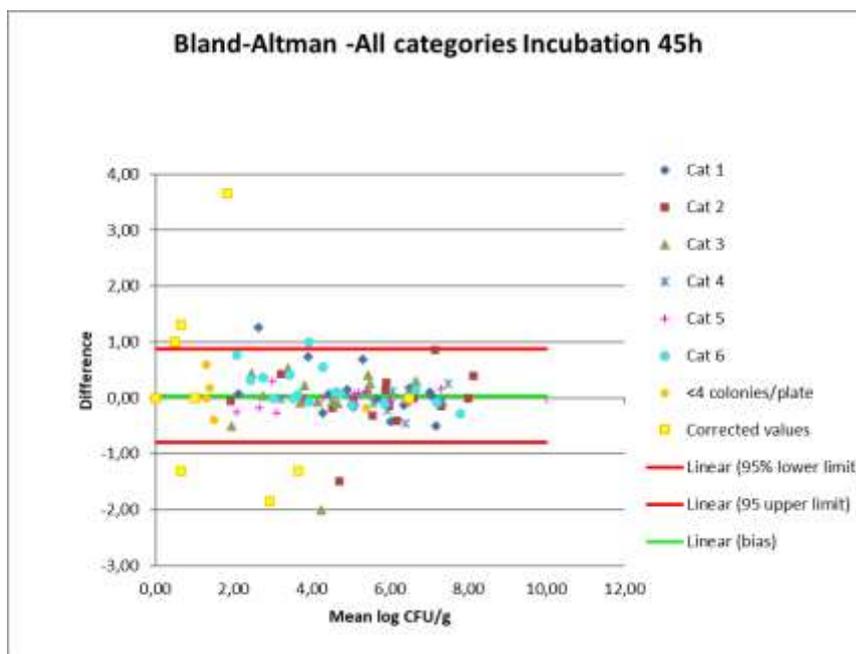
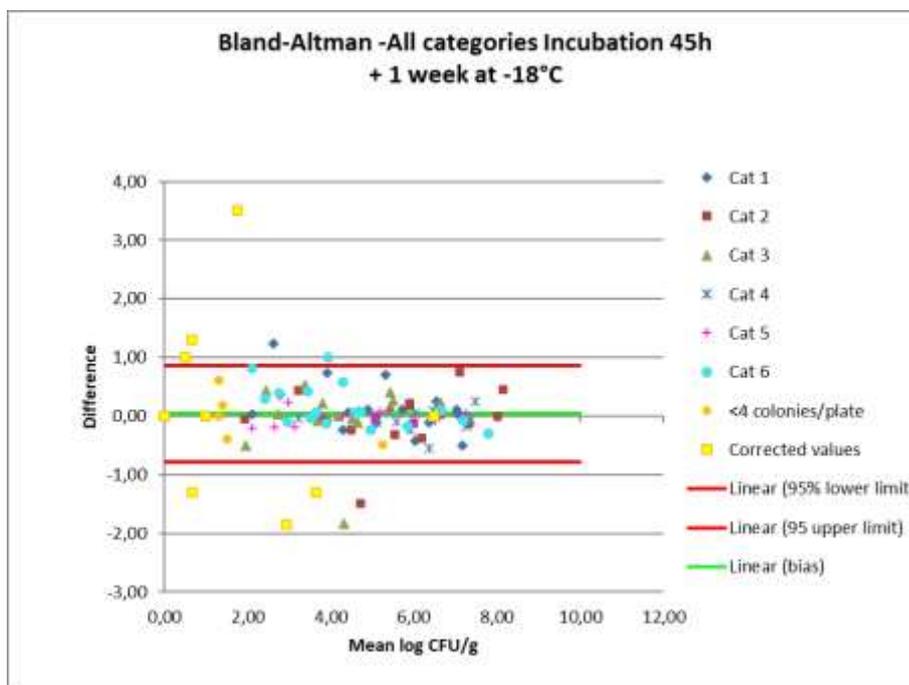


Figure 8b - After 45 h incubation time and storage for a week at -18°C



The bias observed in both conditions (45 h and 45 h + 1 week at - 18°C) is close to 0 (0.05 log and 0.04 log).

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

Table 5 - Disagreements observed between the reference and the alternative methodValues in **green**: differences in favor of the alternative methodValues in **red**: differences in favor of the reference method

Incubation: 45h										
Classification Of the data	Category	Type	N° Sample	Reference method	Alternative method	Values before correction (Reference or/ and alternative method)	Mean	Difference	Lower / Upper limits	Confirmation test
Interpretable results by both methods	1	a	3756	2,00	3,26	/	2,63	1,26	-0,79/ 0,88	MRS: Cocci / Petrifilm plate: Coccobacilli - Catalase -
	2	c	7230	5,45	3,96	/	4,70	-1,49		MRS: cocci and rods - Catalase -
	3	c	7172	5,23	3,23	/	4,23	-2,00		MRS: Cocci and rods; Catalase -
< or > the quantification limit	6	a	4080	3,43	4,43	/	3,93	1,00		MRS: cocci Petrifilm plate: cocci
	3	b	7466	0,00	1,00	1,00	0,50	1,00		/
	3	b	7912	0,00	3,65	1,00	1,83	3,65		Petrifilm plate: rods - Catalase -
	4	a	7377	1,30	0,00	1,00	0,65	-1,30		/
	5	c	3809	4,30	3,00	4,00	3,65	-1,30		/
	5	c	3810	3,85	2,00	3,00	2,92	-1,85		MRS: Coccobacilli - Catalase -
	6	a	3868	0,00	1,30	1,00	0,65	1,30		/
6	a	3873	0,00	1,00	1,00	0,50	1,00	/		
6	c	3870	0,00	1,00	1,00	0,50	1,00	/		

Incubation: 45h + 1 week at -18°C										
Classification the data	Category	Type	N° Sample	Reference method	Alternative method	Values before correction (Reference or/and alternative method)	Mean	Difference	Lower / Upper limits	
Interpretable results by both methods	1	a	3756	2,00	3,23	/	2,62	1,23	- 0,78/0,86	
	2	c	7230	5,45	3,96	/	4,70	-1,49		
	3	c	7172	5,23	3,40	/	4,32	-1,83		
	6	a	4080	3,43	4,43	/	3,93	1,00		
< or > the quantification limit	3	b	7466	0,00	1,00	1,00	0,50	1,00		
	3	b	7912	0,00	3,51	1,00	1,76	3,51		
	4	a	7377	1,30	0,00	1,00	0,65	-1,30		
	5	c	3809	4,30	3,00	4,00	3,65	-1,30		
	5	c	3810	3,85	2,00	3,00	2,92	-1,85		
	6	a	3868	0,00	1,30	1,00	0,65	1,30		
6	a	3873	0,00	1,00	1,00	0,50	1,00			

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

When the difference observed between the reference and the alternative methods were above or lower than the Acceptability Limit, the tests described in the reference method were applied (microscopic observation and catalase tests). In all cases, the results correspond to lactic acid bacteria.

3.1.6 *Discordant results*

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

Table 6 - Classification of the samples

		Number of samples	
		45 h	45 h + 1 week at -20°C
Interpretable results by both methods	< LCL	2	2
	> UCL	2	2
	Total	4	4
<4 CFU/plate	< LCL	0	0
	> UCL	0	0
	Total	0	0
< or > the quantification limit	< LCL	3	3
	> UCL	5	4
	Total	8	7
Total < LCL		5	5
Total >UCL		7	6
Total		12	11

The number of samples with difference in favor of the alternative method is equivalent to the number of samples with difference in favor of the reference method.

3.1.7 *Conclusion*

The relative trueness study of the alternative method is satisfying. It is possible to store the Petrifilm plates for a week at - 18°C after incubation before reading.

3.2 Accuracy profile study

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

3.2.1 Matrices

Four matrices were tested with three contamination levels and five test portions per level. The tested categories, types, matrix and inoculated strains are provided in Table 7.

Table 7 - Categories, types and matrices

Category	Type	Matrix	Inoculated Strain	Origin	Inoculation Level (CFU/g)
1	a	Pâté	<i>Lactobacillus sakei</i> Ad404 (homofermentative)	Cooked ham	300 10 ⁴ 10 ⁶
2	b	Pannacotta	<i>Lactococcus lactis</i> subsp <i>lactis</i> Ad125 (homofermentative)	Fermented milk	
3	a	Fish terrine	<i>Leuconostoc mesenteroides</i> Ad1734 (heterofermentative)	Ready to eat meal	
4	b	Macédoine	<i>Lactococcus plantarum</i> Ad1147 (homofermentative)	Guacamole	
5	a	Creamy salad dressing	<i>Pediococcus pentosaceus</i> PP1 (homofermentative)	Alcoholic beverage	
6	b	Process water	<i>Lactococcus garvieae</i> Ad1640 (homofermentative)	Compost	

3.2.2 Calculation and interpretation

The raw data are provided in **Appendix 6**. The summary tables (in log CFU/g) and calculations are provided in **Appendix 7**. The statistical results and the accuracy profiles are provided Figure 9.

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

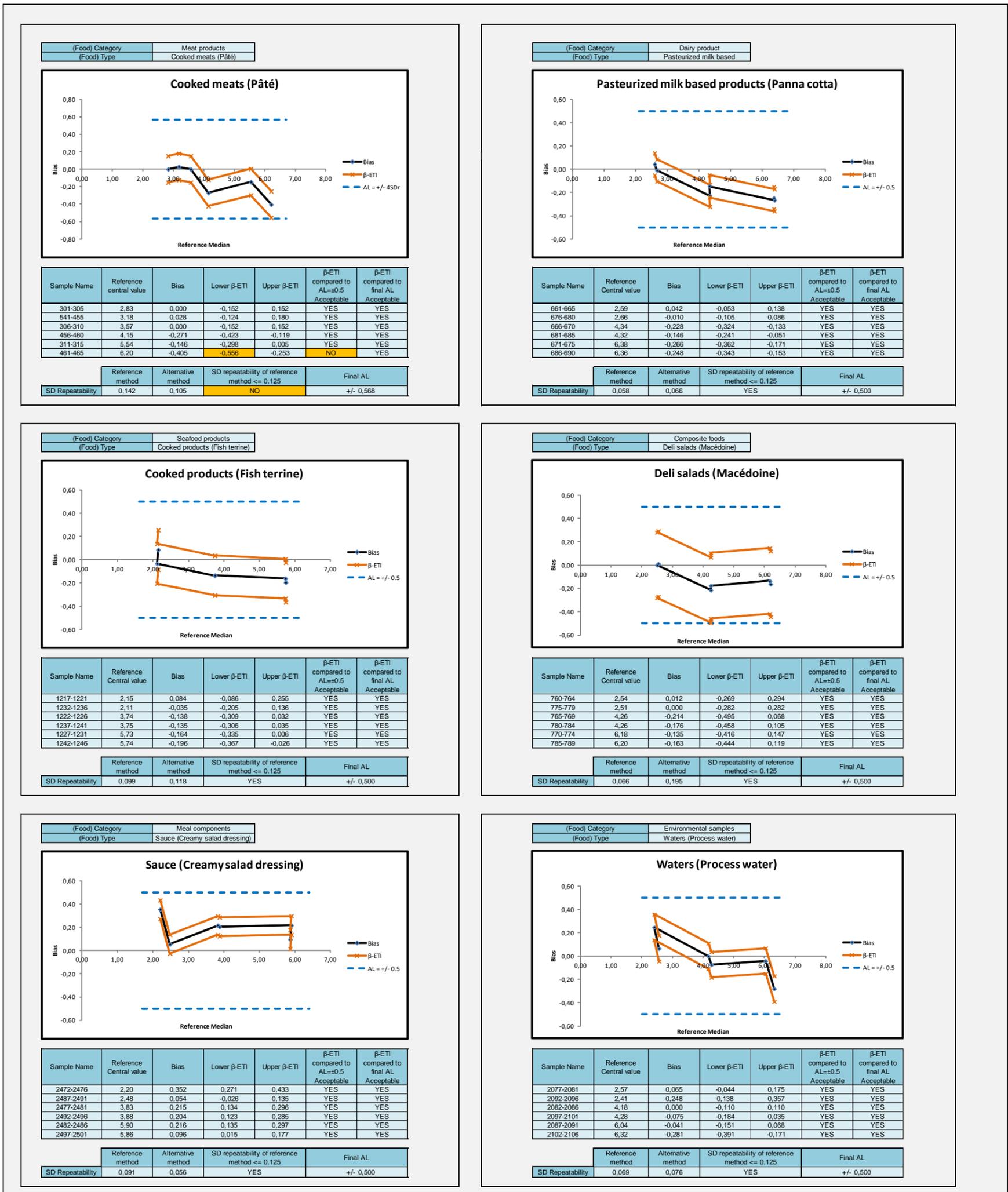
The lower and upper β .ETI are within the acceptability limits for all the matrix/strain pairs tested. The acceptability limits are fixed at - 0.5 log for all

the matrices tested, except for the pâté for which the acceptability limit is fixed at - 0.568 log as the standard deviation of the reference method is above 0.125; the AL is in this case = 4 x SD repeatability of the reference method.

3.2.3 Conclusion

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

Figure 9 – Accuracy profile



3.3 Inclusivity and exclusivity studies

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

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

57 target strains from different genus and species (mesophilic strains) as well as 34 non target strains were tested.

3.3.1 Protocol

Strains were grown in appropriate conditions; decimal dilution was done and enumerated by the 3M™ Petrifilm™ Lactic Acid Bacteria Count plate and the ISO 15214 standard. Target strains and non-target strains were enumerated in parallel with a non-selective agar (PCA). MRS pH 6.4 was used when the strains did not grow at pH 5.7; this is not part of the ISO 15214 method.

3.3.2 Results

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

Inclusivity

57 target strains were tested; the results are the following:

- 41 strains gave similar results with the reference and the alternative methods.
- 11 strains did not grow on MRS pH 5.7 and on 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate:
 - * *Carnobacterium divergens* CIP 101029T
 - * *Carnobacterium divergens* SM001
 - * *Carnobacterium gallinarum* ATCC 49517
 - * *Carnobacterium maltaromicum* Ad1245
 - * *Carnobacterium maltaromicum* CIP 103135
 - * *Carnobacterium maltaromicum* Ad1321
 - * *Carnobacterium piscicola* Ad368
 - * *Carnobacterium piscicola* Ad369

- * *Lactobacillus agilis* 2744
- * *Lactobacillus fructivorans* 9511
- * *Lactobacillus helveticus* LH56,

- 2 strains did not grow on MRS pH 5.7 but grew on 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate:

- * *Lactobacillus delbrueckii* 91L351
- * *Streptococcus paranberis* Ad2518

All the strains which did not grow on MRS pH 5.7 and/or 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate grew on MRS pH 6.4.

- 3 strains did not grow on 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate:

- * *Oenococcus oeni* 73
- * *Pediococcus damnosus* P66
- * *Pediococcus inopiratus* Ad1820.

Finally, similar results were observed by both methods.

Exclusivity

34 strains were tested. For 3 strains of *Propionibacterium*, it was impossible to obtain a culture. These strains were replaced by 3 other strains (numbers 3, 15 and 30)

6 yeast strains grew on MRS pH 5.7 while no growth was observed with the alternative method.

No growth was observed on 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate for the 34 tested strains.

The 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate is as specific as the reference method and more selective than the reference method.

3.4 Practicability

The 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate practicability was evaluated according to the AFNOR criteria.

Criteria to be control	Communication on criteria	Expert lab checking procedure		
Storage conditions	Store the unopened 3M Petrifilm LAB Plate pouches at frozen or refrigerated temperature equal to -2°C to 8°C (-4 to 46°F)	Mentioned on the package and in the kit insert		
Shelf-life and modalities of utilization after first use	Store resealed pouches in a cool dry place for no longer than four weeks	Mentioned in the kit insert		
Time to result	48 hours ± 3 hours	<i>Steps</i>	<i>Negative sample</i>	<i>Positive sample</i>
		<i>Sampling, analysis</i>	<i>Day 0</i>	<i>Day 0</i>
		<i>Enumeration</i>	<i>Day 2</i>	<i>Day 2</i>
Common step with the reference method	/	Initial suspension and dilutions		

4 INTER-LABORATORY STUDY

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

4.1 Study organisation

Collaborators number

Samples were sent to 15 Collaborators.

Matrix and strain used

The matrix used was a canned ham inoculated with *Lactobacillus sakei* Ad404, isolated from ham. The matrix was also inoculated with *Serratia Proteomaculans* A00C056 (1 000 CFU/g) in order to have a background microflora.

Samples

Samples were prepared and inoculated on Monday 18 September 2017, as described below:

- 8 blind coded samples (10 g) for lactic acid bacteria enumeration by the 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate method and by the NF ISO 15214 reference method,
- 1 sample (10 g) labelled “sample for total count enumeration” for aerobic mesophilic flora enumeration by the ISO4833-1 method,
- 1 water flask labelled “Temperature Control” with a temperature probe for temperature measurement at reception and during sample storage.

Inoculation

The targeted inoculation levels were the following:

- Level 0: 0 CFU/g (samples 2 & 6),
- Level 1: 500 CFU/g (samples 3 & 8),
- Level 2: 50 000 CFU/g (samples 4 & 5),
- Level 3: 500 000 CFU/g (samples 1 & 7).

Labelling and shipping

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

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

Samples were shipped in 24 h to 48 h to the involved laboratories. The temperature conditions had to stay lower or equal to 8°C during transport, and between 0°C – 8°C in the labs.

The samples were sent on Monday 18th September 2017.

Analyses

Collaborative study laboratories and the expert laboratory carried out the analyses on Wednesday 20th of September 2017 with the alternative and reference methods.

Expedition conditions

The collaborative study instructions were sent on Tuesday 5 September 2017.

4.2 Experimental parameters controls

4.2.1 Strain stability

In order to evaluate the *Lactobacillus sakei* strain stability during transport, bacterial count of sample was checked at different times, *i.e.* inoculation times and after 48 h storage at $5^{\circ}\text{C} \pm 3^{\circ}\text{C}$.

Six samples (3 contamination levels x 2 samples) were enumerated at Day 0 and Day 2. The data are given in Table 8.

Table 8 – Strain stability

Day of analysis	<i>Lactobacillus sakei</i> enumeration				Mesophilic aerobic flora (CFU/g)
	Reference method: ISO 15214		Alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate		
	Replicate 1	Replicate 2	Replicate 1	Replicate 2	
Day 0	320	270	390	430	1 500
	36 000	41 000	36 000	46 000	
	450 000	450 000	360 000	440 000	
Day 2	300	360	340	530	1 200
	33 000	45 000	38 000	55 000	
	460 000	330 000	410 000	390 000	

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

4.2.2 Logistic conditions

The temperatures measured at reception by the Labs, the temperatures registered by the thermo-probe, and the receipt dates are given in Table 9.

Table 9 - Sample temperatures at receipt

Laboratories	Temperature measured by the probe (°C)	Temperature measured at receipt (°C)	Receipt date and time	Analysis date
A	2.5	8	19/09/2017 12h00	20/09/2017
B	2.5	6	19/09/2017 06h49	20/09/2017
C	3.0	7.7	19/09/2017 10h20	20/09/2017
D	3.0	<i>Not communicated</i>	19/09/2017 16h00	20/09/2017
E	3.5	3.3	20/09/2017 12h30	20/09/2017
F	4.0	6.1	20/09/2017 08h00	20/09/2017
G	3.5	4.3	19/09/2017 12h40	20/09/2017
H	3.5	6.2	19/09/2017 09h30	20/09/2017
I	3.5	7.5	19/09/2017 11h30	20/09/2017
J	4.0	10	19/09/2017 18h00	20/09/2017
K	/	10.9	19/09/2017 17h00	20/09/2017
L	3.5	<i>Not communicated</i>	<i>Not communicated</i>	20/09/2017
M	3.0	6.9	20/09/2017 11h00	20/09/2017
N	3.5	5.4	19/09/2017 10h45	20/09/2017
O	3.0	5.5	19/09/2017 12h00	20/09/2017

The temperatures measured at receipt by the collaborators were above the limit for 2 Labs (J and K). For laboratory J, the temperature measured by the probe is acceptable. Unfortunately, the probe was not received yet to check the temperature during transport or at receipt for one of these Labs (Lab K). Taking into account the temperature measured by the probe for all the other Labs which was comprised between 2.5 and 4°C, it was decided to keep the Lab K.

4.2.3 Homogeneity of inoculation

Homogeneity tests were conducted according to the ISO/TS 22117. Ten samples per inoculation level were analyzed in duplicate by the reference method. The results are provided in **Appendix 9**. The test concluded that the samples were sufficiently homogeneous for the three contamination levels.

4.3 Calculation, interpretation, and summary of data

The raw data are given in **Appendix 10**.

4.3.1 Results obtained by the expert Lab.

The results obtained by the expert Lab. are the following (See Table 10).

Table 10 – Results obtained by the expert Lab.

Level	Reference method		Alternative method	
	CFU/g	log CFU/g	CFU/g	log CFU/g
L0	< 10	< 1.00	< 10	< 1.00
	< 10	< 1.00	< 10	< 1.00
L1	300	2.48	340	2.53
	360	2.56	530	2.72
L2	33 000	4.52	38 000	4.58
	45 000	4.65	55 000	4.74
L3	460 000	5.66	410 000	5.61
	330 000	5.52	390 000	5.59

4.3.2 Results obtained by the collaborators

Samples were sent to 15 collaborators.

Four Collaborators (A, D, F, and K) encountered difficulties to enumerate the colonies on MRS plates. Lab D did not dry the MRS plates before using; no interpretable results were obtained.

Lab C probably inverted two samples for the analysis with the ISO method (samples 8 & 7) but this Lab was not able to confirm this point.

Labs C and D were not kept for interpretation.

Due to the unexpected results obtained with the ISO method, two interpretations are proposed in this report:

- 13 collaborators: Labs C and D excluded;
- 10 collaborators: Labs, A, C, D, F, K excluded.

A summary of the test results is given in Table 11 (CFU/g) and Table 12 (log CFU/g).

Table 11 - Summary of data (CFU/g)

Collaborators	Raw data (CFU/g)															
	Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method	
	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2
	Blank level				Low level				Medium level				High level			
A	<10	<10	<10	<10	460	1200	420	460	7800	7500	39000	51000	32000	580000	560000	670000
B	<10	<10	<10	<10	610	260	480	380	55000	44000	46000	47000	430000	380000	560000	420000
E	<10	<10	<10	<10	500	260	450	580	46000	52000	51000	51000	410000	290000	440000	470000
F	<10	<10	<10	<10	160	160	520	570	1800	2500	28000	28000	23000	4200	510000	560000
G	<10	<10	<10	<10	570	490	550	170	61000	47000	74000	55000	770000	790000	620000	620000
H	<10	<10	<10	<10	560	440	480	480	25000	21000	45000	41000	410000	480000	630000	620000
I	<10	<10	<10	<10	510	940	470	580	49000	81000	73000	80000	640000	1000000	790000	1000000
J	<10	<10	<10	<10	580	660	600	660	45000	36000	50000	55000	530000	590000	730000	480000
K	<10	<10	<10	<10	360	360	600	510	42000	130000	52000	65000	110000	180000	750000	480000
L	<10	<10	<10	<10	290	510	670	710	54000	68000	56000	81000	560000	590000	690000	730000
M	<10	<10	<10	<10	510	520	440	440	35000	35000	56000	39000	450000	310000	370000	610000
N	<10	<10	<10	<10	540	360	670	650	75000	45000	76000	70000	320000	330000	550000	700000
O	<10	<10	<10	<10	410	400	580	710	53000	54000	64000	65000	560000	690000	800000	680000

Table 12 - Summary of data (log CFU/g)

Collaborators	Raw data (Log CFU/g)															
	Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method	
	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2
	Blank level				Low level				Medium level				High level			
A	<1,00	<1,00	<1,00	<1,00	2,66	3,08	2,62	2,66	3,89	3,88	4,59	4,71	4,51	5,76	5,75	5,83
B	<1,00	<1,00	<1,00	<1,00	2,79	2,41	2,68	2,58	4,74	4,64	4,66	4,67	5,63	5,58	5,75	5,62
E	<1,00	<1,00	<1,00	<1,00	2,70	2,41	2,65	2,76	4,66	4,72	4,71	4,71	5,61	5,46	5,64	5,67
F	<1,00	<1,00	<1,00	<1,00	2,20	2,20	2,72	2,76	3,26	3,40	4,45	4,45	4,36	3,62	5,71	5,75
G	<1,00	<1,00	<1,00	<1,00	2,76	2,69	2,74	2,23	4,79	4,67	4,87	4,74	5,89	5,90	5,79	5,79
H	<1,00	<1,00	<1,00	<1,00	2,75	2,64	2,68	2,68	4,40	4,32	4,65	4,61	5,61	5,68	5,80	5,79
I	<1,00	<1,00	<1,00	<1,00	2,71	2,97	2,67	2,76	4,69	4,91	4,86	4,90	5,81	6,00	5,90	6,00
J	<1,00	<1,00	<1,00	<1,00	2,76	2,82	2,78	2,82	4,65	4,56	4,70	4,74	5,72	5,77	5,86	5,68
K	<1,00	<1,00	<1,00	<1,00	2,56	2,56	2,78	2,71	4,62	5,11	4,72	4,81	5,04	5,26	5,88	5,68
L	<1,00	<1,00	<1,00	<1,00	2,46	2,71	2,83	2,85	4,73	4,83	4,75	4,91	5,75	5,77	5,84	5,86
M	<1,00	<1,00	<1,00	<1,00	2,71	2,72	2,64	2,64	4,54	4,54	4,75	4,59	5,65	5,49	5,57	5,79
N	<1,00	<1,00	<1,00	<1,00	2,73	2,56	2,83	2,81	4,88	4,65	4,88	4,85	5,51	5,52	5,74	5,85
O	<1,00	<1,00	<1,00	<1,00	2,61	2,60	2,76	2,85	4,72	4,73	4,81	4,81	5,75	5,84	5,90	5,83

4.4 Calculations and interpretations

4.4.1 Visual linearity checking

The figures 10 (13 Labs) and 11 (10 Labs) show the data points after \log_{10} transformation.

Figure 10 - Visual linearity checking (13 Labs)

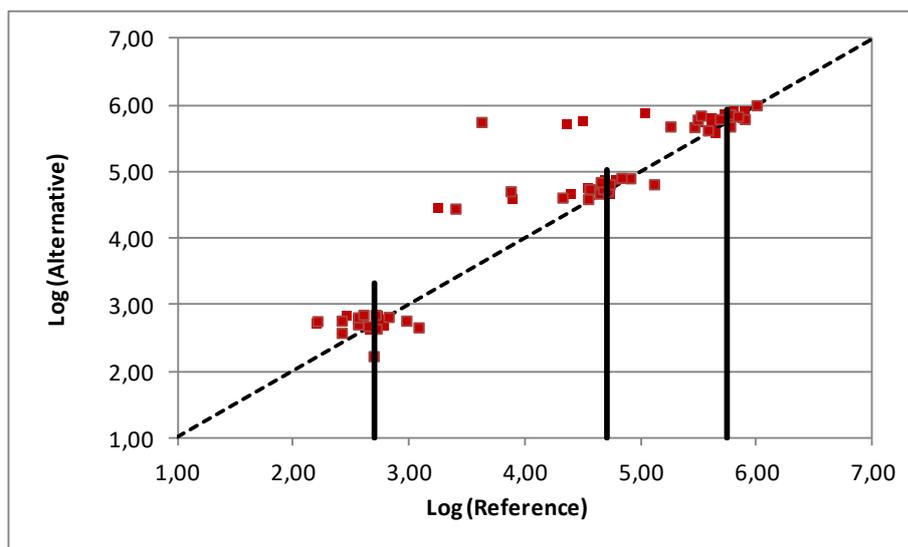
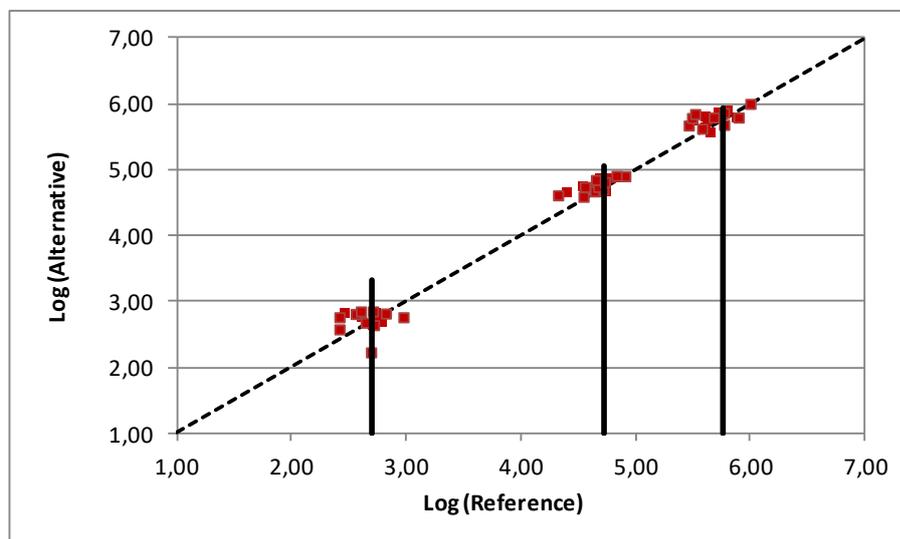


Figure 11 - Visual linearity checking (10 Labs)



The graph using the data from 13 Labs clearly shows a lack of linearity for the inoculation levels 2 and 3. It can be seen that it is some of the results of the reference method that are underestimated at the mid and high levels. This was probably due to the difficulties encountered by the collaborators when using the ISO 15214 method:

- Mistakes when reporting the results in the data sheet provided linked to the fact that the method uses a spreading method.
- MRS plates not correctly dried leading to spreading colonies difficult to enumerate correctly.

The graph using the data from 10 Labs (after exclusion of the results of the 3 labs who get significant underestimation on reference method) shows that the alternative method gives results, which are proportional to those of the reference method. The data are distributed closely to the identity line.

4.4.2 Accuracy profile calculations

The accuracy profile calculation was run using the data from 10 collaborators in agreement with the AFNOR Certification technical Committee.

Statistical calculations were done according to the Excel spreadsheet available on <http://standards.iso.org/ISO/16140>. A summary of the statistical test is provided in Table 13 (10 Labs).

These values are collected in a graphical representation together with the acceptability limits (AL). This representation is given Figure 12 (10 Labs).

It is observed that for all the levels and both interpretations, the tolerance interval limits of the alternative method are within the acceptable limits of 0.5 log. The alternative method is equivalent to the reference method.

Table 13 - Summary of statistical tests (10 Labs)

Accuracy profile			
Study Name	3M Petrifilm LAB		
Date			
Coordinator			
Tolerance probability (beta)	80%	80%	80%
Acceptability limit in log (lambda)	0,50	0,50	0,50

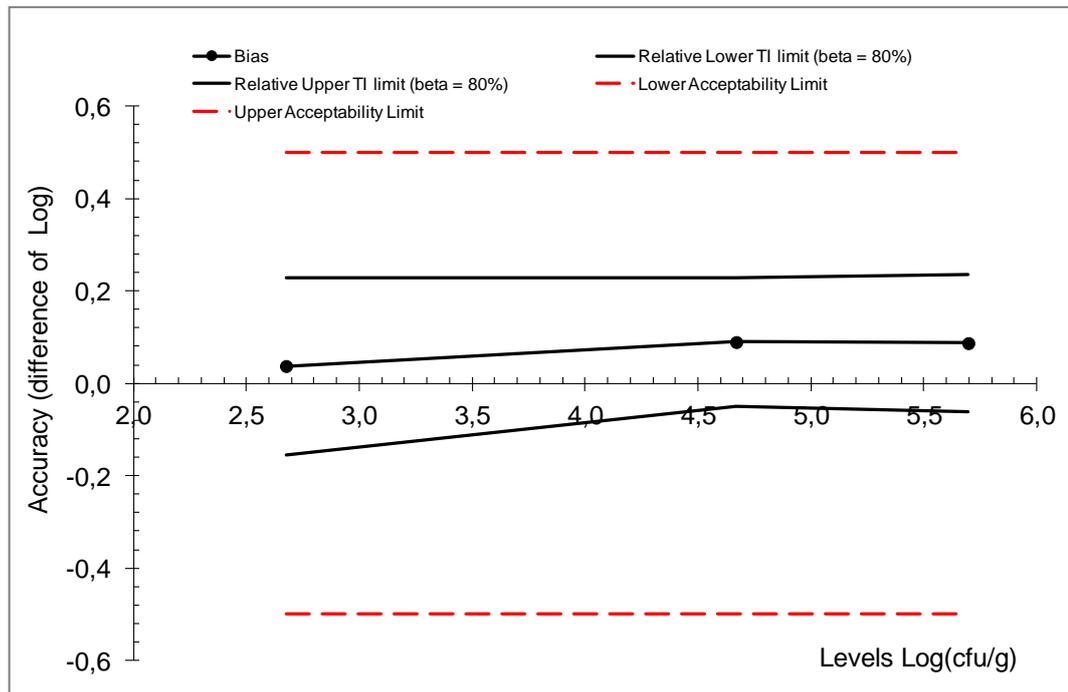
0,5

FAUX

Application of clause 6.2.3
 Step 8: If any of the values for the β -ETI fall outside the acceptability limits, calculate the pooled average reproducibility standard deviation of the reference method.
 Step 9: Calculate new acceptability limits as a function of this standard deviation.

Levels	Alternative method			Reference method		
	Low	Medium	High	Low	Medium	High
Target value	2,676	4,669	5,697			
Number of participants (K)	10	10	10	10	10	10
Average for alternative method	2,713	4,759	5,784	2,676	4,669	5,697
Repeatability standard deviation (sr)	0,123	0,061	0,079	0,141	0,086	0,073
Between-labs standard deviation (sL)	0,067	0,079	0,073	0,000	0,120	0,133
Reproducibility standard deviation (sR)	0,140	0,099	0,108	0,141	0,147	0,151
Corrected number of dof	17,603	12,977	14,981	18,947	12,579	11,317
Coverage factor	1,372	1,404	1,389			
Interpolated Student t	1,332	1,350	1,341			
Tolerance interval standard deviation	0,1439	0,1032	0,1114			
Lower TI limit	2,521	4,619	5,635			
Upper TI limit	2,905	4,898	5,933			
Bias	0,037	0,089	0,087			
Relative Lower TI limit (beta = 80%)	-0,154	-0,050	-0,062	FAUX		
Relative Upper TI limit (beta = 80%)	0,229	0,229	0,236	FAUX		
Lower Acceptability Limit	-0,50	-0,50	-0,50			
Upper Acceptability Limit	0,50	0,50	0,50			
New acceptability limits may be based on reference method pooled variance						
Pooled repro standard dev of reference	0,147					

Figure 12 - Accuracy profile (10 Labs)



In these conditions, the results obtained with the alternative method are not statistically different from those obtained with the reference method.

5 GENERAL CONCLUSION

The **method comparison study conclusions** are:

- The observed data and interpretation confirm the performances of the alternative method:
- 143 samples were tested in the relative trueness study providing 97 interpretable results, which clearly satisfied the required criteria for quantitative method comparison per ISO 16140-2; this study confirms as well the possibility to store 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate for a week at - 18°C before reading.
- The observed accuracy profiles are comprised within the Acceptability Limits.
- The inclusivity and exclusivity testing shows satisfying results.

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

- The quality assurance parameters were verified (*i.e.* homogeneity of inoculation, targeted levels, strain stability, logistic conditions, analyses), confirming that the inter-laboratory study was conducted in appropriate conditions.
- The data interpretations were done according to the EN ISO 16140-2:2016.** For the three contamination levels, the alternative method is accepted as equivalent to the reference method.

Based on the results obtained for the method comparison study and the inter-laboratory study, the 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate is considered equivalent to the reference method.

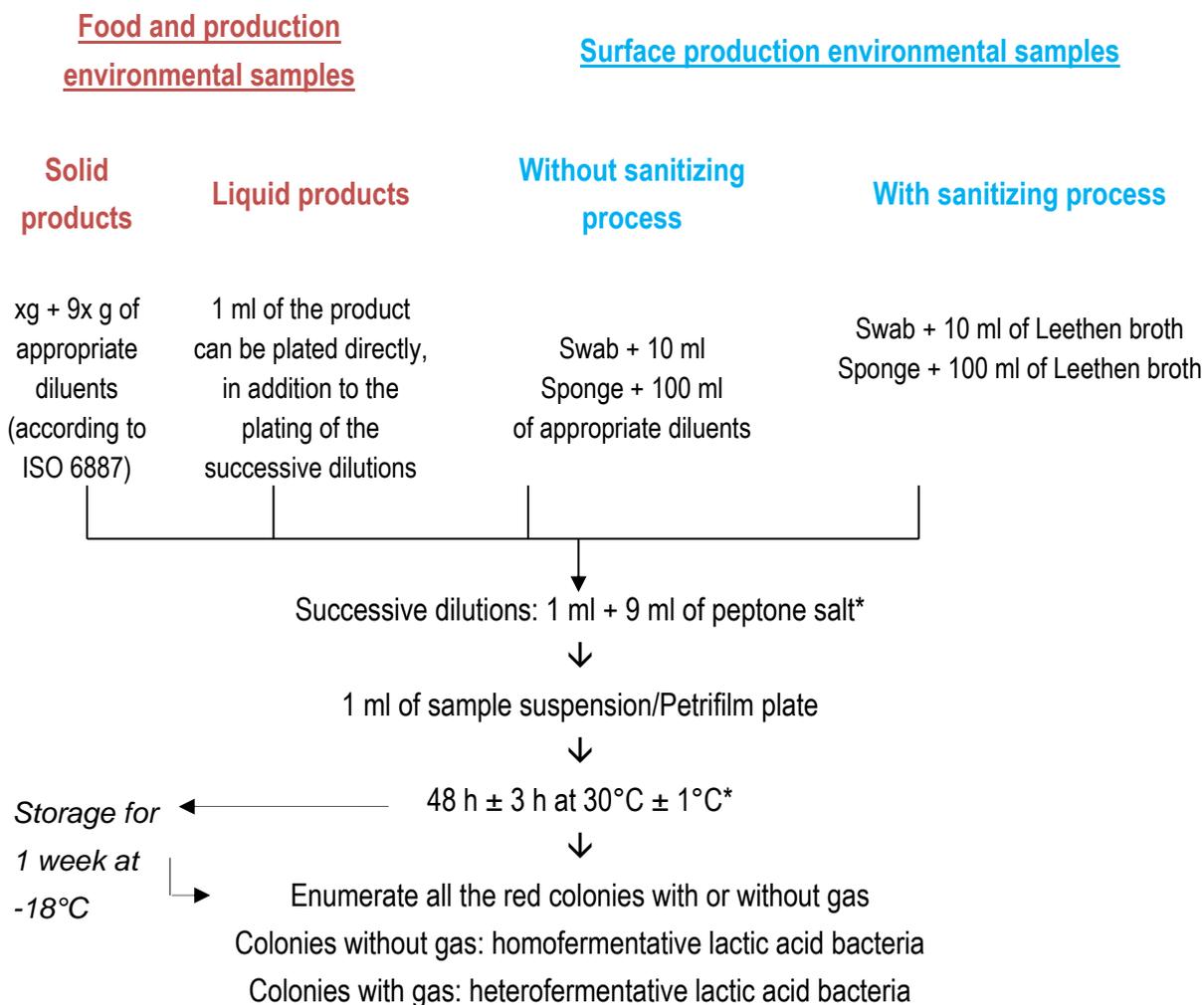
Quimper, 29 October 2021

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



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

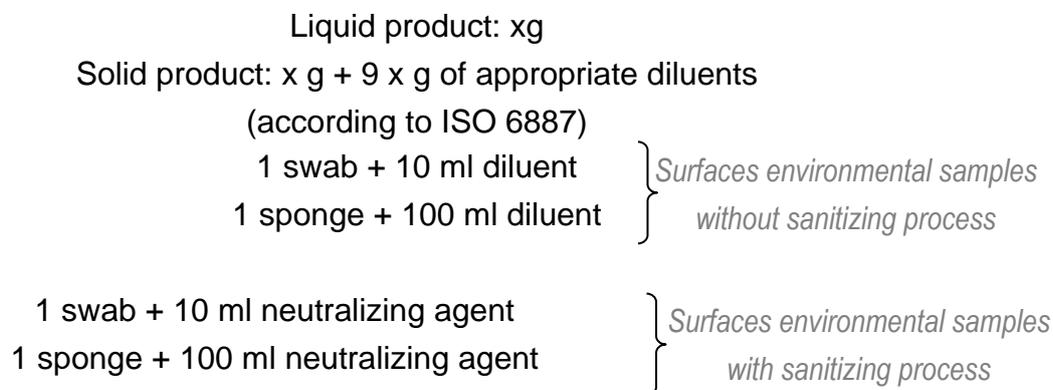
Appendix 1 - Flow diagram of the alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria Count Plate



*or other diluent listed in ISO 6887

* Note that during the validation study, the minimum incubation time was tested.

**Appendix 2 - Flow diagram of the reference method:
ISO 15214 (1998): Microbiology of food and animal feeding stuffs.
Horizontal method for the enumeration of mesophilic lactic acid bacteria
colony – count technique at 30°C.**



Stomach



Spread:

1 ml onto 3 plates of MRS pH 5.7

0.1 ml onto 1 plate of MRS pH 5.7



Decimal dilutions in peptone salt *



Spread 0.1 ml onto 1 plate of MRS pH 5.7



Incubation in anaerobic conditions

for 72 h ± 3 h at 30°C ± 1°C



Enumeration

✚ Or other diluent listed in ISO 6887

Appendix 3 – Artificial contaminations of samples

Sample number	Product (French name)	Product	Inoculation		
			Strain		Injury protocol
			Reference	Origin	
3755	Pâté de campagne	Pâté	<i>Lactobacillus curvatus</i> Ad380	Delicatessen	Seeding 5°C 72H
3756	Mousse de foie	Pâté	<i>Lactobacillus curvatus</i> Ad380	Delicatessen	Seeding 5°C 72H
3757	Saucisson sec	Fermented dry sausage	<i>Lactobacillus curvatus</i> Ad380	Delicatessen	Seeding 5°C 72H
3758	Crème fraîche épaisse entière au lait pasteurisé	Fresh cream	<i>Enterococcus faecalis</i> 85L012	Milk	Seeding 5°C 72H
3759	Lait frais 1/2 écrémé pasteurisé	Pasteurized milk	<i>Enterococcus faecalis</i> 85L012	Milk	Seeding 5°C 72H
3760	Boisson lactée arôme fraise	Milk beverage	<i>Enterococcus faecalis</i> 85L012	Milk	Seeding 5°C 72H
3761	Boisson lactée cacaoitée	Milk beverage	<i>Lactobacillus farciminis</i> Ad1098	Dairy product	Seeding 5°C 72H
3762	Semoule au lait	Semolina pudding	<i>Lactobacillus farciminis</i> Ad1098	Dairy product	Seeding 5°C 72H
3763	Encornet farci	Seafood reheat meals	<i>Enterococcus faecalis</i> Ad288	Ready to eat meals	Seeding 5°C 72H
3764	Crevettes sauce piquante	Cooked shrimps	<i>Enterococcus faecalis</i> Ad288	Ready to eat meals	Seeding 5°C 72H
3765	Terrine aux Saint Jacques	Scallop terrine	<i>Enterococcus faecalis</i> Ad288	Ready to eat meals	Seeding 5°C 72H
3766	Terrine de saumon et saumon fumé citron/ciboulette	Salmon terrine	<i>Enterococcus faecalis</i> Ad288	Ready to eat meals	Seeding 5°C 72H
3767	Cocktail de fruits de mer	Seafood cocktail	<i>Lactobacillus sakei</i> SM004	Smoked salmon	Seeding 5°C 72H
3768	Filets de harengs fumés doux	Smoked herring	<i>Lactobacillus sakei</i> SM004	Smoked salmon	Seeding 5°C 72H
3769	Lardons de saumon fumé	Smoked salmon	<i>Lactobacillus sakei</i> SM004	Smoked salmon	Seeding 5°C 72H
3770	Mini tranches de truite fumée	Smoked trout	<i>Lactobacillus sakei</i> SM004	Smoked salmon	Seeding 5°C 72H
3785	Eau de process (atelier salaison)	Process water	<i>Streptococcus macedonicus</i> Ad1347	Water	Seeding 5°C 48H
3786	Eau de process (atelier salaison)	Process water	<i>Lactococcus garvieae</i> Ad1640	Compost	Seeding 5°C 48H
3787	Eponge cours de process (atelier salaison)	Sponge collected during process	<i>Lactobacillus brevis</i> 85S002	Deli salad	Seeding 5°C 48H

Sample number	Product (French name)	Product	Inoculation		
			Strain		Injury protocol
			Reference	Origin	
3788	Eau de process (atelier poisson fumé)	Process water	<i>Streptococcus macedonicus</i> Ad1347	Water	Seeding 5°C 48H
3789	Eau de process (atelier poisson fumé)	Process water	<i>Lactococcus garvieae</i> Ad1640	Compost	Seeding 5°C 48H
3790	Ecouvillon cours de process (atelier poisson fumé)	Swab collected during process	<i>Enterococcus gallinarum</i> Ad1885	Environment sample	Seeding 5°C 48H
3791	Ecouvillon cours de process (atelier poisson fumé)	Swab collected during process	<i>Enterococcus gallinarum</i> Ad1885	Environment sample	Seeding 5°C 48H
3792	Déchets de sol (atelier poisson fumé)	Wastes	<i>Enterococcus gallinarum</i> Ad1885	Environment sample	Seeding 5°C 48H
3793	Déchets de sol (atelier poisson fumé)	Wastes	<i>Enterococcus gallinarum</i> Ad1885	Environment sample	Seeding 5°C 48H
3794	Déchets de sol (atelier poisson fumé)	Wastes	<i>Enterococcus gallinarum</i> Ad1885	Environment sample	Seeding 5°C 48H
3795	Mélange de jeunes pousses	Baby leaves	<i>Lactococcus garvieae</i> Ad1640	Compost	Seeding 5°C 48H
3796	Tendres pouces	Baby leaves	<i>Lactococcus garvieae</i> Ad1640	Compost	Seeding 5°C 48H
3797	Roquette	Salad	<i>Lactococcus garvieae</i> Ad1640	Compost	Seeding 5°C 48H
3798	Mâche	Salad	<i>Lactococcus garvieae</i> Ad1640	Compost	Seeding 5°C 48H
3800	Quiche saumon brocolis	Quiche	<i>Lactobacillus brevis</i> 85S002	Deli salad	Seeding 5°C 48H
3801	Sauce hollandaise au poivre mignonnette	Dressing	<i>Lactobacillus brevis</i> 85S002	Deli salad	Seeding 5°C 48H
3803	Mayonnaise	Mayonnaise	<i>Enterococcus durans</i> Ad182	Liquid egg	Seeding 5°C 48H
3804	Œuf entier liquide pasteurisé	Liquid egg	<i>Enterococcus durans</i> Ad182	Liquid egg	Seeding 5°C 48H
3805	Sauce armoricaine au cognac	Dressing	<i>Enterococcus durans</i> Ad182	Liquid egg	Seeding 5°C 48H
3806	Cubes de saumon mariné basilic	Marinated salmon	<i>Lactobacillus sakei</i> SM004	Smoked salmon	Seeding 5°C 48H
3807	Calamars marinés citron basilic	Marinated squid	<i>Lactobacillus sakei</i> SM004	Smoked salmon	Seeding 5°C 48H
3808	Tartelette fraise	Pastry with strawberries	<i>Leuconostoc pseudomesenteroides</i> Ad835	Chocolate cream	Seeding 5°C 48H
3809	Choux crème pâtissière	Pastry (cream)	<i>Leuconostoc pseudomesenteroides</i> Ad835	Chocolate cream	Seeding 5°C 48H

Sample number	Product (French name)	Product	Inoculation		
			Strain		Injury protocol
			Reference	Origin	
3810	Eclair chocolat	Chocolate éclair	<i>Leuconostoc pseudomesenteroïdes</i> Ad835	Chocolate cream	Seeding 5°C 48H
3811	Mille-feuilles framboises	Pastry with raspberries	<i>Leuconostoc pseudomesenteroïdes</i> Ad835	Chocolate cream	Seeding 5°C 48H
4069	Pâté en croute	Pork pie	<i>Lactobacillus paraplantarum</i> Ad372	Cooked sausage	Seeding 5°C 72H
4070	Petit pot de crème cuite au four chocolat au lait entier	Dairy based dessert	<i>Enterococcus faecalis</i> 85L012	Milk	Seeding 5°C 72H
4071	Gnocchi semoule de blé dur	Gnocchi	<i>Enterococcus faecalis</i> Ad289	Ready to eat meals	Seeding 5°C 72H
4072	Chou chantilly fraises	Pastry	<i>Enterococcus faecalis</i> 85L012	Milk	Seeding 5°C 72H
4073	Far aux pruneaux	Pastry	<i>Enterococcus durans</i> Ad182	Liquid egg	Seeding 5°C 72H
4074	Quatre quart	Pastry	<i>Enterococcus durans</i> Ad182	Liquid egg	Seeding 5°C 72H
4075	Eau de rinçage après désinfection (atelier poisson fumé)	Rinse water after cleaning process (smoked fish industry)	<i>Streptococcus macedonicus</i> Ad1347	Water	Seeding 5°C 72H
4076	Eau de rinçage avant nettoyage (atelier végétaux)	Rinse water before cleaning process (vegetables industry)	<i>Leuconostoc citrum</i> Ad473	Ham	Seeding 5°C 72H
4077	Eau de rinçage avant nettoyage (atelier végétaux)	Rinse water before cleaning process (vegetables industry)	<i>Leuconostoc citrum</i> Ad473	Ham	Seeding 5°C 72H
4078	Déchets saucisses végétales	Veggie sausages wastes	<i>Lactobacillus fermentum</i> Ad482	Tomato juice	Seeding 5°C 72H
4079	Déchets saucisses végétales	Veggie sausages wastes	<i>Lactobacillus fermentum</i> Ad482	Tomato juice	Seeding 5°C 72H
4080	Ecouvillon poussoir après désinfection (atelier végétaux)	Swab after cleaning process (vegetables industry)	<i>Streptococcus macedonicus</i> Ad1347	Water	Seeding 5°C 72H
4209	Sauce beurre citron	Dressing (butter, lemon)	<i>Lactobacillus paraplantarum</i> Ad372	Cooked sausage	Seeding 5°C 48H

Appendix 4 - Relative trueness study: raw data

TNTC : Too numerous to count

Analyses performed according to the COFRAC accreditation (ADRIA Développement, Expert Laboratory)

MEAT PRODUCTS																						
Sample No	Product (French name)	Product	Reference method NF ISO 15214					Alternative method: 3M Petrifilm Lactic Acid Bacteria Count Plate													Category	Type
			Dilution	cfu/plate	Confirmed cfu /plate	cfu/g	Log (cfu/g)	45h - 30°C±1°C					45h - 30°C±1°C and 1 week at -18°C									
								Dilution	Hetero-fermentative lactic acid bacteria (with gas) cfu/Petrifilm plate	Homo-fermentative lactic acid bacteria (without gas) cfu/Petrifilm plate	Total colonies cfu/Petrifilm plate	cfu/g	Log (cfu/g)	Dilution	Hetero-fermentative lactic acid bacteria (with gas) cfu/Petrifilm plate	Homo-fermentative lactic acid bacteria (without gas) cfu/Petrifilm plate	Total colonies cfu/Petrifilm plate	cfu/g	Log (cfu/g)			
7175	Paella poulet	Chicken paella	10000	252	252	2600000	6,41	100000	10	30	40	3900000	6,59	100000	6	41	47	4600000	6,66	1	a	
			100000	39	39			1000000	1	2	3			1000000	0	4	4					
7228	Poulet curry	Chicken curry	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	1	a	
			100	0	0			100	0	0	0			100	0	0	0					
1271	Porc au caramel	Cooked meats (pork)	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	1	a	
			100	0	0			100	0	0	0			100	0	0	0					
1274	Nouilles chinoises poulet-légumes	Cooked meats (chicken)	10	12	12	120	2,08	10	0	14	14	140	2,15	10	0	13	13	130	2,11	1	a	
			100	1	1			100	0	1	1			100	0	1	1					
3515	Knacks porc	Cooked sausage	10	0	0	<10	<1,00	10	0	TNTC	TNTC	TNTC	TNTC	10	0	TNTC	TNTC	TNTC	TNTC	1	a	
			100	0	0			100	0	0	0			100	0	0	0					
3516	Saucisse de Francfort	Cooked sausage	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	1	a	
			100	0	0			100	0	0	0			100	0	0	0					
3517	Rôti porc	Cooked pork meat	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	1	a	
			100	0	0			100	0	0	0			100	0	0	0					
3518	Jambon blanc	Ham	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	1	a	
			100	0	0			100	0	0	0			100	0	0	0					
3519	Jambon blanc	Ham	10	2	2	20	1,30*	10	2	1	3	30	1,48*	10	2	1	3	30	1,48*	1	a	
			100	0	0			100	1	0	1			100	1	0	1					
3755	Pâté de campagne	Pâté	100	34	34	3500	3,54	100	0	187	187	19000	4,28	100	0	180	180	19000	4,28	1	a	
			1000	5	5			1000	0	24	24			1000	0	24	24					
3756	Mousse de foie	Pâté	10	11	11	100	2,00	100	0	16	16	1800	3,26	100	0	16	16	1700	3,23	1	a	
			100	0	0			1000	0	4	4			1000	0	3	3					
4069	Pâté en croûte	Pork pie	100	233	233	25000	4,40	100	0	291	291	29000	4,46	100	0	287	287	29000	4,46	1	a	
			1000	43	43			1000	0	28	28			1000	0	28	28					
7372	Salami	Salami	100000	247	247	26000000	7,41	100000	2	80	82	8300000	6,92	100000	1	81	82	8300000	6,92	1	b	
			1000000	34	34			1000000	2	7	9			1000000	1	8	9					
7463	Bacon fumé	Smoked bacon	10000	255	255	2600000	6,41	10000	0	182	182	1900000	6,28	10000	0	205	205	2050000	6,31	1	b	
			100000	31	31			100000	0	30	30			100000	0	36	36					
7464	Rosette	Sausage	10000	166	166	1700000	6,23	10000	0	64	64	630000	5,80	10000	0	67	67	650000	5,81	1	b	
			100000	20	20			100000	0	5	5			100000	0	5	5					
7465	Jambon sec	Cured ham	100	254	254	26000	4,41	100	0	132	132	14000	4,15	100	0	141	141	15000	4,18	1	b	
			1000	31	31			1000	0	17	17			1000	0	20	20					
3521	Saucisses sèches	Fermented sausage	1000	94	94	90000	4,95	10000	0	44	44	440000	5,64	10000	1	46	47	460000	5,66	1	b	
			10000	5	5			100000	0	4	4			100000	0	4	4					
3757	Saucisson sec	Fermented dry sausage	10000	>300	/	9500000	6,98	10000	0	>300	>300	12000000	7,08	10000	0	>300	>300	12000000	7,08	1	b	
			100000	95	95			100000	0	123	123			100000	0	120	120					

MEAT PRODUCTS																					
Sample No	Product (French name)	Product	Reference method NF ISO 15214					Alternative method: 3M Petrifilm Lactic Acid Bacteria Count Plate												Category	Type
			Dilution	cfu/plate	Confirmed cfu /plate	cfu/g	Log (cfu/g)	45h - 30°C±1°C					45h - 30°C±1°C and 1 week at -18°C								
								Dilution	Hetero-fermentative lactic acid bacteria (with gas) cfu/Petrifilm plate	Homo-fermentative lactic acid bacteria (without gas) cfu/Petrifilm plate	Total colonies cfu/Petrifilm plate	cfu/g	Log (cfu/g)	Dilution	Hetero-fermentative lactic acid bacteria (with gas) cfu/Petrifilm plate	Homo-fermentative lactic acid bacteria (without gas) cfu/Petrifilm plate	Total colonies cfu/Petrifilm plate	cfu/g	Log (cfu/g)		
7173	Merguez	Merguez	10000	48	48	460000	5,66	10000	9	34	43	440000	5,64	10000	13	44	57	600000	5,78	1	c
			100000	3	3			100000	1	4	5			100000	1	8	9				
7174	Chipolatas	Raw pork sausage	1000	144	144	140000	5,15	1000	0	98	98	97000	4,99	1000	0	104	104	110000	5,04	1	c
			10000	11	11			10000	0	9	9			10000	1	11	12				
3520	Saucisse de Montbéliard	Raw sausage	10	40	40	390	2,59	10	48	42	90	890	2,95	10	46	44	90	890	2,95	1	c
			100	3	3			100	6	2	8			100	5	3	8				
3771	Merguez de volaille	Merguez	1000	66	66	67000	4,83	1000	35	53	88	93000	4,97	1000	29	53	82	87000	4,94	1	c
			10000	8	8			10000	6	8	14			10000	6	8	14				
3772	Filet de bacon fumé	Sliced bacon	100000	112	112	11000000	7,04	100000	0	115	115	12000000	7,08	100000	0	118	118	12000000	7,08	1	c
			1000000	11	11			1000000	0	17	17			1000000	1	16	17				

TNTC : Too numerous to count

Analyses performed according to the COFRAC accreditation

DAIRY PRODUCTS																						
Sample No	Product (French name)	Product	Reference method NF ISO 15214					Alternative method: 3M Petrifilm Lactic Acid Bacteria Count Plate													Category	Type
			Dilution	cfu/plate	Confirmed cfu /plate	cfu/g	Log (cfu/g)	45h - 30°C±1°C					45h - 30°C±1°C and 1 week at -18°C									
								Dilution	Hetero-fermentative lactic acid bacteria (with gas) cfu/Petrifilm plate	Homo-fermentative lactic acid bacteria (without gas) cfu/Petrifilm plate	Total colonies cfu/Petrifilm plate	cfu/g	Log (cfu/g)	Dilution	Hetero-fermentative lactic acid bacteria (with gas) cfu/Petrifilm plate	Homo-fermentative lactic acid bacteria (without gas) cfu/Petrifilm plate	Total colonies cfu/Petrifilm plate	cfu/g	Log (cfu/g)			
7144	Bleu d'Auvergne au lait pasteurisé	Pasteurised milk cheese	10000	253	253	2400000	6,38	10000	91	5	96	920000	5,96	10000	83	19	102	990000	6,00	2	a	
			100000	14	14			100000	5	0	5			100000	5	2	7					
7145	Maroilles au lait pasteurisé	Pasteurised milk cheese	100000	240	240	24000000	7,38	100000	32	134	166	17000000	7,23	100000	32	142	174	18000000	7,26	2	a	
			1000000	28	28			1000000	8	9	17			1000000	8	11	19					
3524	Tomme noire	Pasteurised milk cheese	100000	>300	/	84000000	7,92	100000	0	>300	>300	210000000	8,32	100000	0	>300	>300	240000000	8,38	2	a	
			1000000	84	84	N'	N'	1000000	0	212	212			1000000	0	243	243					
3525	Crottin chèvre	Pasteurised milk cheese	1000	>300	/	40000	4,60	1000	0	27	27	27000	4,43	1000	0	22	22	23000	4,36	2	a	
			10000	48	4	N'	N'	10000	0	3	3			10000	0	3	3					
3526	Camembert	Pasteurised milk cheese	10000	>300	/	5200000	6,72	100000	102	134	236	38000000	7,58	100000	88	189	277	29000000	7,46	2	a	
			100000	52	52	N'	N'	1000000	17	21	38			1000000	13	25	38					
7226	Panna cotta	Panna cotta	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	2	b	
			100	0	0			100	0	0	0			100	0	0	0					
7227	Riz au lait	Milk rice	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	2	b	
			100	0	0			100	0	0	0			100	0	0	0					
3758	Crème fraîche épaisse entière au lait pasteurisé	Fresh cream	100	>300	>300	>300000	>5,48	100	0	>300	>300	>300000	>5,48	100	0	>300	>300	>300000	>5,48	2	b	
			1000	>300	>300			1000	0	>300	>300			1000	0	>300	>300					
3759	Lait frais 1/2 écrémé pasteurisé	Pasteurized milk	10	9	9	90	1,95	10	0	8	8	80	1,90	10	0	8	8	80	1,90	2	b	
			100	1	/	Ne	Ne	100	0	0	0			100	0	0	0	Ne	Ne			
3760	Boisson lactée arôme fraise	Milk beverage	10	97	97	1000	3,00	100	0	28	28	2700	3,43	100	0	28	28	2700	3,43	2	b	
			100	18	18			1000	0	2	2			1000	0	2	2					
3761	Boisson lactée cacaoitée	Milk beverage	10000	64	64	640000	5,81	10000	0	95	95	910000	5,96	10000	0	98	98	940000	5,97	2	b	
			100000	18	18	N'	N'	100000	0	5	5			100000	0	5	5					
3762	Semoule au lait	Semolina pudding	1000	130	130	120000	5,08	1000	0	111	111	110000	5,04	1000	0	109	109	110000	5,04	2	b	
			10000	7	7			10000	0	9	9			10000	0	9	9					
3990	Crème fraîche épaisse entière au lait pasteurisé	Pasteurized cream	100000	6	6	600000	5,78	10000	0	110	110	1100000	6,04	10000	0	100	100	980000	5,99	2	b	
			1000000	1	/	Ne	Ne	100000	0	9	9			100000	0	8	8					
4070	Petit pot de crème cuite au four chocolat au lait entier	Dairy based dessert	100	76	76	7700	3,89	100	0	68	68	6900	3,84	100	0	66	66	6500	3,81	2	b	
			1000	9	9			1000	0	8	8			1000	0	6	6					
7230	Lait fermenté	Fermented milk	1000	281	281	281000	5,45	100	35	56	91	9100	3,96	100	35	56	91	9100	3,96	2	c	
			10000	54	54		N'	1000	2	7	9			1000	2	7	9					
7373	Gros lait	Fermented milk	10000	109	109	1100000	6,04	10000	44	33	77	780000	5,89	10000	35	45	80	810000	5,91	2	c	
			100000	15	15			100000	7	2	9			100000	6	3	9					
7468	Lait ribot	Fermented milk	100000	40	40	4000000	6,60	100000	32	6	38	4000000	6,60	100000	32	9	41	4300000	6,63	2	c	
			1000000	4	4			1000000	5	1	6			1000000	4	2	6					
2554	Lait fermenté sucré aux fruits et au bifidus	Fermented flavored milk	1000000	102	102	100000000	8,00	1000000	0	106	106	100000000	8,00	1000000	0	103	103	100000000	8,00	2	c	
			10000000	8	8			10000000	0	9	9			10000000	0	9	9					
2555	Lait fermenté au bifidus	Fermented milk	10000	54	54	500000	5,70	1000	0	240	240	240000	5,38	1000	0	241	241	240000	5,38	2	c	
			100000	1	1			10000	0	29	29			10000	0	27	27					

TNTC : Too numerous to count

Analyses performed according to the COFRAC accreditation

SEAFOOD PRODUCTS																						
Sample No	Product (French name)	Product	Reference method NF ISO 15214					Alternative method: 3M Petrifilm Lactic Acid Bacteria Count Plate													Category	Type
			Dilution	cfu/plate	Confirmed cfu /plate	cfu/g	Log (cfu/g)	45h - 30°C±1°C						45h - 30°C±1°C and 1 week at -18°C								
								Dilution	Hetero-fermentative lactic acid bacteria (with gas) cfu/Petrifilm plate	Homo-fermentative lactic acid bacteria (without gas) cfu/Petrifilm plate	Total colonies cfu/Petrifilm plate	cfu/g	Log (cfu/g)	Dilution	Hetero-fermentative lactic acid bacteria (with gas) cfu/Petrifilm plate	Homo-fermentative lactic acid bacteria (without gas) cfu/Petrifilm plate	Total colonies cfu/Petrifilm plate	cfu/g	Log (cfu/g)			
7141	Terrine saumon aneth	Salmon terrine	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	3	a	
			100	0	0			100	0	0	0			100	0	0	0					
7229	Acras de morue	Cod accras	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	3	a	
			100	0	0			100	0	0	0			100	0	0	0					
1272	Calamars farcis sauce provençale	Cooked squids	10	1	1	10	1,00*	10	0	4	4	40	1,60	10	0	4	4	40	1,60	3	a	
			100	0	0			100	0	1	1	Ne	Ne	100	0	0	0	Ne	Ne			
1273	Crevettes sauce piquante	Cooked shrimps	10	1	1	10	1,00*	10	0	1	1	10	1,00*	10	0	1	1	10	1,00*	3	a	
			100	0	0			100	0	0	0			100	0	0	0					
3763	Encornet farci	Seafood reheat meals	10	19	19	170	2,23	10	0	48	48	470	2,67	10	0	48	48	470	2,67	3	a	
			100	0	0			100	0	4	4			100	0	4	4					
3764	Crevettes sauce piquante	Cooked shrimps	1000	217	217	220000	5,34	10000	0	33	33	320000	5,51	10000	0	33	33	320000	5,51	3	a	
			10000	26	26			100000	0	2	2			100000	0	2	2					
3765	Terrine aux Saint Jacques	Scallops terrine	100	55	55	5500	3,74	100	0	39	39	4500	3,65	100	0	39	39	4500	3,65	3	a	
			1000	6	6			1000	0	10	10			1000	0	10	10					
3766	Terrine de saumon et saumon fumé citron/ciboulette	Salmon terrine	1000	51	51	51000	4,71	1000	0	41	41	40000	4,60	1000	0	41	41	40000	4,60	3	a	
			10000	5	5			10000	0	3	3			10000	0	3	3					
3767	Cocktail de fruits de mer	Seafood cocktail	1000	155	155	170000	5,23	1000	0	>300	>300	430000	5,63	1000	0	>300	>300	430000	5,63	3	a	
			10000	36	36			10000	0	43	43	N'	N'	10000	0	43	43	N'	N'			
7142	Saumon fumé	Smoked salmon	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	3	b	
			100	0	0			100	0	0	0			100	0	0	0					
7466	Emincé de saumon fumé aux 5 baies	Smoked salmon seasoned	10	0	0	<10	<1,00	10	0	1	1	10	1,00*	10	0	1	1	10	1,00*	3	b	
			100	0	0			100	0	0	0			100	0	0	0					
7911	Saumon fumé bio	Smoked salmon	10	0	0	<10	<1,00	10	0	TNTC (μcolonies)	TNTC (μcolonies)	TNTC	TNTC	10	0	TNTC (μcolonies)	TNTC (μcolonies)	TNTC	TNTC	3	b	
			100	0	0			100	0	TNTC (μcolonies)	TNTC (μcolonies)			100	0	TNTC (μcolonies)	TNTC (μcolonies)					
7912	Saumon fumé Ecosse	Smoked salmon	10	0	0	<10	<1,00	100	0	45	45	4500	3,65	100	0	32	32	3200	3,51	3	b	
			100	0	0			1000	0	12	12	N'	N'	1000	0	13	13	N'	N'			
7913	Saumon fumé sauvage	Smoked salmon	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	3	b	
			100	0	0			100	0	0	0			100	0	0	0					
7914	Emincés de saumon aneth citron	Smoked salmon seasoned	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	3	b	
			100	0	0			100	0	0	0			100	0	0	0					
2557	Truite fumée (stockage 8°C pendant 5 jours)	Smoked trout (after storage 5 days at 8°C)	10	49	49	530	2,72	10	43	14	57	580	2,76	10	39	16	55	560	2,75	3	b	
			100	9	9			100	5	1	6			100	6	0	6					
2558	Saumon fumé (stockage 8°C pendant 5 jours)	Smoked salmon (after storage 5 days at 8°C)	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	3	b	
			100	0	0			100	0	0	0			100	0	0	0					
2559	Harengs fumés (stockage 8°C pendant 5 jours)	Smoked herring (after storage 5 days at 8°C)	100	148	148	15000	4,18	100	0	132	132	13000	4,11	100	0	139	139	15000	4,18	3	b	
			1000	14	14			1000	0	38	38	N'	N'	1000	0	21	21					
2560	Harengs fumés (stockage 8°C pendant 5 jours)	Smoked herring (after storage 5 days at 8°C)	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	3	b	
			100	0	0			100	0	0	0			100	0	0	0					

SEAFOOD PRODUCTS																						
Sample No	Product (French name)	Product	Reference method NF ISO 15214					Alternative method: 3M Petrifilm Lactic Acid Bacteria Count Plate													Category	Type
			Dilution	cfu/plate	Confirmed cfu /plate	cfu/g	Log (cfu/g)	45h - 30°C±1°C						45h - 30°C±1°C and 1 week at -18°C								
								Dilution	Hetero-fermentative lactic acid bacteria (with gas)	Homo-fermentative lactic acid bacteria (without gas)	Total colonies	cfu/g	Log (cfu/g)	Dilution	Hetero-fermentative lactic acid bacteria (with gas)	Homo-fermentative lactic acid bacteria (without gas)	Total colonies	cfu/g	Log (cfu/g)			
									cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate				cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate					
2561	Truite fumée (stockage 8°C pendant 5 jours)	Smoked trout (after storage 5 days at 8°C)	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	3	b	
			100	0	0			100	0	0	0			100	0	0	0					
3768	Filets de harengs fumés doux	Smoked herring	10	123	123	1300	3,11	100	0	45	45	4500	3,65	100	0	45	45	4500	3,65	3	b	
			100	23	23			1000	0	4	4			1000	0	4	4					
3769	Lardons de saumon fumé	Smoked salmon	1000	34	34	35000	4,54	1000	0	33	33	31000	4,49	1000	0	33	33	31000	4,49	3	b	
			10000	4	4			10000	0	1	1			10000	0	1	1					
3770	Mini tranches de truite fumée	Smoked trout	1000	232	232	230000	5,36	10000	0	42	42	410000	5,61	10000	0	43	43	420000	5,62	3	b	
			10000	22	22			100000	0	3	3			100000	0	3	3					
7172	Anchois marinés ail persil	Marinated anchovies	1000	169	169	170000	5,23	10	5	170	175	1700	3,23	10	8	247	255	2500	3,40	3	c	
			10000	16	16			100	0	16	16			100	0	16	16					
7915	Harengs marinés	Pickled herrings	100	>300	>300	5000	3,70 N'	100	0	79	79	8300	3,92	100	0	79	79	8300	3,92	3	c	
			1000	286	5			1000	0	12	12			1000	0	12	12					
1275	Marinade de poulpes	Marinated octopus	10	13	13	160	2,20	10	5	0	5	50 Ne	1,70 Ne	10	4	1	5	50 Ne	1,70 Ne	3	c	
			100	4	4			100	1	0	1			100	1	1	2					
3522	Emincés saumon fumé marinés aneth citron	Marinated salmon	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	3	c	
			100	0	0			100	0	0	0			100	0	0	0					
3523	Harengs marinés aux aromates	Pickled herrings	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	3	c	
			100	0	0			100	0	0	0			100	0	0	0					
3806	Cubes de saumon mariné basilic	Marinated salmon	1000	45	45	43000	4,63	1000	0	55	55	55000	4,74	1000	0	50	50	51000	4,71	3	c	
			10000	2	2			10000	0	6	6			10000	0	6	6					
3807	Calamars marinés citron basilic	Marinated squid	100000	28	28	3200000	6,51	100000	0	66	66	6300000	6,80	100000	0	56	56	5400000	6,73	3	c	
			1000000	7	7			1000000	0	3	3			1000000	0	3	3					

TNTC : Too numerous to count

 Analyses performed according to the COFRAC accreditation

COMPOSITE FOODS (RTE, RTRE, RTH foods)																						
Sample No	Product (French name)	Product	Reference method NF ISO 15214					Alternative method: 3M Petrifilm Lactic Acid Bacteria Count Plate													Category	Type
			Dilution	cfu/plate	Confirmed cfu /plate	cfu/g	Log (cfu/g)	45h - 30°C±1°C					45h - 30°C±1°C and 1 week at -18°C									
								Dilution	Hetero-fermentative lactic acid bacteria (with gas)	Homo-fermentative lactic acid bacteria (without gas)	Total colonies	cfu/g	Log (cfu/g)	Dilution	Hetero-fermentative lactic acid bacteria (with gas)	Homo-fermentative lactic acid bacteria (without gas)	Total colonies	cfu/g	Log (cfu/g)			
cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate	Dilution	cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate	Dilution	cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate	Dilution	cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate								
7377	Mâche	Salad	10	3	3	30	1,30*	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	4	a	
			100	0	0			100	0	0	100			0	0	0						
2556	Jeunes pousses	Baby leaves	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	4	a	
			100	0	0			100	0	0	100			0	0	0						
3512	Carottes râpées nature	Grated carrots	10	172	172	1700	3,23	10	143	17	160	1600	3,20	10	133	27	160	1600	3,20	4	a	
			100	18	18			100	11	2	13			100	9	7	16					
3513	Mélange chou carotte nature	Vegetable mix	10	2	2	20	1,30*	10	2	0	2	20	1,30*	10	2	0	2	20	1,30*	4	a	
			100	0	0			100	0	0	100			0	0	0						
3514	Mélange chou rouge, betterave, carotte nature	Vegetable mix	10	5	5	50	1,70	10	2	0	2	20	1,30*	10	2	0	2	20	1,30*	4	a	
			100	0	0			100	1	0	1			100	1	0	1					
3795	Mélange de jeunes pousses	Baby leaves	10000	43	43	430000	5,63	10000	0	33	33	340000	5,53	10000	0	36	36	350000	5,54	4	a	
			10000	4	4			100000	0	4	4			100000	0	3	3					
3796	Tendres pouces	Baby leaves	100000	218	218	22000000	7,34	100000	0	178	178	18000000	7,26	100000	0	146	146	15000000	7,18	4	a	
			1000000	26	26			1000000	0	20	20			1000000	0	21	21					
3797	Roquette	Salad	10	440	440	4000 N'	3,60 N'	10	>300	>300	>300	3400	3,53 N'	10	0	>300	>300	3000 N'	3,48 N'	4	a	
			100	40	40			100	9	25	34			100	0	30	30					
3798	Mâche	Salad	100000	36	36	3600000 N'	6,56 N'	100000	0	32	32	3200000	6,51	100000	0	34	34	3400000	6,53	4	a	
			1000000	13	13			1000000	0	3	3			1000000	0	3	3					
3874	Pousse mungo	Mungo leaves	100000	>300	>300	94000000 N'	7,97 N'	100000	>300	0	>300	77000000	7,89 N'	100000	>300	>300	>300	74000000 N'	7,87 N'	4	a	
			1000000	94	94			1000000	77	0	77			1000000	56	18	74					
7170	Céleri remoulade	Deli salad	100	176	176	18000	4,26	100	1	86	87	9100	3,96	100	3	84	87	9200	3,96	4	b	
			1000	23	23			1000	1	12	13			1000	2	12	14					
7374	Macédoine	Deli salad (mixed vegetables)	10	27	27	280	2,45	10	0	14	14	160	2,20	10	0	14	14	160	2,20	4	b	
			100	4	4			100	0	4	4			100	0	4	4					
7375	Coleslaw	Deli salad (carrot, cabbage)	100	41	41	4100	3,61	10	134	19	153	1500	3,18	10	79	88	167	1700	3,23	4	b	
			1000	4	4			100	8	8	16			100	4	12	16					
7376	Carottes salade	Deli salad (carrot)	100	53	53	5800	3,76	100	40	21	61	6200	3,79	100	28	33	61	6400	3,81	4	b	
			1000	11	11			1000	4	3	7			1000	5	4	9					
7916	Légumes fermentés (poivron-oignon-céleri)	Fermented vegetables	100000	179	179	18000000	7,26	1000	0	40	40	37000	4,57	1000	0	40	40	37000	4,57	4	b	
			1000000	18	18			10000	0	1	1			10000	0	1	1					
7917	Légumes fermentés (carottes cumin)	Fermented vegetables	100000	226	226	22600000	7,35 N'	1000000	29	13	42	41000000	7,61	1000000	29	12	41	40000000	7,60	4	b	
			1000000	44	44			10000000	3	0	3			10000000	3	0	3					
7918	Légumes fermentés (choux fleur coriandre)	Fermented vegetables	100000	230	230	24000000	7,38	100000	164	42	206	21000000	7,32	100000	151	52	203	21000000	7,32	4	b	
			1000000	30	30			1000000	9	15	24			1000000	9	15	24					
7143	Quiche Lorraine	Quiche	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	4	c	
			100	0	0			100	0	0	100			0	0	0						
1276	Rouleau de printemps aux crevettes	Asian ready to eat	10000	114	114	1100000	6,04	10000	59	5	64	650000	5,81	10000	50	12	62	630000	5,80	4	c	
			100000	9	9			100000	7	0	7			100000	7	0	7					

COMPOSITE FOODS (RTE, RTRE, RTH foods)

Sample No	Product (French name)	Product	Reference method NF ISO 15214					Alternative method: 3M Petrifilm Lactic Acid Bacteria Count Plate											Category	Type	
			Dilution	cfu/plate	Confirmed cfu /plate	cfu/g	Log (cfu/g)	45h - 30°C±1°C					45h - 30°C±1°C and 1 week at -18°C								
								Dilution	Hetero-fermentative lactic acid bacteria (with gas)	Homo-fermentative lactic acid bacteria (without gas)	Total colonies	cfu/g	Log (cfu/g)	Dilution	Hetero-fermentative lactic acid bacteria (with gas)	Homo-fermentative lactic acid bacteria (without gas)	Total colonies	cfu/g			Log (cfu/g)
									cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate				cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate				
3799	Pizza jambon fromage	Pizza	10000	97	97	1000000	6,00	10000	0	136	136	1300000	6,11	10000	0	117	117	1100000	6,04	4	c
			100000	16	16			100000	0	6	6			100000	0	6	6				
3800	Quiche saumon brocolis	Quiche	1000	142	142	140000	5,15	10000	8	3	11	120000	5,08	10000	8	3	11	110000	5,04	4	c
			10000	7	7			100000	1	1	2			100000	1	0	1				
3875	Sandwich jambon emmental	Sandwich	10000	243	243	2500000	6,40	100000	0	33	33	3400000	6,53	100000	0	30	30	3100000	6,49	4	c
			100000	33	33			100000	0	4	4			1000000	0	4	4				
3876	Sandwich rosette	Sandwich	100000	45	45	4300000	6,63	10000	0	137	137	1500000	6,18	10000	0	113	113	1200000	6,08	4	c
			1000000	2	2			100000	0	23	23			100000	0	22	22				

TNTC : Too numerous to count

Analyses performed according to the COFRAC accreditation

MEAL COMPONENTS																						
Sample No	Product (French name)	Product	Reference method NF ISO 15214					Alternative method: 3M Petrifilm Lactic Acid Bacteria Count Plate													Category	Type
			Dilution	cfu/plate	Confirmed cfu /plate	cfu/g	Log (cfu/g)	45h - 30°C±1°C						45h - 30°C±1°C and 1 week at -18°C								
								Dilution	Hetero-fermentative lactic acid bacteria (with gas) cfu/Petrifilm plate	Homo-fermentative lactic acid bacteria (without gas) cfu/Petrifilm plate	Total colonies cfu/Petrifilm plate	cfu/g	Log (cfu/g)	Dilution	Hetero-fermentative lactic acid bacteria (with gas) cfu/Petrifilm plate	Homo-fermentative lactic acid bacteria (without gas) cfu/Petrifilm plate	Total colonies cfu/Petrifilm plate	cfu/g	Log (cfu/g)			
3801	Sauce hollandaise au poivre mignonnette	Dressing	10	67	67	710	2,85	100	12	2	14	1400	3,15	100	8	4	12	1200	3,08	5	a	
			100	11	11			1000	0	1	1			1000	1	0	1					
3803	Mayonnaise	Mayonnaise	1000	111	111	110000	5,04	1000	0	138	138	130000	5,11	1000	0	116	116	110000	5,04	5	a	
			10000	11	11			10000	0	10	10			10000	0	6	6					
3804	Œuf entier liquide pasteurisé	Liquid egg	10000	97	97	1000000	6,00	10000	0	88	88	880000	5,94	10000	0	72	72	730000	5,86	5	a	
			100000	14	14			100000	0	9	9			100000	0	8	8					
3805	Sauce armoricaine au cognac	Dressing	100000	162	162	17000000	7,23	1000000	0	24	24	25000000	7,40	1000000	0	19	19	19000000	7,28	5	a	
			1000000	26	26			10000000	0	3	3			10000000	0	2	2					
4209	Sauce beurre citron	Dressing (butter, lemon)	1000	20	20	19000	4,28	1000	12	8	20	19000	4,28	1000	14	6	20	19000	4,28	5	a	
			10000	1	1			10000	1	0	1			10000	1	0	1					
7140	Pâte brisée	Short crust pastry	10	55	55	550	2,74	10	5	30	35	360	2,56	10	3	32	35	360	2,56	5	b	
			100	5	5			100	1	4	5			100	1	4	5					
7171	Pâte feuilletée	Raw puff pastry	10	17	17	160	2,20	10	0	10	10	90	1,95	10	3	8	11	100	2,00	5	b	
			100	0	0			100	0	0	0			100	0	0	0					
3877	Tagliatelles fraîches aux œufs	Raw pasta	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	5	b	
			100	0	0			100	0	0	0			100	0	0	0					
3878	Roulé jambon fromage à cuire	Ready to bake product	100000	37	37	3600000	6,56	100000	0	32	32	3000000	6,48	100000	0	32	32	3000000	6,48	5	b	
			1000000	3	3			1000000	0	1	1			1000000	0	1	1					
3879	Feuilletés jambon fromage à cuire	Ready to bake product	100	54	54	5200	3,72	100	48	3	51	5600	3,75	100	35	13	48	5500	3,74	5	b	
			1000	3	3			1000	10	1	11			1000	9	3	12					
4071	Gnocchi semoule de blé dur	Gnocchi	1000	144	144	140000	5,15	1000	0	173	173	170000	5,23	1000	0	170	170	170000	5,23	5	b	
			10000	11	11			10000	0	18	18			10000	0	18	18					
7378	Dessert Tutti Fruti	Fruit dessert	10	173	173	1700	3,23	10	31	55	86	920	2,96	10	32	76	108	1100	3,04	5	c	
			100	14	14			100	5	10	15			100	4	11	15					
3808	Tartelette fraise	Pastry with strawberries	100000	3	3	300000	5,48*	100000	0	2	2	200000	5,30*	100000	0	1	1	100000	5,00*	5	c	
			1000000	0	0			1000000	0	0	0			1000000	0	0	0					
3809	Choux crème pâtissière	Pastry (cream)	10000	2	2	20000	4,30*	10000	0	0	0	<10000	<4,00	10000	0	0	0	<10000	<4,00	5	c	
			100000	0	0			100000	0	0	0			100000	0	0	0					
3810	Eclair chocolat	Chocolate éclair	1000	7	7	7000 Ne	3,85 Ne	1000	0	0	0	<1000	<3,00	1000	0	0	0	<1000	<3,00	5	c	
			10000	0	0			10000	0	0	0			10000	0	0	0					
3811	Millefeuilles framboises	Pastry with raspberries	100	130	42	4800	3,68	100	7	44	51	5100	3,71	100	5	50	55	5500	3,74	5	c	
			1000	30	11			1000	0	5	5			1000	0	6	6					
4072	Chou chantilly fraises	Pastry	1000	220	220	220000	5,34	10000	0	29	29	290000	5,46	10000	0	28	28	280000	5,45	5	c	
			10000	17	17			10000	0	3	3			10000	0	3	3					
4073	Far aux pruneaux	Pastry	10000	111	111	1100000	6,04	10000	0	90	90	980000	5,99	10000	0	86	86	940000	5,97	5	c	
			100000	15	15			100000	0	18	18			100000	0	17	17					
4074	Quatre quart	Pastry	1000	122	122	120000	5,08	1000	0	106	106	110000	5,04	1000	0	105	105	110000	5,04	5	c	
			10000	15	15			10000	0	13	13			10000	0	13	13					

TNTC : Too numerous to count

Analyses performed according to the COFRAC accreditation

ENVIRONMENTAL SAMPLES																						
Sample No	Product (French name)	Product	Reference method NF ISO 15214*					Alternative method: 3M Petrifilm Lactic Acid Bacteria Count Plate													Category	Type
			Dilution	cfu/plate	Confirmed cfu /plate	cfu/g	Log (cfu/g)	45h - 30°C±1°C					45h - 30°C±1°C and 1 week at -18°C									
								Dilution	Hetero-fermentative lactic acid bacteria (with gas)	Homo-fermentative lactic acid bacteria (without gas)	Total colonies	cfu/g	Log (cfu/g)	Dilution	Hetero-fermentative lactic acid bacteria (with gas)	Homo-fermentative lactic acid bacteria (without gas)	Total colonies	cfu/g	Log (cfu/g)			
cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate	Dilution	cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate																
2594	Eponge cours de process (atelier salaison)	Sponge collected during process	10	21	21	190	2,28	10	15	24	39	390	2,59	10	15	23	38	380	2,58	6	a	
			100	0	0			100	1	3	4			100	1	3	4					
2595	Ecouvillon cours de process (atelier salaison)	Swab collected during process	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	6	a	
			100	0	0			100	0	0	0			100	0	0	0					
2596	Eponge cours de process (atelier salaison)	Sponge collected during process	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	6	a	
			100	0	0			100	0	0	0			100	0	0	0					
2597	Ecouvillon cours de process (atelier salaison)	Swab collected during process	10	5	5	50	1,70	10	1	29	30	290	2,46	10	1	32	33	320	2,51	6	a	
			100	0	0			Ne	100	0	2			2	100	0	2					2
3787	Eponge cours de process (atelier salaison)	Sponge collected during process	100000	167	167	17000000	7,23	1000000	11	0	11	14000000	7,15	1000000	9	1	10	14000000	7,15	6	a	
			1000000	21	21			10000000	4	0	4			10000000	0	5	5					
3790	Ecouvillon cours de process (atelier poisson fumé)	Swab collected during process	1000000	90	90	89000000	7,95	1000000	0	49	49	46000000	7,66	1000000	0	46	46	44000000	7,64	6	a	
			1000000	8	8			10000000	0	2	2			10000000	0	2	2					
3791	Ecouvillon cours de process (atelier poisson fumé)	Swab collected during process	10	108	108	1000	3,00	10	0	104	104	1000	3,00	10	0	83	83	800	2,90	6	a	
			100	6	6			100	0	6	6			100	0	5	5					
3867	Eponge cours de process (atelier salaison)	Sponge collected during process	10	1	1	10	1,00*	10	4	0	4	40	1,60	10	4	0	4	40	1,60	6	a	
			100	0	0			100	0	0	0			100	0	0	0					Ne
3868	Ecouvillon cours de process (atelier salaison)	Swab collected during process	10	0	0	<10	<1,00	10	1	1	2	20	1,30*	10	1	1	2	20	1,30*	6	a	
			100	0	0			100	0	0	0			100	0	0	0					
3873	Eponge cours de process (atelier salaison)	Sponge collected during process	10	0	0	<10	<1,00	10	0	1	1	10	1,00*	10	0	0	0	<10	<1,00	6	a	
			100	0	0			100	0	0	0			100	0	0	0					
4080	Ecouvillon poussoir après désinfection (atelier végétaux)	Swab after cleaning process (vegetables industry)	10	268	268	2700	3,43	100	0	277	277	27000	4,43	100	0	282	282	27000	4,43	6	a	
			100	49	49			N'	1000	0	18			18	1000	0	19					19
2598	Eau de rinçage cours de process (atelier salaison)	Process water	1	0	0	<1	<0,00	1	0	0	0	<1	<0,00	1	0	1	1	1	0,00*	6	b	
			10	0	0			10	0	0	0			10	0	0	0					
3785	Eau de process (atelier salaison)	Process water	1000	38	38	35000	4,54	1000	0	44	44	44000	4,64	1000	0	41	41	41000	4,61	6	b	
			10000	1	1			10000	0	4	4			10000	0	4	4					
3786	Eau de process (atelier salaison)	Process water	100000	41	41	3900000	6,59	100000	0	59	59	5500000	6,74	100000	0	53	53	4900000	6,69	6	b	
			1000000	2	2			1000000	0	1	1			1000000	0	1	1					

* Analyses performed according to the COFRAC accreditation

ADRIA Développement

Summary report (Version 0)

3M Petrifilm Lactic Acid Bacteria Count Plate

ENVIRONMENTAL SAMPLES																						
Sample No	Product (French name)	Product	Reference method NF ISO 15214*					Alternative method: 3M Petrifilm Lactic Acid Bacteria Count Plate													Category	Type
			Dilution	cfu/plate	Confirmed cfu /plate	cfu/g	Log (cfu/g)	45h - 30°C±1°C					45h - 30°C±1°C and 1 week at -18°C									
								Dilution	Hetero-fermentative lactic acid bacteria (with gas)	Homo-fermentative lactic acid bacteria (without gas)	Total colonies	cfu/g	Log (cfu/g)	Dilution	Hetero-fermentative lactic acid bacteria (with gas)	Homo-fermentative lactic acid bacteria (without gas)	Total colonies	cfu/g	Log (cfu/g)			
cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/g	Log (cfu/g)	cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/Petrifilm plate	cfu/g	Log (cfu/g)												
3788	Eau de process (atelier poisson fumé)	Process water	100	0	0	<100	<2,00	100	0	0	0	<100	<2,00	100	0	0	0	<100	<2,00	6	b	
			1000	0	0			1000	0	0	0			1000	0	0	0					
3789	Eau de process (atelier poisson fumé)	Process water	10	333	333	3300	3,52	100	0	31	31	3300	3,52	100	0	29	29	3100	3,49	6	b	
			100	28	28			1000	0	5	5			1000	0	5	5					
3866	Eau de process (atelier salaison)	Process water	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	6	b	
			100	0	0			100	0	0	0			100	0	0	0					
3872	Eau de siphon lave main (atelier poisson fumé)	Process water	10	0	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	6	b	
			100	0	0			100	0	0	0			100	0	0	0					
4075	Eau de rinçage après désinfection (atelier poisson fumé)	Rinse water after cleaning process (smoked fish industry)	10	166	166	1700	3,23	100	0	44	44	4300	3,63	100	0	46	46	4500	3,65	6	b	
			100	20	20			1000	0	3	3			1000	0	3	3					
4076	Eau de rinçage avant nettoyage (atelier végétaux)	Rinse water before cleaning process (vegetables industry)	100	103	103	10000	4,00	1000	36	0	36	35000	4,54	1000	40	0	40	38000	4,58	6	b	
			1000	22	22	N'	N'	10000	2	0	2			10000	2	0	2					
4077	Eau de rinçage avant nettoyage (atelier végétaux)	Rinse water before cleaning process (vegetables industry)	10	38	38	360	2,56	10	83	0	83	840	2,92	10	90	0	90	900	2,95	6	b	
			100	1	1			100	9	0	9			100	9	0	9					
3792	Déchets de sol (atelier poisson fumé)	Wastes	100	91	91	9100	3,96	100	0	85	85	7900	3,90	100	0	74	74	6800	3,83	6	c	
			1000	9	9			1000	0	2	2			1000	0	1	1					
3793	Déchets de sol (atelier poisson fumé)	Wastes	1000	120	120	120000	5,08	1000	0	96	96	90000	4,95	1000	0	74	74	70000	4,85	6	c	
			10000	12	12			10000	0	3	3			10000	0	3	3					
3794	Déchets de sol (atelier poisson fumé)	Wastes	10000	82	82	850000	5,93	10000	0	69	69	650000	5,81	10000	0	61	61	580000	5,76	6	c	
			100000	12	12			100000	0	3	3			100000	0	3	3					
3869	Déchets de sol sans épices (atelier poisson fumé)	Wastes	10	1	0	<10	<1,00	10	0	0	0	<10	<1,00	10	0	0	0	<10	<1,00	6	c	
			100	0	0			100	0	0	0			100	0	0	0					
3870	Déchets de sol avec épices (atelier poisson fumé)	Wastes	10	0	0	<10	<1,00	10	0	1	1	10	1,00*	10	0	0	0	<10	<1,00	6	c	
			100	0	0			100	0	0	0			100	0	0	0					
3871	Déchets de sol (atelier poisson fumé)	Wastes	10	1	1	10	1,00*	10	0	TNTC	TNTC	<100	<2,00	10	0	5+TNTC	TNTC	<100	<2,00	6	c	
			100	1	/			100	0	0	0			100	0	0	0					
4078	Déchets saucisses végétales	Veggie sausages wastes	10	394	394	4000	3,60	100	34	9	43	4500	3,65	100	30	15	45	4700	3,67	6	c	
			100	49	49			1000	6	0	6			1000	7	0	7					
4079	Déchets saucisses végétales	Veggie sausages wastes	1000	46	46	46000	4,66	1000	34	21	55	55000	4,74	1000	29	25	54	55000	4,74	6	c	
			10000	5	5			10000	1	5	6			10000	1	5	6					

Appendix 5 - Relative trueness study: summarized results and calculations

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

Category	Type	N°sample	Incubation : 45h									
			Log cfu/g		Average	Difference	Alternative method		Average <4 CFU/plate	Difference <4 CFU/plate	Average corrected values	Difference Corrected values
			Reference method	Alternative method			<4 CFU/plate	<or> threshold corrected values				
1	a	7175	6,41	6,59	6,50	0,18			#N/A		#N/A	
1	a	7228	0,00		#N/A			0,00	#N/A		0,00	0,00
1	a	1271	0,00		#N/A			0,00	#N/A		0,00	0,00
1	a	1274	2,08	2,15	2,11	0,07			#N/A		#N/A	
1	a	3516	0,00		#N/A			0,00	#N/A		0,00	0,00
1	a	3517	0,00		#N/A			0,00	#N/A		0,00	0,00
1	a	3518	0,00		#N/A			0,00	#N/A		0,00	0,00
1	a	3519	1,30		#N/A		1,48		1,39	0,18	#N/A	
1	a	3755	3,54	4,28	3,91	0,73			#N/A		#N/A	
1	a	3756	2,00	3,26	2,63	1,26			#N/A		#N/A	
1	a	4069	4,40	4,46	4,43	0,06			#N/A		#N/A	
1	b	7372	7,41	6,92	7,17	-0,50			#N/A		#N/A	
1	b	7463	6,41	6,28	6,35	-0,14			#N/A		#N/A	
1	b	7464	6,23	5,80	6,01	-0,43			#N/A		#N/A	
1	b	7465	4,41	4,15	4,28	-0,27			#N/A		#N/A	
1	b	3521	4,95	5,64	5,30	0,69			#N/A		#N/A	
1	b	3757	6,98	7,08	7,03	0,10			#N/A		#N/A	
1	c	7173	5,66	5,64	5,65	-0,02			#N/A		#N/A	
1	c	7174	5,15	4,99	5,07	-0,16			#N/A		#N/A	
1	c	3520	2,59	2,95	2,77	0,36			#N/A		#N/A	
1	c	3771	4,83	4,97	4,90	0,14			#N/A		#N/A	
1	c	3772	7,04	7,08	7,06	0,04			#N/A		#N/A	
Average category 1						0,13						
Standard deviation of differences category 1						0,45						
2	a	7144	6,38	5,96	6,17	-0,42			#N/A		#N/A	
2	a	7145	7,38	7,23	7,31	-0,15			#N/A		#N/A	
2	a	3524	7,92	8,32	8,12	0,40			#N/A		#N/A	
2	a	3525	4,60	4,43	4,52	-0,17			#N/A		#N/A	
2	a	3526	6,72	7,58	7,15	0,86			#N/A		#N/A	
2	b	7226	0,00		#N/A			0,00	#N/A		0,00	0,00
2	b	7227	0,00		#N/A			0,00	#N/A		0,00	0,00
2	b	3758	6,48		#N/A			6,48	#N/A		6,48	0,00
2	b	3759	1,95	1,90	1,93	-0,05			#N/A		#N/A	
2	b	3760	3,00	3,43	3,22	0,43			#N/A		#N/A	
2	b	3761	5,81	5,96	5,88	0,15			#N/A		#N/A	
2	b	3762	5,08	5,04	5,06	-0,04			#N/A		#N/A	
2	b	3990	5,78	6,04	5,91	0,26			#N/A		#N/A	
2	b	4070	3,89	3,84	3,86	-0,05			#N/A		#N/A	
2	c	7230	5,45	3,96	4,70	-1,49			#N/A		#N/A	
2	c	7373	6,04	5,89	5,97	-0,15			#N/A		#N/A	
2	c	7468	6,60	6,60	6,60	0,00			#N/A		#N/A	
2	c	2554	8,00	8,00	8,00	0,00			#N/A		#N/A	
2	c	2555	5,70	5,38	5,54	-0,32			#N/A		#N/A	
Average category 2						-0,05						
Standard deviation of differences category 2						0,50						
3	a	7141	0,00		#N/A			0,00	#N/A		0,00	0,00
3	a	7229	0,00		#N/A			0,00	#N/A		0,00	0,00
3	a	1272	1,00		#N/A	0,60	1,60		1,30	0,60	#N/A	
3	a	1273	1,00		#N/A		1,00		1,00	0,00	#N/A	
3	a	3763	2,23	2,67	2,45	0,44			#N/A		#N/A	
3	a	3764	5,34	5,51	5,42	0,16			#N/A		#N/A	
3	a	3765	3,74	3,65	3,70	-0,09			#N/A		#N/A	
3	a	3766	4,71	4,60	4,65	-0,11			#N/A		#N/A	
3	a	3767	5,23	5,63	5,43	0,40			#N/A		#N/A	
3	b	7142	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	7466	0,00		#N/A		1,00		0,50	1,00	#N/A	
3	b	7912	0,00		#N/A			3,65	#N/A		1,83	3,65
3	b	7913	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	7914	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	2557	2,72	2,76	2,74	0,04			#N/A		#N/A	
3	b	2558	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	2559	4,18	4,11	4,15	-0,06			#N/A		#N/A	
3	b	2560	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	2561	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	3768	3,11	3,65	3,38	0,54			#N/A		#N/A	
3	b	3769	4,54	4,49	4,52	-0,05			#N/A		#N/A	
3	b	3770	5,36	5,61	5,49	0,25			#N/A		#N/A	
3	c	7172	5,23	3,23	4,23	-2,00			#N/A		#N/A	
3	c	7915	3,70	3,92	3,81	0,22			#N/A		#N/A	
3	c	1275	2,20	1,70	1,95	-0,51			#N/A		#N/A	
3	c	3522	0,00		#N/A			0,00	#N/A		0,00	0,00
3	c	3523	0,00		#N/A			0,00	#N/A		0,00	0,00
3	c	3806	4,63	4,74	4,69	0,11			#N/A		#N/A	
3	c	3807	6,51	6,80	6,65	0,29			#N/A		#N/A	
Average category 3						0,02						
Standard deviation of differences category 3						0,61						

Category	Type	N°sample	Incubation : 45h + 1 week at - 18°C									
			Log cfu/g		Average	Difference	Alternative method		Average <4 CFU/plate	Difference <4 CFU/plate	Average corrected values	Difference Corrected values
			Reference method	Alternative method			<4 CFU/plate	<or> threshold corrected values				
1	a	7175	6,41	6,66	6,54	0,25			#N/A		#N/A	
1	a	7228	0,00		#N/A			0,00	#N/A		0,00	0,00
1	a	1271	0,00		#N/A			0,00	#N/A		0,00	0,00
1	a	1274	2,08	2,11	2,10	0,03			#N/A		#N/A	
1	a	3516	0,00		#N/A			0,00	#N/A		0,00	0,00
1	a	3517	0,00		#N/A			0,00	#N/A		0,00	0,00
1	a	3518	0,00		#N/A			0,00	#N/A		0,00	0,00
1	a	3519	1,30		#N/A		1,48		1,39	0,18	#N/A	
1	a	3755	3,54	4,28	3,91	0,73			#N/A		#N/A	
1	a	3756	2,00	3,23	2,62	1,23			#N/A		#N/A	
1	a	4069	4,40	4,46	4,43	0,06			#N/A		#N/A	
1	b	7372	7,41	6,92	7,17	-0,50			#N/A		#N/A	
1	b	7463	6,41	6,31	6,36	-0,10			#N/A		#N/A	
1	b	7464	6,23	5,81	6,02	-0,42			#N/A		#N/A	
1	b	7465	4,41	4,18	4,30	-0,24			#N/A		#N/A	
1	b	3521	4,95	5,66	5,31	0,71			#N/A		#N/A	
1	b	3757	6,98	7,08	7,03	0,10			#N/A		#N/A	
1	c	7173	5,66	5,78	5,72	0,12			#N/A		#N/A	
1	c	7174	5,15	5,04	5,09	-0,10			#N/A		#N/A	
1	c	3520	2,59	2,95	2,77	0,36			#N/A		#N/A	
1	c	3771	4,83	4,94	4,88	0,11			#N/A		#N/A	
1	c	3772	7,04	7,08	7,06	0,04			#N/A		#N/A	
Average category 1						0,15						
Standard deviation of differences category 1						0,44						
2	a	7144	6,38	6,00	6,19	-0,38			#N/A		#N/A	
2	a	7145	7,38	7,26	7,32	-0,12			#N/A		#N/A	
2	a	3524	7,92	8,38	8,15	0,46			#N/A		#N/A	
2	a	3525	4,60	4,36	4,48	-0,24			#N/A		#N/A	
2	a	3526	6,72	7,46	7,09	0,75			#N/A		#N/A	
2	b	7226	0,00		#N/A			0,00	#N/A		0,00	0,00
2	b	7227	0,00		#N/A			0,00	#N/A		0,00	0,00
2	b	3758	6,48		#N/A			6,48	#N/A		6,48	0,00
2	b	3759	1,95	1,90	1,93	-0,05			#N/A		#N/A	
2	b	3760	3,00	3,43	3,22	0,43			#N/A		#N/A	
2	b	3761	5,81	5,97	5,89	0,17			#N/A		#N/A	
2	b	3762	5,08	5,04	5,06	-0,04			#N/A		#N/A	
2	b	3990	5,78	5,99	5,88	0,21			#N/A		#N/A	
2	b	4070	3,89	3,81	3,85	-0,08			#N/A		#N/A	
2	c	7230	5,45	3,96	4,70	-1,49			#N/A		#N/A	
2	c	7373	6,04	5,91	5,97	-0,13			#N/A		#N/A	
2	c	7468	6,60	6,63	6,62	0,03			#N/A		#N/A	
2	c	2554	8,00	8,00	8,00	0,00			#N/A		#N/A	
2	c	2555	5,70	5,38	5,54	-0,32			#N/A		#N/A	
Average category 2						-0,05						
Standard deviation of differences category 2						0,49						
3	a	7141	0,00		#N/A			0,00	#N/A		0,00	0,00
3	a	7229	0,00		#N/A			0,00	#N/A		0,00	0,00
3	a	1272	1,00		#N/A	0,60	1,60		1,30	0,60	#N/A	
3	a	1273	1,00		#N/A		1,00		1,00	0,00	#N/A	
3	a	3763	2,23	2,67	2,45	0,44			#N/A		#N/A	
3	a	3764	5,34	5,51	5,42	0,16			#N/A		#N/A	
3	a	3765	3,74	3,65	3,70	-0,09			#N/A		#N/A	
3	a	3766	4,71	4,60	4,65	-0,11			#N/A		#N/A	
3	a	3767	5,23	5,63	5,43	0,40			#N/A		#N/A	
3	b	7142	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	7466	0,00		#N/A		1,00		0,50	1,00	#N/A	
3	b	7912	0,00		#N/A			3,51	#N/A		1,75	3,51
3	b	7913	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	7914	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	2557	2,72	2,75	2,74	0,02			#N/A		#N/A	
3	b	2558	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	2559	4,18	4,18	4,18	0,00			#N/A		#N/A	
3	b	2560	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	2561	0,00		#N/A			0,00	#N/A		0,00	0,00
3	b	3768	3,11	3,65	3,38	0,54			#N/A		#N/A	
3	b	3769	4,54	4,49	4,52	-0,05			#N/A		#N/A	
3	b	3770	5,36	5,62	5,49	0,26			#N/A		#N/A	
3	c	7172	5,23	3,40	4,31	-1,83			#N/A		#N/A	
3	c	7915	3,70	3,92	3,81	0,22			#N/A		#N/A	
3	c	1275	2,20	1,70	1,95	-0,51			#N/A		#N/A	
3	c	3522	0,00		#N/A			0,00	#N/A		0,00	0,00
3	c	3523	0,00		#N/A			0,00	#N/A		0,00	0,00
3	c	3806	4,63	4,71	4,67	0,07			#N/A		#N/A	
3	c	3807	6,51	6,73	6,62	0,23			#N/A		#N/A	
Average category 3						0,02						
Standard deviation of differences category 3						0,57						

Appendix 6 - Accuracy profile study: raw data

Matrix	Strain	Target inoculation level(cfu/g)	N° sample	Reference method NF ISO 15214♦				3M Petrifilm Lactic Acid Bacteria Count Plate			
				45h - 30°C±1°C							
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/ Petrifilm plate	cfu/g	log cfu/g
Pâté batch n°1 Aerobic mesophilic flora: 1,2. 10 ⁴ CFU/g	Lactobacillus sakei Ad404	300	301	10	69	670	2,83	10	67	670	2,83
				100	5			100	7		
			302	10	31	360	2,56	10	41	400	2,60
				100	9			100	3		
			303	10	93	970	2,99	10	85	880	2,94
				100	14			100	12		
		304	10	33	350	2,54	10	40	400	2,60	
			100	5			100	4			
		305	10	115	1200	3,08	10	89	890	2,95	
			100	18			100	19			N'
		10000	306	100	24	2500	3,40	100	39	3700	3,57
				1000	4			1000	2		
			307	100	31	3400	3,53	100	46	4900	3,69
				1000	6			1000	8		
			308	100	39	4300	3,63	100	38	3700	3,57
				1000	8			1000	3		
		309	100	40	3700	3,57	100	47	4600	3,66	
			1000	1			1000	4			
		310	100	50	4700	3,67	100	34	3200	3,51	
			1000	2			1000	1			
		1000000	311	10000	36	340000	5,53	10000	34	330000	5,52
				100000	1			100000	2		
			312	10000	35	350000	5,54	10000	37	360000	5,56
				100000	4			1000000	3		
			313	10000	38	390000	5,59	10000	19	190000	5,28
				100000	5			100000	2		
		314	10000	41	410000	5,61	10000	18	170000	5,23	
			100000	4			100000	1			
		315	10000	33	310000	5,49	10000	26	250000	5,40	
			100000	1			100000	1			
Pâté batch n°2 Aerobic mesophilic flora: 1,4. 10 ⁴ CFU/g	Lactobacillus sakei Ad404	300	451	10	140	1400	3,15	10	161	1600	3,20
				100	30			N'	11		
			452	10	162	1700	3,23	10	141	1400	3,15
				100	27			100	17		
			453	10	147	1500	3,18	10	177	1700	3,23
				100	15			100	14		
		454	10	111	1100	3,04	10	127	1300	3,11	
			100	13			100	12			
		455	10	203	2000	3,30	10	179	1800	3,26	
			100	40			N'	22			
		10000	456	100	188	19000	4,28	100	76	7700	3,89
				1000	25			1000	9		
			457	100	141	14000	4,15	100	74	7500	3,88
				1000	12			1000	9		
			458	100	190	19000	4,28	100	85	8400	3,92
				1000	23			1000	7		
		459	100	96	9500	3,98	100	64	6500	3,81	
			1000	8			1000	8			
		460	100	76	8000	3,90	100	65	6400	3,81	
			1000	12			1000	5			
		1000000	461	10000	204	2000000	6,30	10000	80	780000	5,89
				100000	11			100000	6		
			462	10000	193	1900000	6,28	10000	56	560000	5,75
				100000	6			N'	6		
463	10000		125	1200000	6,08	10000	67	630000	5,80		
	100000		8			100000	2				
464	10000	166	1600000	6,20	10000	49	470000	5,67			
	100000	14			100000	3					
465	10000	136	1300000	6,11	10000	64	630000	5,80			
	100000	7			100000	5					

♦ Analyses performed according to the COFRAC accreditation

Matrix	Strain	Target inoculation level(cfu/g)	N° sample	Reference method NF ISO 15214 ♦				3M Petrifilm Lactic Acid Bacteria Count Plate			
								45h - 30°C±1°C			
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm plate	cfu/g	log cfu/g
Panna cotta batch n°1 Aerobic mesophilic flora: <10 CFU/g	<i>Lactococcus lactis subsp lactis</i> Ad125	300	661	10	28	330	2,52	10	39	430	2,63
				100	8			100	8		
			662	10	39	390	2,59	10	34	350	2,54
				100	13			100	4		
			663	10	31	350	2,54	10	50	500	2,70
				100	7			100	5		
		664	10	41	420	2,62	10	41	420	2,62	
			100	5			100	5			
		665	10	41	420	2,62	10	43	430	2,63	
			100	5			100	4			
		10000	666	100	200	19000	4,28	100	122	12000	4,08
				1000	6			1000	8		
			667	100	270	27000	4,43	100	116	12000	4,08
				1000	22			1000	16		
			668	100	220	22000	4,34	100	151	14000	4,15
				1000	27			1000	5		
		669	100	243	25000	4,40	100	145	14000	4,15	
			1000	29			1000	11			
		670	100	215	21000	4,32	100	133	13000	4,11	
			1000	18			1000	11			
		1000000	671	10000	296	2900000	6,46	10000	128	1300000	6,11
				100000	25			100000	19		
			672	10000	235	2300000	6,36	10000	136	1300000	6,11
				100000	14			100000	10		
			673	10000	244	2400000	6,38	10000	116	1200000	6,08
				100000	20			100000	11		
		674	10000	297	2900000	6,46	10000	173	1700000	6,23	
100000	20		100000	11							
675	10000	233	2300000	6,36	10000	184	1800000	6,26			
	100000	24			100000	9					
Panna cotta batch n°2 Aerobic mesophilic flora: <10 CFU/g	<i>Lactococcus lactis subsp lactis</i> Ad125	300	676	10	44	460	2,66	10	33	320	2,51
				100	6			100	2		
			677	10	42	420	2,62	10	44	450	2,65
				100	4			100	5		
			678	10	36	360	2,56	10	32	360	2,56
				100	3			100	7		
		679	10	48	460	2,66	10	48	480	2,68	
			100	3			100	5			
		680	10	45	460	2,66	10	49	460	2,66	
			100	5			100	2			
		10000	681	100	191	19000	4,28	100	138	14000	4,15
				1000	19			1000	13		
			682	100	183	18000	4,26	100	157	15000	4,18
				1000	20			1000	13		
			683	100	204	21000	4,32	100	152	15000	4,18
				1000	28			1000	14		
		684	100	214	22000	4,34	100	110	11000	4,04	
			1000	23			1000	16			
685	100	268	27000	4,43	100	190	19000	4,28			
	1000	29			1000	17					
1000000	686	10000	240	2300000	6,36	10000	160	1600000	6,20		
		100000	12			100000	11				
	687	10000	185	1900000	6,28	10000	120	1200000	6,08		
		100000	26			100000	13				
	688	10000	268	2600000	6,41	10000	136	1400000	6,15		
		100000	17			100000	14				
689	10000	291	2900000	6,46	10000	132	1300000	6,11			
	100000	23			100000	12					
690	10000	215	2300000	6,36	10000	117	1200000	6,08			
	100000	34			100000	11					

♦ Analyses performed according to the COFRAC accreditation

Matrix	Strain	Target inoculation level (cfu/g)	N° sample	Reference method NF ISO 15214♦				3M Petrifilm Lactic Acid Bacteria Count Plate			
				45h - 30°C±1°C							
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm plate	cfu/g	log cfu/g
Fish terrine batch n°1 Aerobic mesophilic flora: 2,0.10 ² CFU/g	Leuconostoc mesenteroides Ad1734	300	1217	10	12	140	2,15	10	28	280	2,45
				100	3			100	3		
			1218	10	9	90	1,95	10	9	90	1,95
				100	1	Ne	Ne	100	2	Ne	Ne
			1219	10	9	90	1,95	10	17	170	2,23
				100	1	Ne	Ne	100	2		
		1220	10	18	190	2,28	10	11	120	2,08	
			100	3			100	2			
		1221	10	14	150	2,18	10	17	170	2,23	
			100	2			100	2			
		10000	1222	100	47	4600	3,66	100	31	3300	3,52
				1000	4			1000	5		
			1223	100	55	5500	3,74	100	39	3700	3,57
				1000	5			1000	2		
			1224	100	47	4800	3,68	100	39	4000	3,60
				1000	6			1000	5		
		1225	100	57	5500	3,74	100	43	4300	3,63	
			1000	4			1000	4			
		1000000	1226	100	60	5900	3,77	100	48	4500	3,65
				1000	5			1000	1		
			1227	10000	57	620000	5,79	10000	45	440000	5,64
				100000	11			100000	3		
			1228	10000	67	720000	5,86	10000	38	370000	5,57
				100000	12			100000	3		
1229	10000	54	540000	5,73	10000	42	460000	5,66			
	100000	5			100000	9					
1230	10000	46	460000	5,66	10000	24	250000	5,40			
	100000	5			100000	4					
1231	10000	44	430000	5,63	10000	34	330000	5,52			
	100000	3			100000	2					
300	1232	10	10	100	2,00	10	20	190	2,28		
		100	1			100	1				
	1233	10	15	160	2,20	10	10	110	2,04		
		100	2			100	2				
	1234	10	12	130	2,11	10	11	100	2,00		
		100	2			100	0				
1235	10	12	140	2,15	10	20	190	<1,00			
	100	3			100	1					
10000	1236	10	8	80	1,90	10	12	120	2,08		
		100	1	Ne	Ne	100	1				
	1237	100	44	4100	3,61	100	49	5000	3,70		
		1000	1			1000	6				
	1238	100	65	6500	3,81	100	39	3700	3,57		
		1000	7			1000	2				
1239	100	53	5600	3,75	100	39	4000	3,60			
	1000	9			1000	5					
1240	100	48	4800	3,68	100	55	5500	3,74			
	1000	12	N'	N'	1000	5					
1241	100	72	7400	3,87	100	40	4100	3,61			
	1000	9			1000	5					
1000000	1242	10000	63	640000	5,81	10000	39	430000	5,63		
		100000	7			100000	8				
	1243	10000	58	550000	5,74	10000	23	230000	5,36		
		100000	2			100000	2				
	1244	10000	59	550000	5,74	10000	33	350000	5,54		
		100000	2			100000	6				
1245	10000	46	490000	5,69	10000	32	300000	5,48			
	100000	8			100000	1					
1246	10000	49	470000	5,67	10000	41	400000	5,60			
	100000	3			100000	3					

♦ Analyses performed according to the COFRAC accreditation

Matrix	Strain	Target inoculation level(cfu/g)	N° sample	Reference method NF ISO 15214♦				3M Petrifilm Lactic Acid Bacteria Count Plate			
				45h - 30°C±1°C							
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm plate	cfu/g	log cfu/g
Macédoine batch n°1 Aerobic mesophilic flora: <40 CFU/g	<i>Lactococcus plantarum</i> Ad1147	300	760	10	41	440	2,64	10	35	330	2,52
				100	7			100	1		
			761	10	34	350	2,54	10	34	360	2,56
				100	4			100	5		
			762	10	26	260	2,41	10	38	360	2,56
				100	3			100	2		
		763	10	40	440	2,64	10	38	360	2,56	
			100	8			100	2			
		764	10	26	280	2,45	10	30	300	2,48	
			100	5			100	3			
		10000	765	100	187	19000	4,28	100	104	11000	4,04
				1000	18			1000	17		
			766	100	163	17000	4,23	100	106	11000	4,04
				1000	19			1000	11		
			767	100	175	18000	4,26	1000	18	18000	4,26
				1000	19			10000	2		
		768	100	188	19000	4,28	100	93	9500	3,98	
			1000	25			1000	11			
		769	100	169	17000	4,23	100	119	11000	4,04	
			1000	13			1000	6			
		1000000	770	10000	138	1400000	6,15	10000	98	960000	5,98
				100000	11			100000	8		
			771	10000	165	1600000	6,20	10000	110	1100000	6,04
				100000	16			100000	7		
772	10000		152	1500000	6,18	10000	163	1600000	6,20		
	100000		16			100000	10				
773	10000	127	1300000	6,11	10000	93	930000	5,97			
	100000	16			100000	9					
774	10000	153	1500000	6,18	10000	115	1100000	6,04			
	100000	14			100000	10					
Macédoine batch n°2 Aerobic mesophilic flora: <10 CFU/g	<i>Lactococcus plantarum</i> Ad1147	300	775	10	40	410	2,61	10	33	330	2,52
				100	5			100	3		
			776	10	31	330	2,52	10	28	280	2,45
				100	5			100	1		
			777	10	32	320	2,51	10	27	270	2,43
				100	10			100	3		
		778	10	23	250	2,40	10	30	300	2,48	
			100	4			100	3			
		779	10	31	320	2,51	10	33	320	2,51	
			100	4			100	2			
		10000	780	100	217	21000	4,32	100	92	9200	3,96
				1000	17			1000	20		
781	100		146	14000	4,15	100	117	12000	4,08		
	1000		12			1000	16				
782	100		186	18000	4,26	100	111	11000	4,04		
	1000		11			1000	10				
783	100	181	18000	4,26	100	117	12000	4,08			
	1000	20			1000	10					
784	100	162	17000	4,23	100	117	12000	4,08			
	1000	20			1000	15					
1000000	785	10000	121	1200000	6,08	10000	99	960000	5,98		
		100000	16			100000	7				
	786	10000	158	1600000	6,20	10000	101	1100000	6,04		
		100000	14			100000	15				
	787	10000	152	1500000	6,18	10000	120	1200000	6,08		
		100000	17			100000	10				
788	10000	158	1600000	6,20	10000	134	1300000	6,11			
	100000	19			100000	8					
789	10000	159	1600000	6,20	10000	102	1000000	6,00			
	100000	12			100000	13					

♦ Analyses performed according to the COFRAC accreditation

Matrix	Strain	Target inoculation level(cfu/g)	N° sample	Reference method NF ISO 15214 ♦				3M Petrifilm Lactic Acid Bacteria Count Plate			
				45h - 30°C±1°C							
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm plate	cfu/g	log cfu/g
Creamy salad dressing batch n°1 Aerobic mesophilic flora: <10 CFU/g	<i>Pedibacillus pentosaceus</i> PP1	300	2472	10	13	140	2,15	10	41	390	2,59
				100	2			100	2		
			2473	10	19	190	2,28	10	31	330	2,52
				100	7	N'	N'	100	5		
			2474	10	14	150	2,18	10	36	370	2,57
				100	2			100	5		
		2475	10	16	180	2,26	10	33	310	2,49	
			100	4			100	1			
		2476	10	16	160	2,20	10	37	360	2,56	
			100	2			100	3			
		2477	100	86	8600	3,93	100	82	8500	3,93	
			1000	9			1000	12			
		2478	100	67	6700	3,83	100	110	11000	4,04	
			1000	7			1000	14			
		2479	100	62	6800	3,83	100	126	12000	4,08	
			1000	13			1000	8			
		2480	100	53	5400	3,73	100	109	11000	4,04	
			1000	7			1000	7			
		2481	100	62	6000	3,78	100	113	11000	4,04	
			1000	4			1000	11			
		2482	10000	92	920000	5,96	10000	116	1200000	6,08	
			100000	19	N'	N'	100000	11			
		2483	10000	79	790000	5,90	10000	128	1300000	6,11	
			100000	8			100000	14			
2484	10000	65	650000	5,81	10000	111	1100000	6,04			
	100000	21	N'	N'	100000	13					
2485	10000	84	860000	5,93	10000	138	1400000	6,15			
	100000	11			100000	13					
2486	10000	70	700000	5,85	10000	138	1400000	6,15			
	100000	7			100000	12					
Creamy salad dressing batch n°2 Aerobic mesophilic flora: <40 CFU/g	<i>Pedibacillus pentosaceus</i> PP1	300	2487	10	14	140	2,15	10	35	350	2,54
				100	1			100	3		
			2488	10	31	360	2,56	10	33	310	2,49
				100	8			100	1		
			2489	10	28	290	2,46	10	24	240	2,38
				100	4			100	2		
		2490	10	27	300	2,48	10	44	440	2,64	
			100	6			100	4			
		2491	10	39	390	2,59	10	36	340	2,53	
			100	4			100	1			
		2492	100	66	7300	3,86	100	100	9600	3,98	
			1000	14			1000	6			
		2493	100	93	9600	3,98	100	113	12000	4,08	
			1000	13			1000	14			
		2494	100	69	7500	3,88	100	108	11000	4,04	
			1000	13			1000	15			
		2495	100	93	9900	4,00	100	116	12000	4,08	
			1000	16			1000	12			
		2496	100	76	7500	3,88	100	132	13000	4,11	
			1000	7			1000	14			
		2497	10000	68	730000	5,86	10000	100	980000	5,99	
			100000	12			100000	8			
		2498	10000	83	850000	5,93	10000	100	970000	5,99	
			100000	10			100000	7			
2499	10000	70	710000	5,85	10000	93	910000	5,96			
	100000	8			100000	7					
2500	10000	69	730000	5,86	10000	87	870000	5,94			
	100000	11			100000	9					
2501	10000	64	620000	5,79	10000	84	860000	5,93			
	100000	4			100000	11					

♦ Analyses performed according to the COFRAC accreditation

Matrix	Strain	Target inoculation level(cfu/g)	N° sample	Reference method NF ISO 15214♦				3M Petrifilm Lactic Acid Bacteria Count Plate			
				45h - 30°C±1°C							
				Dilution	cfu/plate	cfu/g	log cfu/g	Dilution	cfu/Petrifilm plate	cfu/g	log cfu/g
Process water batch n°1 Aerobic mesophilic flora: 1.10 ⁴ CFU/ml	<i>Lactococcus garvieae</i> Ad1640	300	2077	10	38	380	2,58	10	45	450	2,65
				100	4			100	4		
			2078	10	25	270	2,43	10	43	430	2,63
				100	5			100	4		
			2079	10	40	460	2,66	10	40	400	2,60
				100	10			100	4		
		2080	10	28	330	2,52	10	34	360	2,56	
			100	8			100	6			
		2081	10	32	370	2,57	10	52	510	2,71	
			100	9			100	4			
		10000	2082	100	167	17000	4,23	100	117	12000	4,08
				1000	24			1000	10		
			2083	100	166	17000	4,23	100	149	15000	4,18
				1000	23			1000	18		
			2084	100	140	14000	4,15	100	149	15000	4,18
				1000	17			1000	18		
		2085	100	117	12000	4,08	100	148	15000	4,18	
			1000	20			1000	12			
		2086	100	150	15000	4,18	100	145	14000	4,15	
			1000	17			1000	12			
		1000000	2087	10000	153	1500000	6,18	10000	117	1100000	6,04
100000	16			100000	8						
2088	10000		130	1300000 N'	6,11 N'	10000	78	820000	5,91		
	100000		3			100000	12				
2089	10000		121	1100000	6,04	10000	101	1000000	6,00		
	100000		5			100000	12				
2090	10000	112	1100000	6,04	10000	122	1200000	6,08			
	100000	13			100000	5					
2091	10000	109	1100000	6,04	10000	96	910000	5,96			
	100000	13			100000	4					
Process water batch n°2 Aerobic mesophilic flora: 5.5.10 ³ CFU/ml	<i>Lactococcus garvieae</i> Ad1640	300	2092	10	18	200	2,30	10	47	460	2,66
				100	4			100	3		
			2093	10	25	270	2,43	10	38	370	2,57
				100	5			100	3		
			2094	10	21	260	2,41	10	43	460	2,66
				100	8			100	8		
		2095	10	19	190	2,28	10	41	390	2,59	
			100	2			100	2			
		2096	10	28	290	2,46	10	47	480	2,68	
			100	4			100	6			
		10000	2097	100	188	18000	4,26	100	130	13000	4,11
				1000	15			1000	11		
2098	100		182	18000	4,26	100	187	18000	4,26		
	1000		18			1000	15				
2099	100		194	19000	4,28	100	161	16000	4,20		
	1000		17			1000	12				
2100	100	235	22000	4,34	100	157	16000	4,20			
	1000	12			1000	18					
2101	100	219	22000	4,34	100	105	10000	4,00			
	1000	21			1000	7					
1000000	2102	100000	27	2800000	6,45	10000	106	1000000	6,00		
		1000000	4			1000000	9				
	2103	10000	241	2400000	6,38	10000	139	1400000	6,15		
		100000	21			100000	13				
	2104	10000	216	2100000	6,32	10000	151	1500000	6,18		
		100000	20			100000	13				
2105	10000	208	2100000	6,32	10000	79	780000	5,89			
	100000	20			100000	7					
2106	10000	178	1800000	6,26	10000	117	1100000	6,04			
	100000	18			100000	7					

♦ Analyses performed according to the COFRAC accreditation

Appendix 7 - Accuracy profile study: summarized results

(Food) Category 1			Meat products									
(Food) Type 1			Cooked meats (Pâté)									
Sample Name	(Food) item	Level	Reference method result					Alternative method result				
			rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
301-305	Pâté	1	670	360	970	350	1200	670	400	880	400	800
541-455	Pâté	1	1400	1700	1500	1100	2000	1600	1400	1700	1300	1800
306-310	Pâté	2	2500	3400	4300	3700	4700	3700	4900	3700	4600	3200
456-460	Pâté	2	19000	14000	19000	9500	8000	7700	7500	8400	6500	6400
311-315	Pâté	3	340000	350000	390000	410000	310000	330000	360000	190000	170000	250000
461-465	Pâté	3	2000000	1900000	1200000	1600000	1300000	780000	560000	630000	470000	630000

(Food) Category 2			Dairy product									
(Food) Type 2			Pasteurized milk-based products (Panna cotta)									
Sample Name	(Food) item	Level	Reference method result					Alternative method result				
			rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
661-665	Panna cotta	1	330	390	350	420	420	430	350	500	420	430
676-680	Panna cotta	1	460	420	360	460	460	320	450	360	480	460
666-670	Panna cotta	2	19000	27000	22000	25000	21000	12000	12000	14000	14000	13000
681-685	Panna cotta	2	19000	18000	21000	22000	27000	14000	15000	15000	11000	19000
671-675	Panna cotta	3	2900000	2300000	2400000	2900000	2300000	1300000	1300000	1200000	1700000	1800000
686-690	Panna cotta	3	2300000	1900000	2600000	2900000	2300000	1600000	1200000	1400000	1300000	1200000

(Food) Category 3			Seafood products									
(Food) Type 3			Cooked products (Fish terrine)									
Sample Name	(Food) item	Level	Reference method result					Alternative method result				
			rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1217-1221	Fish terrine	1	140	90	90	190	150	280	90	170	120	170
1232-1236	Fish terrine	1	100	160	130	140	80	190	110	100	190	120
1222-1226	Fish terrine	2	4600	5500	4800	5500	5900	3300	3700	4000	4300	4500
1237-1241	Fish terrine	2	4100	6500	5600	4800	7400	5000	3700	4000	5500	4100
1227-1231	Fish terrine	3	620000	720000	540000	460000	430000	440000	370000	460000	250000	330000
1242-1246	Fish terrine	3	640000	550000	550000	490000	470000	430000	230000	350000	300000	400000

(Food) Category 4			Composite foods									
(Food) Type 4			Deli salads (Macédoine)									
Sample Name	(Food) item	Level	Reference method result					Alternative method result				
			rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
760-764	Macédoine	1	440	350	260	440	280	330	360	360	360	300
775-779	Macédoine	1	410	330	320	250	320	330	280	270	3000	320
765-769	Macédoine	2	19000	17000	18000	19000	17000	11000	11000	18000	9500	11000
780-784	Macédoine	2	21000	14000	18000	18000	17000	9200	12000	11000	12000	12000
770-774	Macédoine	3	1400000	1600000	1500000	1300000	1500000	960000	1100000	1600000	930000	1100000
785-789	Macédoine	3	1200000	1600000	1500000	1600000	1600000	960000	1100000	1200000	1300000	1000000

(Food) Category 5			Meal components									
(Food) Type 5			Sauce (Creamy salad dressing)									
Sample Name	(Food) item	Level	Reference method result					Alternative method result				
			rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
2472-2476	Creamy salad dressing	1	140	190	150	180	160	390	330	370	310	360
2487-2491	Creamy salad dressing	1	140	360	290	300	390	350	310	240	440	340
2477-2481	Creamy salad dressing	2	8600	6700	6800	5400	6000	8500	11000	12000	11000	11000
2492-2496	Creamy salad dressing	2	7300	9600	7500	9900	7500	9600	12000	11000	12000	13000
2482-2486	Creamy salad dressing	3	920000	790000	650000	860000	700000	1200000	1300000	1100000	1400000	1400000
2497-2501	Creamy salad dressing	3	730000	850000	710000	730000	620000	980000	970000	910000	870000	860000

(Food) Category 6			Environmental samples									
(Food) Type 6			Waters (Process water)									
Sample Name	(Food) item	Level	Reference method result					Alternative method result				
			rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
2077-2081	Process water	1	380	270	460	330	370	450	430	400	360	510
2092-2096	Process water	1	200	270	260	190	290	460	370	460	390	480
2082-2086	Process water	2	17000	17000	14000	12000	15000	12000	15000	15000	15000	14000
2097-2101	Process water	2	18000	18000	19000	22000	22000	13000	18000	16000	16000	10000
2087-2091	Process water	3	1500000	1300000	1100000	1100000	1100000	1100000	820000	1000000	1200000	910000
2102-2106	Process water	3	2800000	2400000	2100000	2100000	1800000	1000000	1400000	1500000	780000	1100000

Appendix 8 – Inclusivity / Exclusivity: raw data

INCLUSIVITY								
N°	Strain			Origin	Non-selective agar (CFU/plate)	MRS pH6,4 (CFU/plate)	MRS pH5,7 (CFU/plate)	3M Petrifilm Lactic Acid Bacteria Count Plate (CFU/Petrifilm plate)
	Genus	Species	Strain N°					
1	<i>Carnobacterium</i>	<i>divergens</i>	CIP 101029T	Salmon	68 (-7)	54 (-7)	0 (-5)	0 (-5)
2	<i>Carnobacterium</i>	<i>divergens</i>	SM001	Smoked salmon	18 (-7)	23 (-7)	0 (-5)	0 (-5)
3	<i>Carnobacterium</i>	<i>gallinarum</i>	ATCC 49517	Salmon	0 (-5)	107 (-6)	0 (-5)	0 (-5)
4	<i>Carnobacterium</i>	<i>maltaromicum</i>	Ad1245	Salmon	44 (-7)	39 (-7)	0 (-5)	0 (-5)
5	<i>Carnobacterium</i>	<i>maltaromaticum</i>	CIP103135	/	121 (-6)	50 (-6)	0 (-5)	0 (-5)
6	<i>Carnobacterium</i>	<i>maltaromaticum</i>	Ad1321	Whole egg	24 (-7)	8 (-7)	0 (-5)	0 (-5)
7	<i>Carnobacterium</i>	<i>piscicola</i>	Ad368	Raw milk	80 (-7)	15 (-7)	0 (-5)	0 (-5)
8	<i>Carnobacterium</i>	<i>piscicola</i>	Ad369	Dairy product	141 (-6)	18 (-7)	0 (-5)	0 (-5)
9	<i>Enterococcus</i>	<i>casseliflavus</i>	Ad1346	Water	34 (-7)	43 (-7)	17 (-7)	110 (-5)
10	<i>Enterococcus</i>	<i>durans</i>	Ad182	Liquid egg product	87 (-7)		66 (-7)	35 (-7)
11	<i>Enterococcus</i>	<i>faecalis</i>	Ad288	Ready to eat meals	154 (-7)	122 (-7)	93 (-7)	98 (-7)
12	<i>Enterococcus</i>	<i>faecalis</i>	85L012	Milk	33 (-7)		53 (-6)	81 (-6)
13	<i>Enterococcus</i>	<i>faecium</i>	Ad874	Cheese	31 (-7)	39 (-7)	31 (-7)	24 (-7)
14	<i>Enterococcus</i>	<i>galinarum</i>	Ad1145	Guacamole	128 (-6)		87 (-6)	19 (-6)
15	<i>Enterococcus</i>	<i>hirae</i>	Ad1362	Sea water	132 (-6)		110 (-6)	95 (-6)
16	<i>Enterococcus</i>	<i>mundtii</i>	Ad1440	Sea water	77 (-7)		66 (-7)	92 (-6)
17	<i>Lactobacillus</i>	<i>agilis</i>	2744	/	42 (-7)	47 (-7)	0 (-5)	0 (-5)
18	<i>Lactobacillus</i>	<i>bavaricus</i>	2588	/	94 (-7)		67 (-7)	92 (-7)
19	<i>Lactobacillus</i>	<i>brevis</i>	85S002	Deli salad	59 (-7)		49 (-7)	31 (-7)
20	<i>Lactobacillus</i>	<i>buchneri</i>	Ad708	Beverage	52 (-7)	46 (-7)	42 (-7)	17 (-7)
21	<i>Lactobacillus</i>	<i>bulgaricus</i>	L18	/	100 (-7)		68 (-7)	49 (-7)
22	<i>Lactobacillus</i>	<i>casei subsp rhamnosus</i>	A158	/	37 (-6)		26 (-6)	20 (-5)
23	<i>Lactobacillus</i>	<i>curvatus</i>	Ad380	Delicatessen	40 (-7)		30 (-5)	136 (-6)
24	<i>Lactobacillus</i>	<i>delbrueckii</i>	91L351	Raw milk	45 (-7)	51 (-7)	0 (-5)	77 (-6)
25	<i>Lactobacillus</i>	<i>delbrueckii var delbrueckii</i>	93L821	Raw milk	0 (-5)	100 (-5)	57 (-5)	77 (-5)
26	<i>Lactobacillus</i>	<i>delbrueckii</i>	91L353	Raw milk	74 (-7)	83 (-7)	6 (-7)	51 (-7)
27	<i>Lactobacillus</i>	<i>farciminis</i>	Ad1098	Cheese	181 (-7)		97 (-7)	105 (-7)
28	<i>Lactobacillus</i>	<i>fermentum</i>	Ad482	Tomato juice	42 (-7)		66 (-7)	138 (-7)
29	<i>Lactobacillus</i>	<i>fructivorans</i>	9511	Beverage(pineal)	33 (-7)	48 (-7)	0 (-5)	0 (-5)
30	<i>Lactobacillus</i>	<i>helveticus</i>	LH 56	/	36 (-7)	35 (-6)	0 (-5)	0 (-5)
31	<i>Lactobacillus</i>	<i>helveticus</i>	CNRZ223T	Dairy product	26 (-7)	24 (-7)	3 (-5)	0 (-5)
32	<i>Lactobacillus</i>	<i>hilgardii</i>	9548	Beverage(Porto)	27 (-7)		31 (-7)	18 (-7)
33	<i>Lactobacillus</i>	<i>parabuchneri</i>	Ad1821	Cucumber with cream	36 (-7)		166 (-6)	95 (-6)
34	<i>Lactobacillus</i>	<i>paracasei</i>	Ad1096	Cheese	122 (-7)		128 (-7)	105 (-7)

INCLUSIVITY								
N°	Strain			Origin	Non-selective agar (CFU/plate)	MRS pH6,4 (CFU/plate)	MRS pH5,7 (CFU/plate)	3M Petrifilm Lactic Acid Bacteria Count Plate (CFU/Petrifilm plate)
	Genus	Species	Strain N°					
35	<i>Lactobacillus</i>	<i>paraplantarum</i>	Ad372	Cooked sausage	124 (-7)		151 (-7)	80 (-7)
36	<i>Lactobacillus</i>	<i>plantarum</i>	Ad1147	Guacamole	186 (-7)		223 (-7)	177 (-7)
37	<i>Lactobacillus</i>	<i>reuteri</i>	DSM20016	Dairy product	0 (-5)	57 (-7)	32 (-7)	10 (-7)
38	<i>Lactobacillus</i>	<i>rhamnosus</i>	Ad712	/	86 (-7)		134 (-7)	101 (-7)
39	<i>Lactobacillus</i>	<i>sunkii</i>	Ad1819	Cucumber with cream	90 (-6)		112 (-6)	35 (-6)
40	<i>Lactobacillus</i>	<i>versmoldensis</i>	Ad373	Cooked sausage	0 (-5)	45 (-7)	23 (-7)	100 (-6)
41	<i>Lactococcus</i>	<i>garvieae</i>	Ad 1640	Compost	87 (-7)	75 (-7)	83 (-7)	89 (-7)
42	<i>Lactococcus</i>	<i>lactis subsp lactis</i>	Ad125	Fermented milk	194 (-6)		184 (-6)	150 (-6)
43	<i>Leuconostoc</i>	<i>carosum</i>	Ad411	Ham	26 (-7)		49 (-7)	18 (-7)
44	<i>Leuconostoc</i>	<i>citreum</i>	Ad396	Ham	30 (-7)		33 (-7)	28 (-7)
45	<i>Leuconostoc</i>	<i>citreum</i>	Ad473	Ham	31 (-7)		21 (-7)	22 (-7)
46	<i>Leuconostoc</i>	<i>dextranicum</i>	90S004	Deli salad	>300 (-5) 37 (-6)	>300 (-5) 5 35 (-6)	3 (-5) 0 (-6)	262 (-5) 21 (-6)
47	<i>Leuconostoc</i>	<i>mesenteroïdes</i>	Ad1734	Samoussas	55 (-6)		56 (-6)	44 (-6)
48	<i>Oenococcus</i>	<i>oeni</i>	73	Red wine	0 (-5)	139 (-7)	174 (-7)	0 (-5)
49	<i>Leuconostoc</i>	<i>pseudomesenteroïdes</i>	Ad835	Chocolate cream	36 (-6)		71 (-5)	116 (-5)
50	<i>Pediococcus</i>	<i>acidolactis</i>	CIP54.167	Unknown	221 (-7)		197 (-7)	138 (-7)
51	<i>Pediococcus</i>	<i>damnosus</i>	P66	Wine	83 (-7)		64 (-7)	0 (-5)
52	<i>Pediococcus</i>	<i>dextrinicus</i>	ATCC33087	Cattle feed	32 (-7)		33 (-7)	35 (-7)
53	<i>Pediococcus</i>	<i>inopinatus</i>	Ad1820	Cucumber with cream	0 (-5)	38 (-7)	45 (-7)	0 (-5)
54	<i>Pediococcus</i>	<i>pentosaceus</i>	CIP54.92	Fermented cucumber	138 (-7)		157 (-7)	97 (-7)
55	<i>Pediococcus</i>	<i>pentosaceus</i>	PP1	Beverage	273 (-7)		166 (-7)	328 (-7)
56	<i>Streptococcus</i>	<i>macedonicus</i>	Ad1347	Water	155 (-6)		111 (-6)	111 (-6)
57	<i>Streptococcus</i>	<i>parauberis</i>	Ad2518	Liquid egg product	43 (-6)	61 (-6)	0 (-5)	68 (-5)

EXCLUSIVITY							
N°	Strain			Origin	Non-selective agar (CFU/plate)	MRS pH5,7 Spreading (CFU/plate)	3M Petrifilm Lactic Acid Bacteria Count Plate (CFU/Petrifilm plate)
1	<i>Bacillus</i>	<i>cereus</i>	Ad420	Caseinate	170 (-5)	0 (-5)	0 (-5)
2	<i>Bacillus</i>	<i>licheniformis</i>	Ad2500	Dairy product	37 (-5)	0 (-5)	0 (-5)
3	<i>Bacillus</i>	<i>subtilis</i>	Ad2487	Milk	73 (-6)	0 (-5)	0 (-5)
4	<i>Bifidobacterium</i>	<i>animalis</i>	Ad1113	Milk	25 (-7)	0 (-5)	0 (-5)
5	<i>Bifidobacterium</i>	<i>longum</i>	ATCC 15707	Milk	165 (-6)	0 (-5)	0 (-5)
6	<i>Brochothrix</i>	<i>campestris</i>	CIP 102920	Sol	143 (-5)	0 (-5)	0 (-5)
7	<i>Brochothrix</i>	<i>thermosphacta</i>	Ad1702	Salmon	12 (-5)	0 (-5)	0 (-5)
8	<i>Candida</i>	<i>glabrosa</i>	Ad2242	Bacon	108 (-5)	0 (-5)	0 (-5)
9	<i>Candida</i>	<i>sake</i>	Ad2243	Pineapple juice	147 (-5)	0 (-5)	0 (-5)
10	<i>Cryptococcus</i>	<i>albidus</i>	Ad2436	Pineapple purée	18 (-5)	0 (-5)	0 (-5)
11	<i>Cryptococcus</i>	<i>magnus</i>	Ad1039	Environment (fruit)	13 (-5)	0 (-5)	0 (-5)
12	<i>Debaryomyces</i>	<i>hansenii</i>	Ad1044	Environment (fruit)	21 (-5)	0 (-5)	0 (-5)
13	<i>Issatchentia</i>	<i>orientalis</i>	Ad1489	Yoghurt with fruits	109 (-5)	104 (-5)	0 (-5)
14	<i>Kluyveromyces</i>	<i>marxianus</i>	Ad1488	Yoghurt with fruits	252 (-5)	212 (-5)	0 (-5)
15	<i>Listeria</i>	<i>grayi</i>	Ad2415	Pâté	32 (-6)	0 (-5)	0 (-5)
16	<i>Listeria</i>	<i>innocua</i>	Ad1674	Smoked salmon	100 (-7)	0 (-5)	0 (-5)
17	<i>Listeria</i>	<i>monocytogenes</i>	Ad1678	Ready to eat meal	43 (-7)	0 (-5)	0 (-5)
18	<i>Macrococcus</i>	<i>caseolyticus</i>	CIP 100755	Milk	222 (-5)	0 (-5)	0 (-5)
19	<i>Microbacterium</i>	<i>arborescens</i>	Ad1141	Artichoke	110 (-7)	0 (-5)	0 (-5)
20	<i>Pichia</i>	<i>anomala</i>	Ad2230	Environment (beverage)	84 (-5)	13 (-5)	0 (-5)
21	<i>Propionibacterium</i>	<i>acidipropionici</i>	Ad349	Milk	173 (-7)	0 (-5)	0 (-5)
22	<i>Propionibacterium</i>	<i>cyclohexanicum</i>	TL1365	Milk product	20 (-7)	0 (-5)	0 (-5)
23	<i>Propionibacterium</i>	<i>freudenreichii</i>	CIP 103027	Milk product	No growth		
24	<i>Propionibacterium</i>	<i>freudenreichii</i>	Ad283	Milk	No growth		
25	<i>Propionibacterium</i>	<i>jensenii</i>	CIP 103028	Milk	No growth		
26	<i>Saccharomyces</i>	<i>cerevisiae</i>	Ad998	Butter	27 (-6)	190 (-5)	0 (-5)
27	<i>Staphylococcus</i>	<i>aureus</i>	Ad909	Cheese	87 (-7)	0 (-5)	0 (-5)
28	<i>Staphylococcus</i>	<i>epidermidis</i>	Ad931	Fruit preparation	15 (-5)	0 (-5)	0 (-5)
29	<i>Staphylococcus</i>	<i>equorum</i>	Ad1099	Cheese	59 (-5)	0 (-5)	0 (-5)
30	<i>Staphylococcus</i>	<i>haemolyticus</i>	Ad1657	Swimming pool water	48 (-6)	0 (-5)	0 (-5)
31	<i>Staphylococcus</i>	<i>saprophyticus</i>	Ad866	Milk	28 (-7)	0 (-5)	0 (-5)
32	<i>Torulaspora</i>	<i>delbruckii</i>	Ad1155	Cheese	260 (-5)	40 (-5)	0 (-5)
33	<i>Yarrowia</i>	<i>lipolytica</i>	Ad2231	Environment (beverage)	164 (-5)	0 (-5)	0 (-5)
34	<i>Zygosaccharomyces</i>	<i>cerevisiae</i>	Ad1890	Apricot coulis	80 (-6)	43 (-6)	0 (-5)

Appendix 9 - Homogeneity of inoculation

Low inoculation level							
Sample	Analysis 1	Analysis 2	Log Analysis 1	Log Analysis 2	D	S	D ²
1	150	230	2,176	2,362	0,186	4,538	0,034
2	210	360	2,322	2,556	0,234	4,879	0,055
3	140	240	2,146	2,380	0,234	4,526	0,055
4	200	250	2,301	2,398	0,097	4,699	0,009
5	200	190	2,301	2,279	-0,022	4,580	0,000
6	170	290	2,230	2,462	0,232	4,693	0,054
7	140	440	2,146	2,643	0,497	4,790	0,247
8	170	460	2,230	2,663	0,432	4,893	0,187
9	190	340	2,279	2,531	0,253	4,810	0,064
10	80	220	1,903	2,342	0,439	4,246	0,193
sum	1650	3020	22,035	24,617	2,582	46,653	0,899

\bar{S}_w	\bar{S}_b	San ²	Ssam ²	F1	F2	Target standard deviation to apply	Test value
0,04494	0,0197	0,04494	-0,012614	1,88	1,01	0,25	0,05597

Test value > Ssam² : the homogeneity of inoculation is verified.

Medium inoculation level							
Sample	Analysis 1	Analysis 2	Log Analysis 1	Log Analysis 2	D	S	D ²
11	17000	26000	4,230	4,415	0,185	8,645	0,034
12	17000	46000	4,230	4,663	0,432	8,893	0,187
13	30000	29000	4,477	4,462	-0,015	8,940	0,000
14	18000	44000	4,255	4,643	0,388	8,899	0,151
15	16000	43000	4,204	4,633	0,429	8,838	0,184
16	42000	27000	4,623	4,431	-0,192	9,055	0,037
17	33000	19000	4,519	4,279	-0,240	8,797	0,057
18	21000	28000	4,322	4,447	0,125	8,769	0,016
19	26000	29000	4,415	4,462	0,047	8,877	0,002
20	23000	32000	4,362	4,505	0,143	8,867	0,021
sum	243000	323000	43,638	44,942	1,304	88,580	0,689

\bar{S}_w	\bar{S}_b	San ²	Ssam ²	F1	F2	Target standard deviation to apply	Test value
0,03445	0,0059	0,03445	-0,014284	1,88	1,01	0,25	0,04537

Test value > Ssam² : the homogeneity of inoculation is verified.

High inoculation level							
Sample	Analysis 1	Analysis 2	Log Analysis 1	Log Analysis 2	D	S	D ²
21	390000	400000	5,591	5,602	0,011	11,193	0,000
22	550000	340000	5,740	5,531	-0,209	11,272	0,044
23	430000	300000	5,633	5,477	-0,156	11,111	0,024
24	390000	480000	5,591	5,681	0,090	11,272	0,008
25	290000	350000	5,462	5,544	0,082	11,006	0,007
26	300000	450000	5,477	5,653	0,176	11,130	0,031
27	370000	410000	5,568	5,613	0,045	11,181	0,002
28	470000	350000	5,672	5,544	-0,128	11,216	0,016
29	300000	420000	5,477	5,623	0,146	11,100	0,021
30	430000	300000	5,633	5,477	-0,156	11,111	0,024
sum	3920000	3800000	55,846	55,746	-0,100	111,593	0,178

\bar{S}_w	\bar{S}_b	San ²	Ssam ²	F1	F2	Target standard deviation to apply	Test value
0,00891	0,0035	0,00891	-0,002713	1,88	1,01	0,25	0,01957

Appendix 10 - Results obtained by the collaborative laboratories and the expert laboratory

Collaborator	N° sample	Reference method: ISO 15214				Alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria			
		Dilution	CFU/plate	CFU/g	LOG(CFU/g)	Dilution	CFU/plate	CFU/g	LOG(CFU/g)
A Aerobic mesophilic flora: 1300 CFU/g Enumeration on MRS plates confirmed by the lab Another method was also used in parallel which confirmed the results obtained on Petrifilm tests	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	47	460	2,66	10	42	420	2,62
		100	4			100	4		
	8	10	128	1200	3,08	10	50	460	2,66
		100	0			100	0		
	4	100	81	7800	3,89	1000	39	39000	4,59
		1000	5			10000	4		
	5	100	78	7500	3,88	1000	51	51000	4,71
		1000	5			10000	5		
	1	1000	26	32000	4,51	10000	55	560000	5,75
		10000	9			100000	7		
7	10000	47	580000	5,76	10000	69	670000	5,83	
	100000	17			100000	5			
B Aerobic mesophilic flora: 540 CFU/g	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	62	610	2,79	10	48	480	2,68
		100	5			100	5		
	8	10	25	260	2,41	10	38	380	2,58
		100	4			100	4		
	4	1000	53	55000	4,74	1000	48	46000	4,66
		10000	7			10000	3		
	5	1000	43	44000	4,64	1000	46	47000	4,67
		10000	5			10000	6		
	1	10000	42	430000	5,63	10000	55	560000	5,75
		100000	5			100000	7		
7	10000	38	380000	5,58	10000	40	420000	5,62	
	10000	4			100000	6			

Collaborator	N° sample	Reference method: ISO 15214				Alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria			
		Dilution	CFU/plate	CFU/g	LOG(CFU/g)	Dilution	CFU/plate	CFU/g	LOG(CFU/g)
C Aerobic mesophilic flora: 1200 CFU/g Most probably inversion of two samples but impossible to confirm by the lab Small colonies on MRS	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	41	370	2,57	10	52	500	2,70
		100	0			100	3		
	8	10000	31	330000	5,52	10	61	600	2,78
		100000	5			100	6		
	4	1000	53	53000	4,72	1000	50	51000	4,71
		10000	5			10000	6		
	5	1000	38	37000	4,57	1000	56	53000	4,72
		10000	3			10000	2		
	1	10000	55	560000	5,75	10000	87	870000	5,94
		100000	7			100000	9		
7	10	41	370	2,57	10000	63	650000	5,81	
	100	0			100000	8			
D Aerobic mesophilic flora: 1300 CFU/g Difficulties encountered for MRS enumeration due to wet plates surfaces	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	38	360	2,56	10	68	660	2,82
		100	1			100	5		
	8	100	ND	ND	ND	10	54	540	2,73
		1000	0			100	50		
	4	100	ND	ND	ND	1000	70	69000	4,84
		1000	1			10000	6		
	5	100	ND	ND	ND	1000	49	54000	4,73
		1000	3			10000	10		
	1	1000	ND	ND	ND	10000	82	840000	5,92
		10000	4			100000	10		
7	100	ND	ND	ND	10000	69	690000	5,84	
	1000	0			100000	80			

Collaborator	N° sample	Reference method: ISO 15214				Alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria			
		Dilution	CFU/plate	CFU/g	LOG(CFU/g)	Dilution	CFU/plate	CFU/g	LOG(CFU/g)
E Aerobic mesophilic flora: 1900 CFU/g	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	52	500	2,70	10	42	450	2,65
		100	4			100	7		
	8	10	23	260	2,41	10	56	580	2,76
		100	6			100	8		
	4	1000	48	46000	4,66	1000	52	51000	4,71
		10000	3			10000	4		
	5	1000	54	52000	4,72	1000	53	51000	4,71
		10000	3			10000	3		
1	10000	43	410000	5,61	10000	42	440000	5,64	
	100000	2			100000	6			
7	10000	32	290000	5,46	10000	45	470000	5,67	
	100000	0			100000	7			
F Aerobic mesophilic flora: 1700 CFU/g Difficulties encountered for reading the MRS plates (clusters of colonies)	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	18	160	2,20	10	55	520	2,72
		100	0			100	2		
	8	10	17	160	2,20	10	55	570	2,76
		100	0			100	8		
	4	100	18	1800	3,26	100	272	28000	4,45
		1000	2			1000	35		
	5	100	27	2500	3,40	100	262	28000	4,45
		1000	0			1000	45		
	1	1000	24	23000	4,36	10000	53	510000	5,71
		10000	1			100000	3		
7	100	39	4200	3,62	10000	56	560000	5,75	
	1000	7			100000	6			

Collaborator	N° sample	Reference method: ISO 15214				Alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria			
		Dilution	CFU/plate	CFU/g	LOG(CFU/g)	Dilution	CFU/plate	CFU/g	LOG(CFU/g)
G Aerobic mesophilic flora: 1000 CFU/g	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	58	570	2,76	10	54	550	2,74
		100	5			100	6		
	8	10	46	490	2,69	10	13	170	2,23
		100	8			100	6		
	4	1000	60	61000	4,79	1000	77	74000	4,87
		10000	7			10000	4		
	5	1000	47	47000	4,67	1000	53	55000	4,74
		10000	5			10000	8		
1	10000	76	770000	5,89	1000	63	620000	5,79	
	100000	9			100000	5			
7	10000	75	790000	5,90	10000	64	620000	5,79	
	100000	12			100000	4			
H Aerobic mesophilic flora: 2800 CFU/g	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	58	560	2,75	10	49	480	2,68
		100	3			100	4		
	8	10	44	440	2,64	10	47	480	2,68
		100	4			100	6		
	4	1000	26	25000	4,40	1000	42	45000	4,65
		10000	2			10000	7		
	5	1000	23	21000	4,32	1000	43	41000	4,61
		10000	0			10000	2		
1	10000	40	410000	5,61	10000	64	630000	5,80	
	100000	5			100000	5			
7	10000	48	480000	5,68	10000	61	620000	5,79	
	100000	5			100000	7			

Collaborator	N° sample	Reference method: ISO 15214				Alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria			
		Dilution	CFU/plate	CFU/g	LOG(CFU/g)	Dilution	CFU/plate	CFU/g	LOG(CFU/g)
I Aerobic mesophilic flora: 450 CFU/g	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	52	510	2,71	10	49	470	2,67
		100	4			100	3		
	8	10	94	940	2,97	10	62	580	2,76
		100	9			100	2		
	4	1000	53	49000	4,69	1000	64	73000	4,86
		10000	1			10000	16		
	5	1000	71	81000	4,91	1000	78	80000	4,90
		10000	18			10000	10		
1	10000	66	640000	5,81	10000	76	790000	5,90	
	100000	4			100000	11			
7	10000	97	1000000	6,00	10000	104	1000000	6,00	
	100000	18			100000	8			
J Aerobic mesophilic flora: 1700 CFU/g	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	58	580	2,76	10	60	600	2,78
		100	6			100	6		
	8	10	69	660	2,82	10	64	660	2,82
		100	3			100	8		
	4	1000	46	45000	4,65	1000	54	50000	4,70
		10000	3			10000	1		
	5	1000	33	36000	4,56	1000	58	55000	4,74
		10000	7			10000	3		
1	10000	49	530000	5,72	10000	72	730000	5,86	
	100000	9			100000	8			
7	10000	62	590000	5,77	10000	49	480000	5,68	
	100000	3			100000	4			

Collaborator	N° sample	Reference method: ISO 15214				Alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria			
		Dilution	CFU/plate	CFU/g	LOG(CFU/g)	Dilution	CFU/plate	CFU/g	LOG(CFU/g)
K Aerobic mesophilic flora: 1400 CFU/g	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	39	360	2,56	10	62	600	2,78
		100	0			100	4		
	8	10	35	360	2,56	10	51	510	2,71
		100	4			100	5		
	4	1000	42	42000	4,62	1000	52	52000	4,72
		10000	4			10000	5		
	5	1000	129	130000	5,11	1000	62	65000	4,81
		10000	10			10000	9		
1	1000	114	110000	5,04	10000	77	750000	5,88	
	10000	12			100000	6			
7	1000	156	180000	5,26	10000	47	480000	5,68	
	10000	38			100000	6			
L Aerobic mesophilic flora: 2700 CFU/g	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	28	290	2,46	10	70	670	2,83
		100	4			100	3		
	8	10	50	510	2,71	10	73	710	2,85
		100	6			100	6		
	4	1000	53	54000	4,73	1000	58	56000	4,75
		10000	6			10000	4		
	5	1000	68	68000	4,83	1000	76	81000	4,91
		10000	7			10000	13		
	1	10000	51	560000	5,75	10000	71	690000	5,84
		100000	11			100000	5		
7	10000	55	590000	5,77	10000	72	730000	5,86	
	100000	10			100000	8			

Collaborator	N° sample	Reference method: ISO 15214				Alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria			
		Dilution	CFU/plate	CFU/g	LOG(CFU/g)	Dilution	CFU/plate	CFU/g	LOG(CFU/g)
M Aerobic mesophilic flora: Not tested	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	48	510	2,71	10	41	440	2,64
		100	8			100	7		
	8	10	52	520	2,72	10	47	440	2,64
		100	5			100	1		
	4	1000	37	35000	4,54	1000	58	56000	4,75
		10000	1			10000	4		
	5	1000	33	35000	4,54	1000	39	39000	4,59
		10000	6			10000	4		
1	10000	46	450000	5,65	10000	39	370000	5,57	
	100000	3			100000	2			
7	10000	31	310000	5,49	10000	66	610000	5,79	
	100000	3			100000	1			
N Aerobic mesophilic flora: 1500 CFU/g	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	58	540	2,73	10	59	670	2,83
		100	1			100	15		
	8	10	39	360	2,56	10	62	650	2,81
		100	1			100	9		
	4	1000	76	75000	4,88	1000	77	76000	4,88
		10000	7			10000	7		
	5	1000	45	45000	4,65	1000	68	70000	4,85
		10000	5			10000	9		
	1	10000	33	320000	5,51	10000	54	550000	5,74
		100000	2			100000	7		
	7	10000	34	330000	5,52	10000	69	700000	5,85
		100000	2			100000	8		

Collaborator	N° sample	Reference method: ISO 15214				Alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria			
		Dilution	CFU/plate	CFU/g	LOG(CFU/g)	Dilution	CFU/plate	CFU/g	LOG(CFU/g)
O Aerobic mesophilic flora: 1400 CFU/g	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	43	410	2,61	10	54	580	2,76
		100	2			100	10		
	8	10	39	400	2,60	10	71	710	2,85
		100	5			100	7		
	4	1000	53	53000	4,72	1000	62	64000	4,81
		10000	5			10000	8		
	5	1000	54	54000	4,73	1000	65	65000	4,81
		10000	5			10000	7		
	1	10000	58	560000	5,75	10000	80	800000	5,90
		100000	4			100000	8		
7	10000	66	690000	5,84	10000	67	680000	5,83	
	100000	10			100000	8			

Collaborator	N° sample	Reference method: ISO 15214♦				Alternative method: 3M™ Petrifilm™ Lactic Acid Bacteria			
		Dilution	CFU/plate	CFU/g	LOG(CFU/g)	Dilution	CFU/plate	CFU/g	LOG(CFU/g)
ADRIA Aerobic mesophilic flora: 1200 CFU/g	2	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	6	10	0	<10	<1,00	10	0	<10	<1,00
		100	0			100	0		
	3	10	25	300	2,48	10	33	340	2,53
		100	7			100	4		
	8	10	36	360	2,56	10	52	530	2,72
		100	3			100	6		
	4	1000	29	33000	4,52	1000	39	38000	4,58
		10000	7			10000	3		
	5	1000	42	45000	4,65	1000	54	55000	4,74
		10000	7			10000	6		
	1	10000	45	460000	5,66	10000	42	410000	5,61
		100000	6			100000	3		
7	10000	29	330000	5,52	10000	39	390000	5,59	
	100000	7			100000	4			

♦ Analyses performed according to the COFRAC accreditation

ADRIA Développement

Summary report (Version 0)

3M Petrifilm Lactic Acid Bacteria Count Plate