

NF VALIDATION
Validation of alternative analytical methods
Application in food microbiology

Summary report

Validation study according to the ISO 16140-2

TEMPO® AC method

(Certificate number: BIO 12/35 – 05/13)

**for the enumeration of aerobic mesophilic flora
in human food, pet food and production environmental samples**

Quantitative method

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This report consists of 86 pages, including 8 appendices.

Only copies including the totality of this report are authorised.

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

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

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

The technical protocol and the result interpretation were carried out according to the ISO 16140-2 (2016), ISO 16140-2/A1 (2024) and the AFNOR technical rules (Revision 12).

Validation protocols	- ISO 16140-1 (2016): Microbiology of the food chain - Method validation — <i>Part 1: Vocabulary</i> - ISO 16140-2 (2016) & ISO 16140-2/A1 (2024): Microbiology of the food chain - Method validation — <i>Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method</i> - AFNOR technical rules (Revision 12)
Reference method[♦]	ISO 4833-1 (2013): Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony count at 30 C by the pour plate technique
Alternative method	TEMPO® AC method
Scope	> Human food > Pet food > Production environmental samples
Certification organism	AFNOR Certification (http://nf-validation.afnor.org/)

[♦] Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

1 INTRODUCTION

The TEMPO® AC method was validated on the 23rd of May 2013 (Certificate number BIO 12/35-05/13) for human food, pet food and production environmental samples according to the ISO 16140 (2003) standard. Since this date, the following renewals and extensions were performed:

Date	Description	Reference method	Validation standard	Conducted by
<i>May 2013</i>	Initial validation study of the TEMPO® AC for food, pet food and production environmental samples	ISO 4833-1 (2013)	ISO 16140 (2003)	ADRIA
<i>October 2017</i>	Renewal study according to ISO 16140-2 (2016)	ISO 4833-1 (2013)	ISO 16140-2 (2016)	ADRIA
<i>April 2021</i>	Renewal study	ISO 4833-1 (2013)	ISO 16140-2 (2016)	ADRIA
<i>April 2025</i>	Renewal study	ISO 4833-1 (2013)	ISO 16140-2 (2016) & ISO 16140-2/A1 (2024)	ADRIA

2 METHODS DESCRIPTION

2.1 Alternative method

2.1.1 Principle

TEMPO® system is an automated method associating an innovative card with an adapted medium to ensure rapid enumeration of several quality indicators.

The method is based on the MPN principle (Most Probably Number), with the TEMPO® card.

The TEMPO® AC test consists of a vial of culture medium and a TEMPO® card, which are specific to this test. The culture medium is inoculated with the sample to be tested and transferred by the TEMPO® Filler into the card. The microorganisms present in the card reduce the substrate in the culture medium during incubation and cause a fluorescent signal to appear, which is detected by the Tempo Reader instrument.

Depending on the number and size of the positive wells, the TEMPO® Reader calculates the number of microorganisms present in the sample according to a calculation based on the MPN method.

2.1.2 Protocol

The detailed protocol is provided in **Appendix 1**.

The different steps are the following:

- Preparation of the initial suspension according to the ISO 6887 parts in a TEMPO Stomacher bag, and decimal dilutions, if necessary,
- Inoculation of the reconstituted medium
- Filling the cards using the TEMPO Filler
- Incubation of the cards for:
 - o 40 - 48 h: all foods, pet food and production environmental samples (standard protocol)
 - o 24 - 28 h: raw meats including poultry, ready to eat meals, ready-to-reheat meals, fruits and vegetables, production environmental samples (specific protocol)
- Reading the cards using the TEMPO Reader

It is possible to store the cards for 48 h at 5°C ± 3°C before reading.

2.1.3 Restrictions

There is no restriction.

2.2 Reference method♦

The reference method used for comparison according to the ISO 16140-2 is the ISO 4833-1:2013 - Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony count at 30° C by the pour plate technique (See **Appendix 2**).

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

3 INITIAL VALIDATION STUDY AND EXTENSION/RENEWAL STUDIES: RESULTS

3.1 Method comparison study

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

3.1.1 *Protocols applied during the validation study*

> Incubation time

For the relative trueness and the accuracy profile studies, all the samples were incubated for 40 and 48h.

For the samples concerned by both the specific and the standard protocols, three incubation times were tested (24 h, 40 h and 48 h); this was done as follows:

Two serials of TEMPO cards were inoculated:

- One serial was incubated for 24 h (samples tested with specific protocol).
- One serial was incubated for 40 h and 48 h (samples tested by both protocols).

> Cards storage for 48 h at 5°C ± 3°C

For the relative trueness study, all the cards were stored for 48 h at 5°C ± 3°C after reading and read a second time. This was applied after 24 h incubation time for the samples tested with the specific protocol, and after 48h incubation time for all the samples

3.1.2 *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.

3.1.2.1 *Number and nature of the samples*

Seven categories were tested with three different types per category. The samples were analyzed in duplicate for the initial validation study (2013) but in simplicate for the renewal study.

During the initial validation study, 116 samples were analysed providing 41, 84 or 84 interpretable results depending on the incubation time tested (24 h, 40 h, 48 h).

For the renewal study, 55 samples were tested in 2017 providing 25, 35 or 37 interpretable results for respectively 24 h, 40 h and 48 h incubation time.

The repartition of the analysed samples and interpretable results per category, type and incubation time is provided in Table 1.

Table 1 – Categories, types and incubation times

Category	Type		Number of samples tested			Number of interpretable results		
			Incubation time			Incubation time		
			24 h	40 h	48 h	24 h	40 h	48 h
1 Raw meats including poultry	a	Poultry	6	6	6	5	5	5
	b	Beef	6	6	6	5	5	5
	c	Other meats	7	7	7	5	5	5
	Total		19	19	19	15	15	15
2 Ready to reheat products and delicatessen	a	Ready to reheat meat-based products	22	22	22	14	13	14
	b	Cooked delicatessen	0	5	5	0	5	5
	c	Raw delicatessen	0	7	7	0	5	5
	Total		22	34	34	14	23	24
3 Dairy products	a	Raw and pasteurized milks	0	12	12	0	6	6
	b	Milk powders	0	5	5	0	5	5
	c	Ice cream and dairy desserts	0	6	6	0	5	5
	Total		0	23	23	0	16	16
4 Fruits and vegetables	a	Vegetables	9	9	9	5	5	5
	b	Fruits preparations	8	8	8	5	5	6
	c	Ready to eat, ready to reheat, ready to cook	5	5	5	5	5	5
	Total		22	22	22	15	15	16
5 Seafood products	a	Raw fishes	0	6	6	0	5	5
	b	Marinated, smoked fishes	0	8	8	0	5	5
	c	Ready to eat, ready to reheat, ready to cook	8	10	10	7	8	7
	Total		8	24	24	7	18	17
6 Pet food	a	Raw	0	7	7	0	5	5
	b	Sausages, pâtés	0	13	13	0	5	5
	c	Pellets	0	9	9	0	5	6
	Total		0	29	29	0	15	16
7 Production environmental samples	a	Process waters	6	6	6	5	5	5
	b	Wipes, sponges	8	8	8	5	7	7
	c	Dusts	6	6	6	5	5	5
	Total		20	20	20	15	17	17
All categories			91	171	171	66	119	121

3.1.2.2 Artificial and natural contamination of the samples

Only two samples were artificially contaminated for the renewal study (See Table 2).

Table 2 – Artificial contamination

Sample No	Product	Strain	Origin	Injury protocol	Injury measurement
1409	Pâté for cat	<i>E. coli</i> Ad1999	Poultry meat	HT 15 min at 56°C	0.4
1410	Pâté for cat	<i>E. coli</i> Ad1999	Poultry meat	HT 15 min at 56°C	0.4

3.1.2.3 Raw data

The raw data are provided in **Appendix 3**.

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

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

- Interpretable results with the reference and the alternative methods.
- Results with less than 4 colonies per plate with the reference and/or the alternative method (indicated with “*” in the data) in order to have a more precise result. These results 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 3 - Classification of the data

Category		Interpretable results (combining all the incubation times)	Below the quantification limit by one or both methods	Above quantification limit by one or both methods	<4 CFU/plate
1	Ready meats including poultry	15	0	4	0
2	Ready to reheat products and delicatessen	25	4	3	3
3	Dairy products	16	7	0	0
4	Fruits and vegetables	16	3	4	0
5	Seafood products	18	3	3	1
6	Pet food	16	10	3	0
7	Production environmental samples	17	5	0	0
All categories		123	32	17	4

*: CFU/plate < 4

N': Arithmetic average (only one dilution available for calculation).

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

Table 4 - Samples which were not used in the calculations

Sample N°	Product (in French)	Product	Reference method ISO 4833-1*	Alternative method: TEMPO AC				
				Incubation time				
				24h	40h	48h	24h + 48h	48h + 48h
2628	Viande pour animaux	Raw meat for pet	7.36 N'	/	>6.69	>6.69	/	>6.69
2630	Saucisson pour chien	Sausage for dog	<1.00	/	1.26	1.26	/	1.26
2768	Légumes IV Gamme: chou, carotte, céleri	Vegetables mix	6.96	>6.69	>6.69	>6.69	>6.69	>6.69
2769	Légumes IV Gamme: chou, carotte, poivrons	Vegetables mix	7.22	>6.69	>6.69	>6.69	>6.69	>6.69
2773	Salade de thon Pommes de terre	Deli salad	6.47	/	>6.69	>6.69	/	>6.69
2776	Lait demi-écrémé pasteurisé	Pasteurized milk	<1.00	/	<1.00	<1.00	/	2.65
2777	Lait entier pasteurisé	Pasteurized milk	<1.00	/	1.00	1.00	/	1.80
2819	Pulpe d'ananas	Pineapple pulp	<1.00	<1.00	<1.00	<1.00	<1.00	1.64
2820	Pulpe de fruits de la passion	Passion fruit pulp	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
2821	Pulpe de poire Williams	Pear pulp	3.63	<1.00	<1.00	1.48	<1.00	1.60
2823	Emincés de saumon fumé: aneth, citron	Marinated salmon	1.59*	/	2.00	2.00	/	2.00

 ♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

Sample N°	Product (in French)	Product	Reference method ISO 4833-1*	Alternative method: TEMPO AC				
				Incubation time				
				24h	40h	48h	24h + 48h	48h + 48h
2826	Dos de cabillaud	Cod	>7.48	/	>7.69	>7.69	/	>7.69
2930	Saumon fumé	Smoked salmon	<2.00	/	<2.00	<2.00	/	<2.00
2931	Truite fumée	Smoked truite	<2.15	/	<2.00	<2.00	/	<2.00
3128	Poussières dessus bloc électrique usine poisson	Dusts (Fish industry)	<4.00	<3.00	<3.00	<3.00	<3.00	<3.00
3131	Eau de rinçage du Stéphan, fabrication crème dessert	Process water (Dairy industry)	<4.00	<3.00	<3.00	<3.00	<3.00	<3.00
3132	Chiffonnette balance, fabrication crème dessert	Wipe (Dairy industry)	3.08	<1.00	2.09	2.24	<1.00	2.37
3278	Salade de thon	Tuna deli salad	7.61 N'	7.69	7.40	>7.69	7.69	>7.69
3279	Riz au lait	Rice pudding	<2.15	/	<2.00	<2.00	/	<2.00
3281	Brizures de riz	Broken rice	6.67	/	>6.69	>6.69	/	>6.69
3412	Jeunes pousses d'épinards	Spinach baby leaves	8.37	>7.69	>7.69	>7.69	>7.69	>7.69
3413	Mélange de salade	Produce mix	>8.48	>7.69	>7.69	>7.69	>7.69	>7.69
3416	Saucisson pour chien	Sausage for dog	<1.00	/	<1.00	<1.00	/	<1.00
3530	Chiffonnette atelier saucisserie	Wipe (Delicatessen industry)	<2.00	<2.00	<2.00	<2.00	<2.00	2.00
3919	Lait pasteurisé entier	Pasteurized milk	<0	/	<1.00	<1.00	/	<1.00
3920	Lait pasteurisé 1/2 écrémé	Pasteurized milk	<0	/	<1.00	<1.00	/	<1.00
3921	Lait frais 1/2 écrémé	Pasteurized milk	0.5*	/	<1.00	<1.00	/	<1.00
3922	Tendres bouchées en gelée	Balls for pet	<1.00	/	<1.00	<1.00	/	<1.00
3925	Viande bovine pour animaux	Raw meat for pet	7.58	/	>7.69	>7.69	/	>7.69
4003	Lait frais 1/2 écrémé	Pasteurized milk	0.65*	/	<1.00	<1.00	/	2.52
4004	Croquettes pour chien	Croquettes for dog	<1.00	/	<1.00	<1.00	/	<1.00
4005	Croquettes pour chien	Croquettes for dog	1.15*	/	<1.00	<1.00	/	<1.00
4093	Lingette table découpe en cours de process	Wipe	4.23	<3.16	4.41	4.45	4.19	4.47
5252	Escalope de veau	Veal meat	6.51	>6.69	>6.69	>6.69	>6.69	>6.69
5356	Timbale de Saint Jacques	Ready to reheat scallops	2.10	<3.00	<3.00	<3.00	<3.00	<3.00
18	Cuisse de dinde	Turkey meat	8.92	>7.69	>7.69	>7.69	>7.69	>7.69
19	Viande bourguignon	Beef meat	7.54	>6.69	>6.69	>6.69	>6.69	>6.69
20	Viande d'agneau	Lamb meat	7.15	>6.69	>6.69	>6.69	>6.69	>6.69
21	Bœuf bourguignon	Ready to reheat beef meat	<2.00	<1.00	1.76	1.76	<1.00	1.76

Sample N°	Product (in French)	Product	Reference method ISO 4833-1 *	Alternative method: TEMPO AC				
				Incubation time				
				24h	40h	48h	24h + 48h	48h + 48h
22	Poulet au curry	Ready to reheat chicken	2.00*	1.86	1.32	1.32	1.93	1.51
23	Jambon de Bayonne	Bayonne ham	3.96*	/	4.15	4.23	/	4.23
24	Merguez	Merguez	7.90	/	>7.69	>7.69	/	>7.69
137	Terrine pour chat (saumon)	Terrine for cat	1.00*	/	<1.00	<1.00	/	<1.00
138	Terrine pour chat (lapin)	Terrine for cat	<1.00	/	<1.00	<1.00	/	<1.00
139	Terrine pour chien (volaille)	Terrine for dog	<1.00	/	<1.00	<1.00	/	<1.00
1206	Bœuf aux oignons	Ready to reheat beef meat	5.04	>5.69	>5.69	>5.69	>5.69	>5.69
1209	Pâté pour chat (en sachet)	Pâté for cat	<1.00	/	<1.00	<1.00	/	<1.00
1210	Pâté pour chat (en sachet)	Pâté for cat	<1.00	/	<1.00	<1.00	/	<1.00
5960	Pizza poulet/ananas	Pizza chicken/pineapple	>6.18	>6.69	>6.69	>6.69	>6.69	>6.69
5962	Poulet basquaise	Basquaise chicken	<1.00	<1.00	1.00	1.00	<1.00	1.00
5963	Poulet sauce aigre-douce	Sweet and sour chicken	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
5964	Porc au caramel	Pork with caramel sauce	1.00*	1.32	1.00	1.00	1.32	1.16
5967	Coquillettes poulet/jambon/champignon	Pasta with chicken ham and mushroom	1.78 Ne	1.00	<1.00	1.00	1.00	1.00
6425	Paupiettes de veau sauce tomate	Veal meat with tomato sauce	<2.00	<2.00	3.32	2.00	2.00	2.32

3.1.2.4 Statistical interpretation

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

The Figures 1 to 7 shows the data plotted for each category.

The Figure 8 shows the data plotted for all the products.

Figure 1 - Data plotted for the Raw meats including poultry

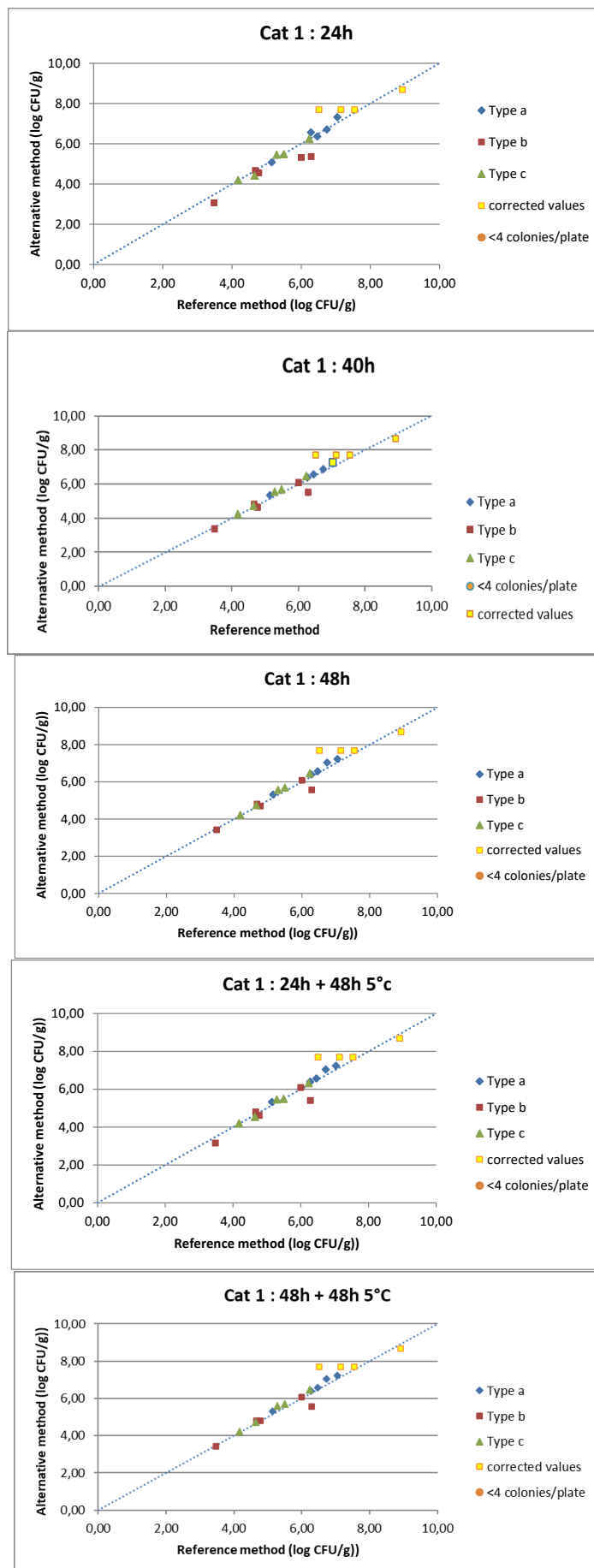


Figure 2- Data plotted for **Ready to reheat products and delicatessen**

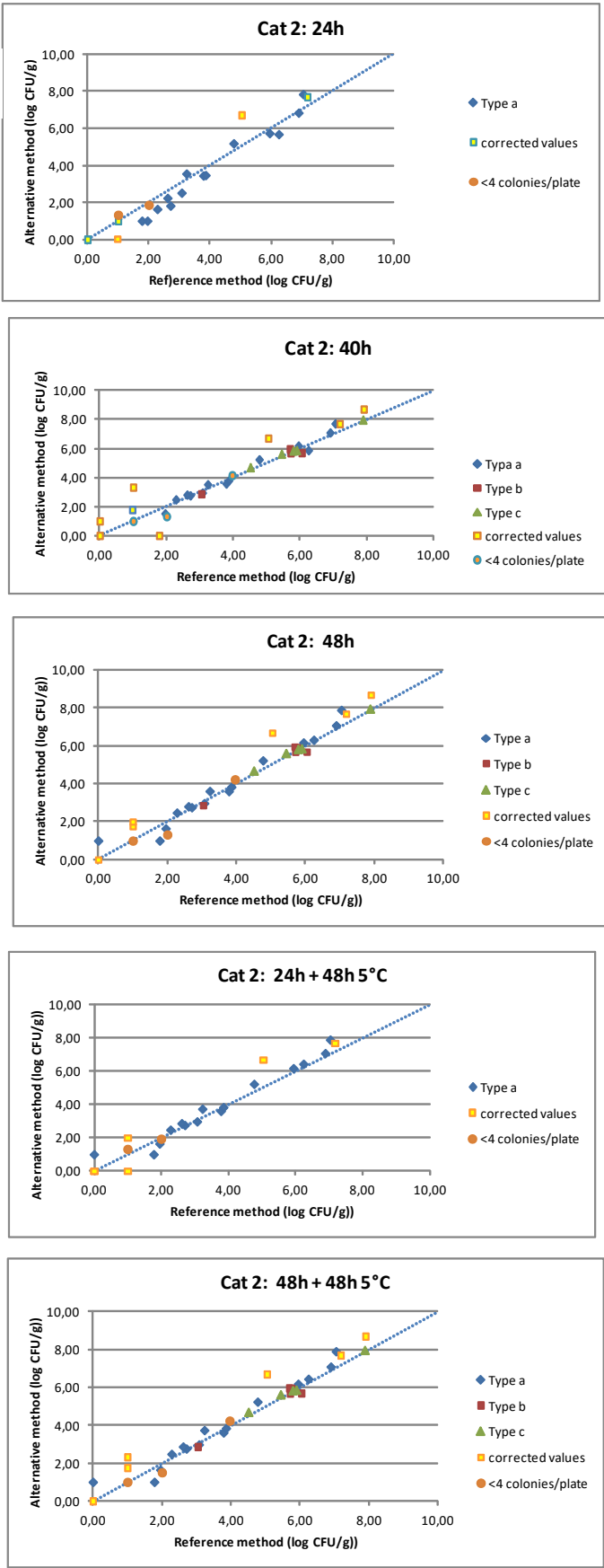


Figure 3- Data plotted for Dairy products

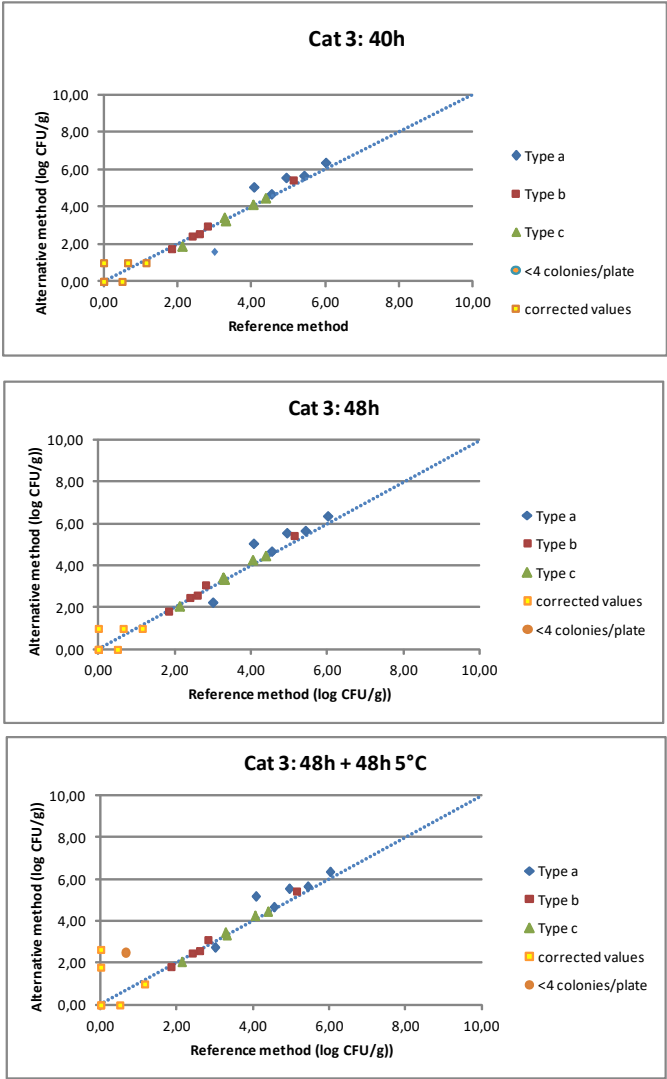


Figure 4- Data plotted for **Fruits and vegetables**

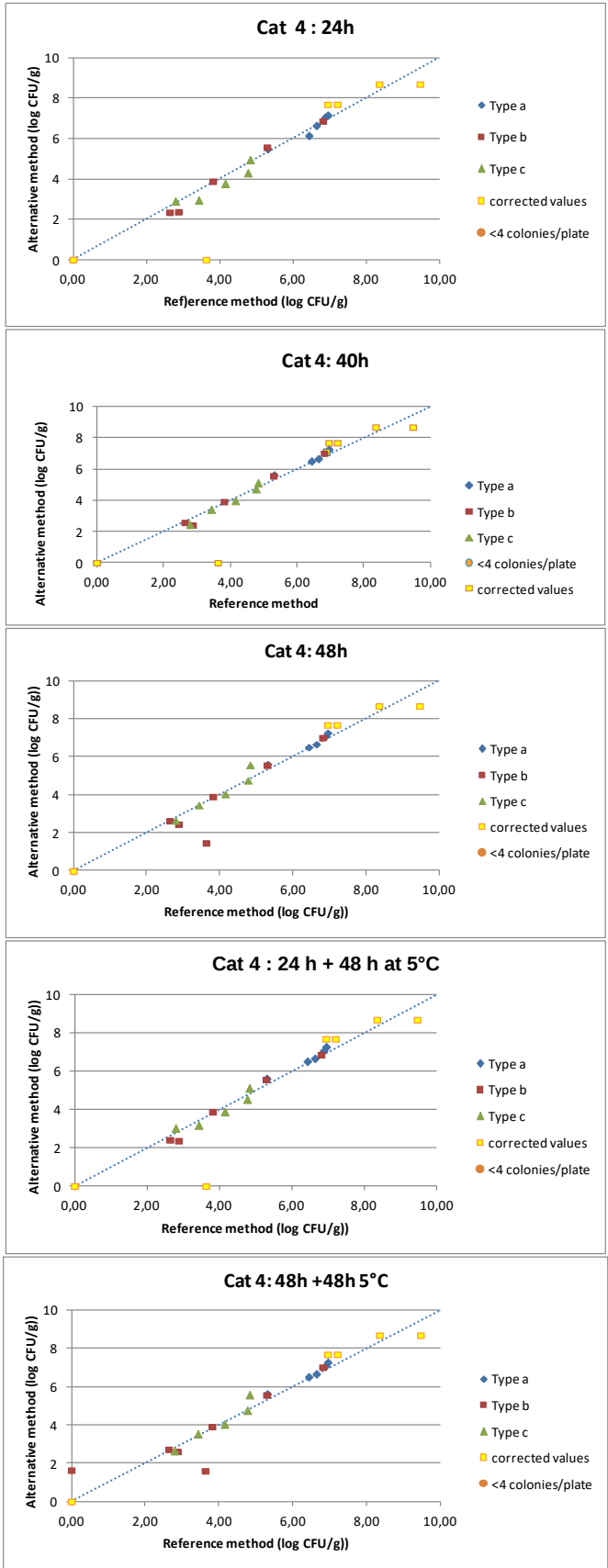


Figure 5- Data plotted for **Seafood products**

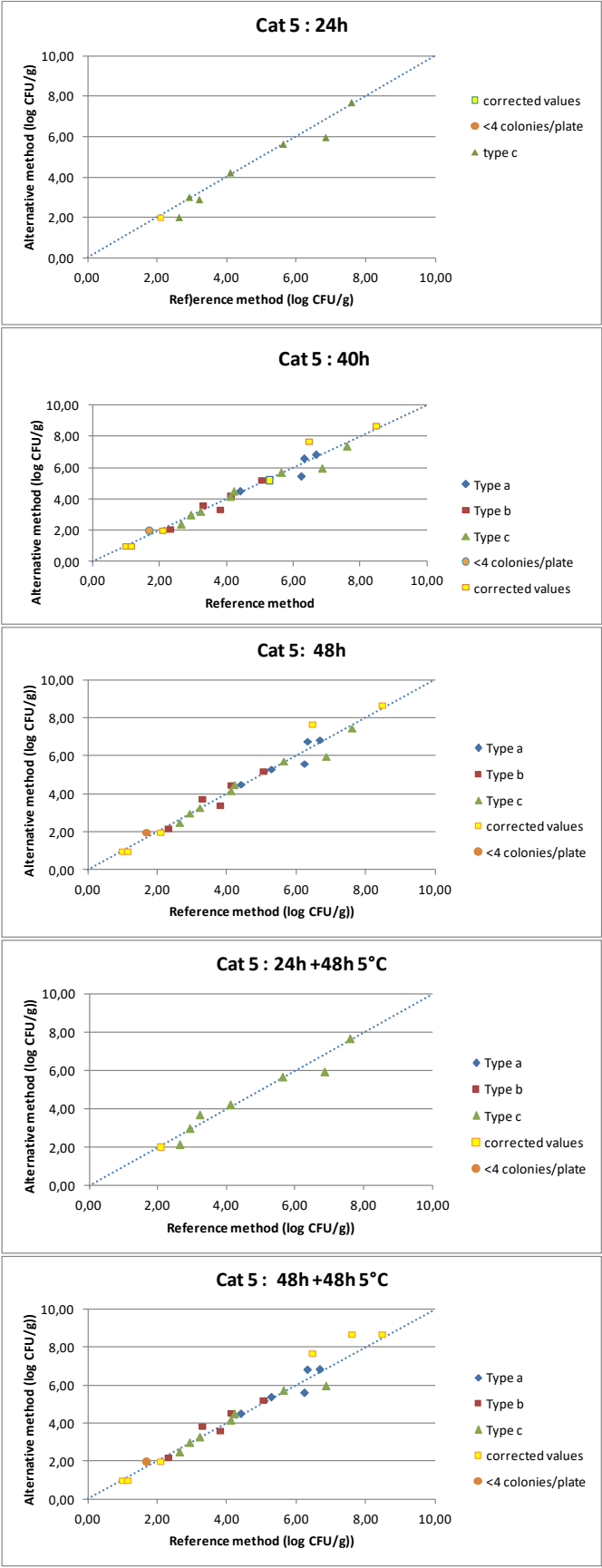


Figure 6 - Data plotted for **Pet food**

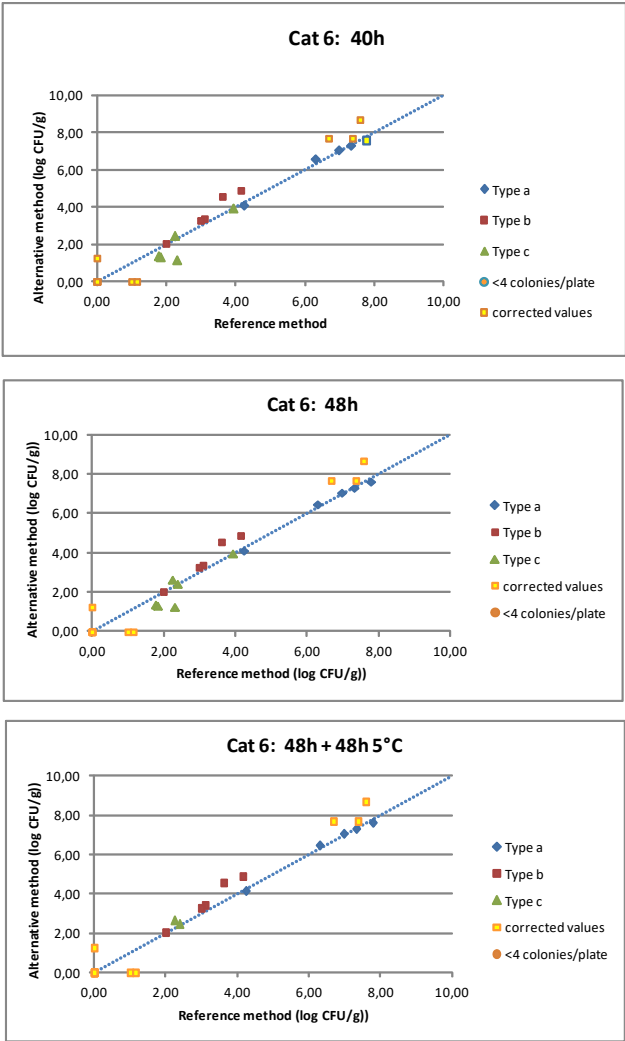


Figure 7 - Data plotted for **Production environmental samples**

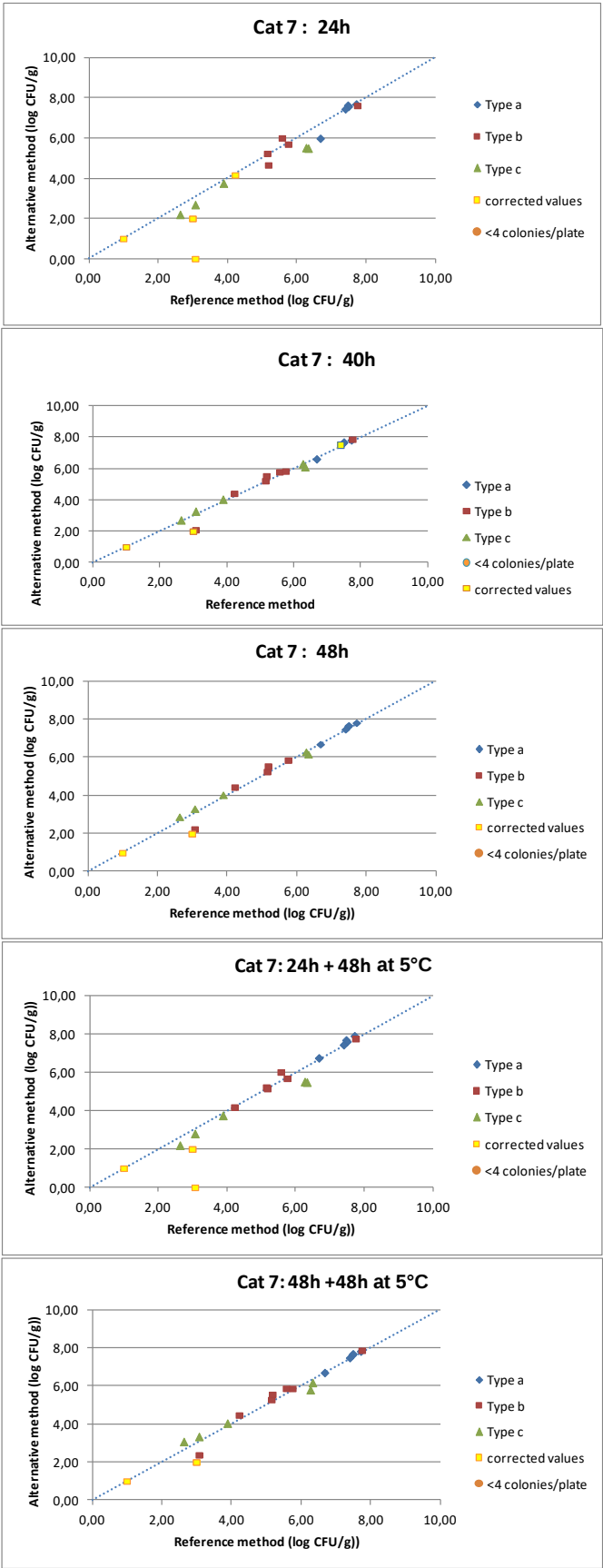
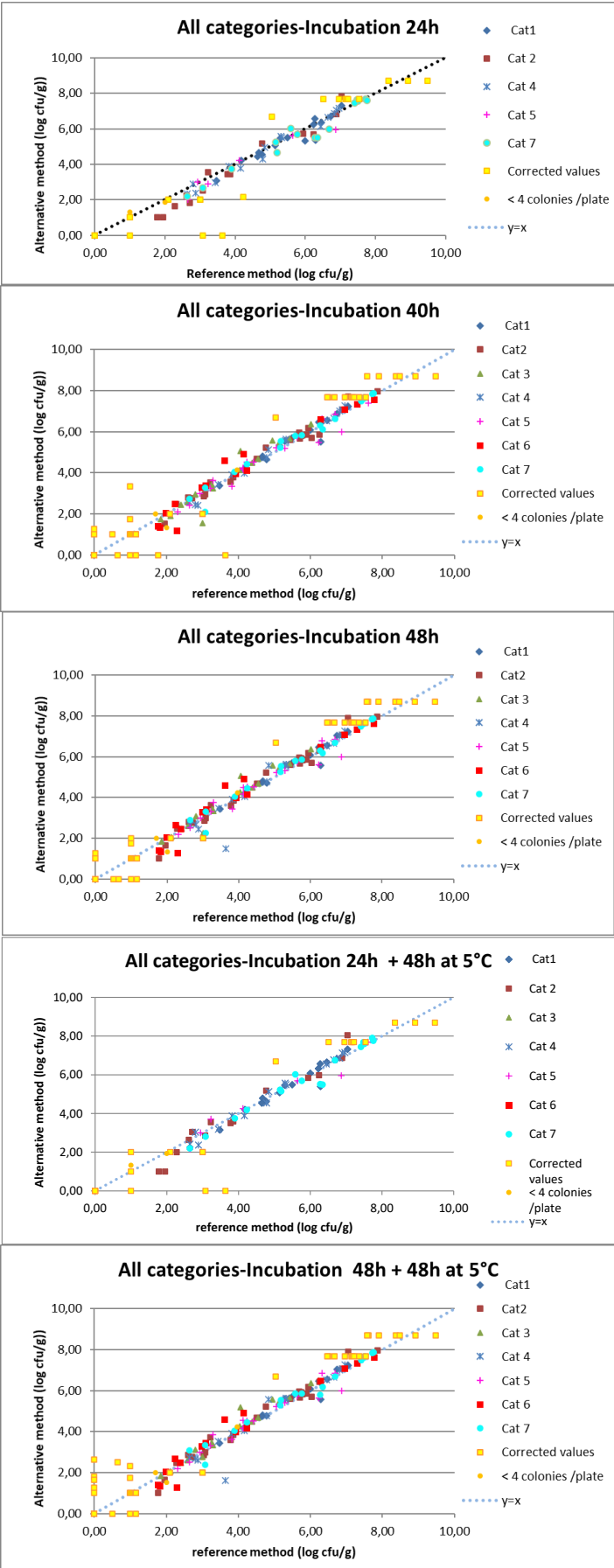


Figure 8 - Data plotted for **all the products**



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

Table 5 - Calculated values per category and incubation time

Incubation time	Category		n	$\bar{D}$ (Bias)	SD	95% lower limit	95% upper limit
24h	1	Raw meats including poultry	15	-012	0.33	-0.87	0.62
	2	Ready to reheat products and delicatessen	14	-0.31	0.51	-1.45	0.84
	3	Dairy products	/	/	/	/	/
	4	Fruits and vegetables	15	-0.09	0.28	-0.72	0.54
	5	Seafood products	7	-0.24	0.40	-1.30	0.82
	6	Pet food	/	/	/	/	/
	7	Production environmental samples	15	-0.19	0.38	-1.03	0.65
	All categories		66	-0.19	0.38	-0.96	0.58
40h	1	Raw meats including poultry	15	0.05	0.25	-0.50	0.61
	2	Ready to reheat products and delicatessen	23	0.06	0.26	-0.49	0.61
	3	Dairy products	16	0.09	0.51	-1.02	1.20
	4	Fruits and vegetables	15	0.04	0.23	-0.48	0.56
	5	Seafood products	18	-0.07	0.35	-0.82	0.68
	6	Pet food	15	0.04	0.50	-1.07	1.15
	7	Production environmental samples	17	0.04	0.29	-0.60	0.67
	All categories		119	0.03	0.35	-0.65	0.72
48h	1	Raw meats including poultry	15	0.08	0.24	-0.47	0.62
	2	Ready to reheat products and delicatessen	24	0.07	0.31	-0.59	0.72
	3	Dairy products	16	0.18	0.36	-0.62	0.97
	4	Fruits and vegetables	16	-0.04	0.62	-1.40	1.32
	5	Seafood products	17	0.01	0.36	-0.78	0.79
	6	Pet food	16	0.06	0.47	-0.98	1.09
	7	Production environmental samples	17	0.07	0.26	-0.50	0.64
	All categories		121	0.06	0.38	-0.70	0.82
24h + 48h 5°C	1	Raw meats including poultry	15	-0.01	0.29	-0.66	0.63
	2	Ready to reheat products and delicatessen	14	-0.08	0.49	-1.18	1.02
	3	Dairy products	/	/	/	/	/
	4	Fruits and vegetables	15	0.01	0.25	-0.54	0.56
	5	Seafood products	7	-0.09	0.46	-1.29	1.12
	6	Pet food	/	/	/	/	/
	7	Production environmental samples	16	-0.09	0.34	-0.84	0.65
	All categories		67	-0.05	0.36	-0.76	0.60
48h + 48h 5°C	1	Raw meats including poultry	15	0.08	0.24	-0.46	0.62
	2	Ready to reheat products and delicatessen	24	0.08	0.32	-0.60	0.75
	3	Dairy products	16	0.22	0.32	-0.47	0.91
	4	Fruits and vegetables	16	-0.01	0.59	-1.30	1.27
	5	Seafood products	17	0.04	0.36	-0.76	0.83
	6	Pet food	16	-0.04	0.39	-0.89	0.80
	7	Production environmental samples	17	0.07	0.29	-0.56	0.70
	All categories		121	0.06	0.37	-0.66	0.79

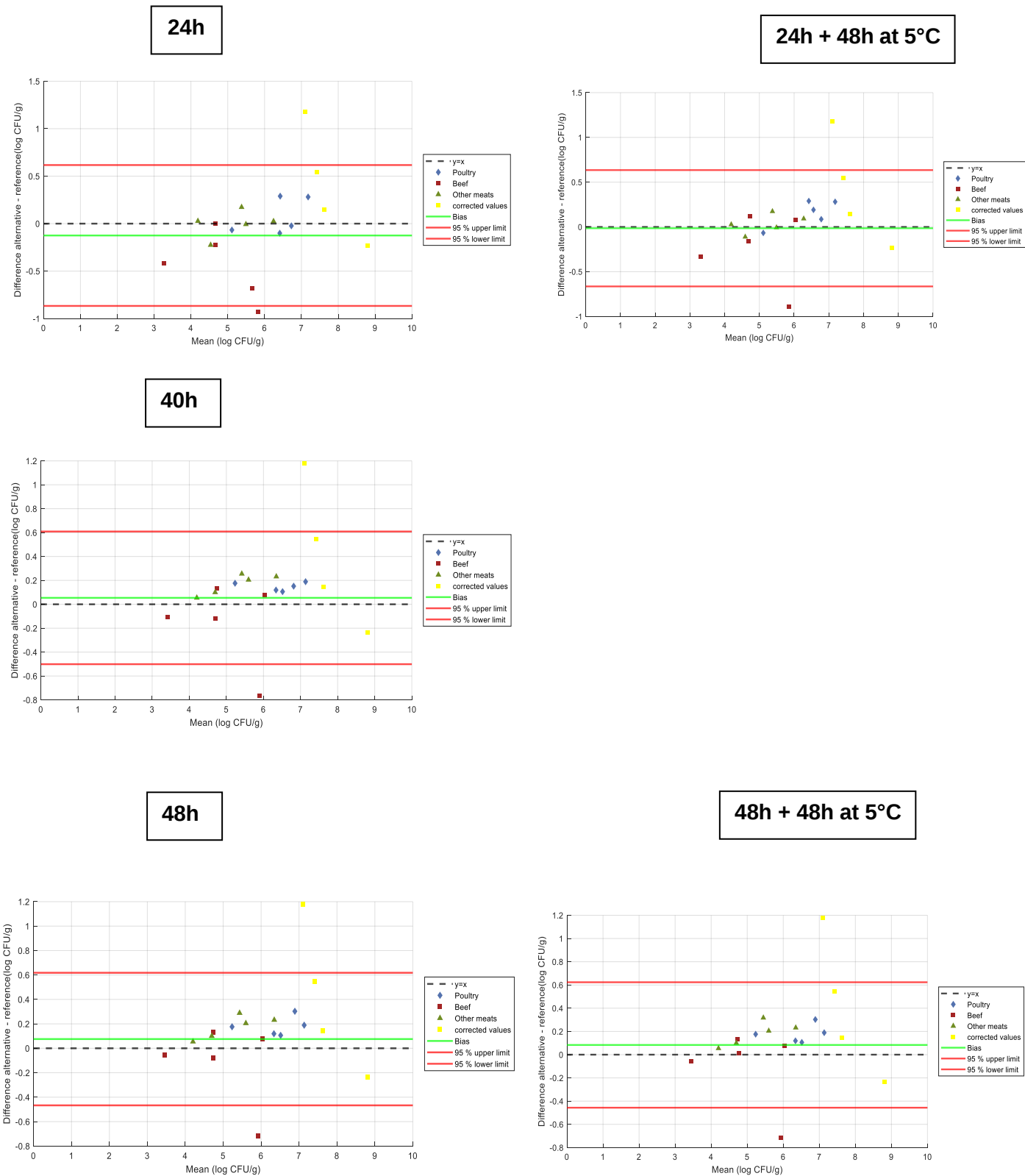
$\bar{D}$: Average difference

SD: Standard deviation of differences

The average difference observed between the two methods varies from - 0.31 to - 0.09 log for 24 h incubation time, between - 0.07 to 0.09 for 40 h incubation time and between - 0.04 to 0.18 log for 48 h incubation time.

The Bland-Altman difference plot per category and for all categories is given in the following figures.

Figure 9 – Bland-Altman difference plot for
Category 1 - Raw meats including poultry



**Figure 10 – Bland-Altman difference plot for
Category 2 - Ready-to-reheat products and delicatessen**

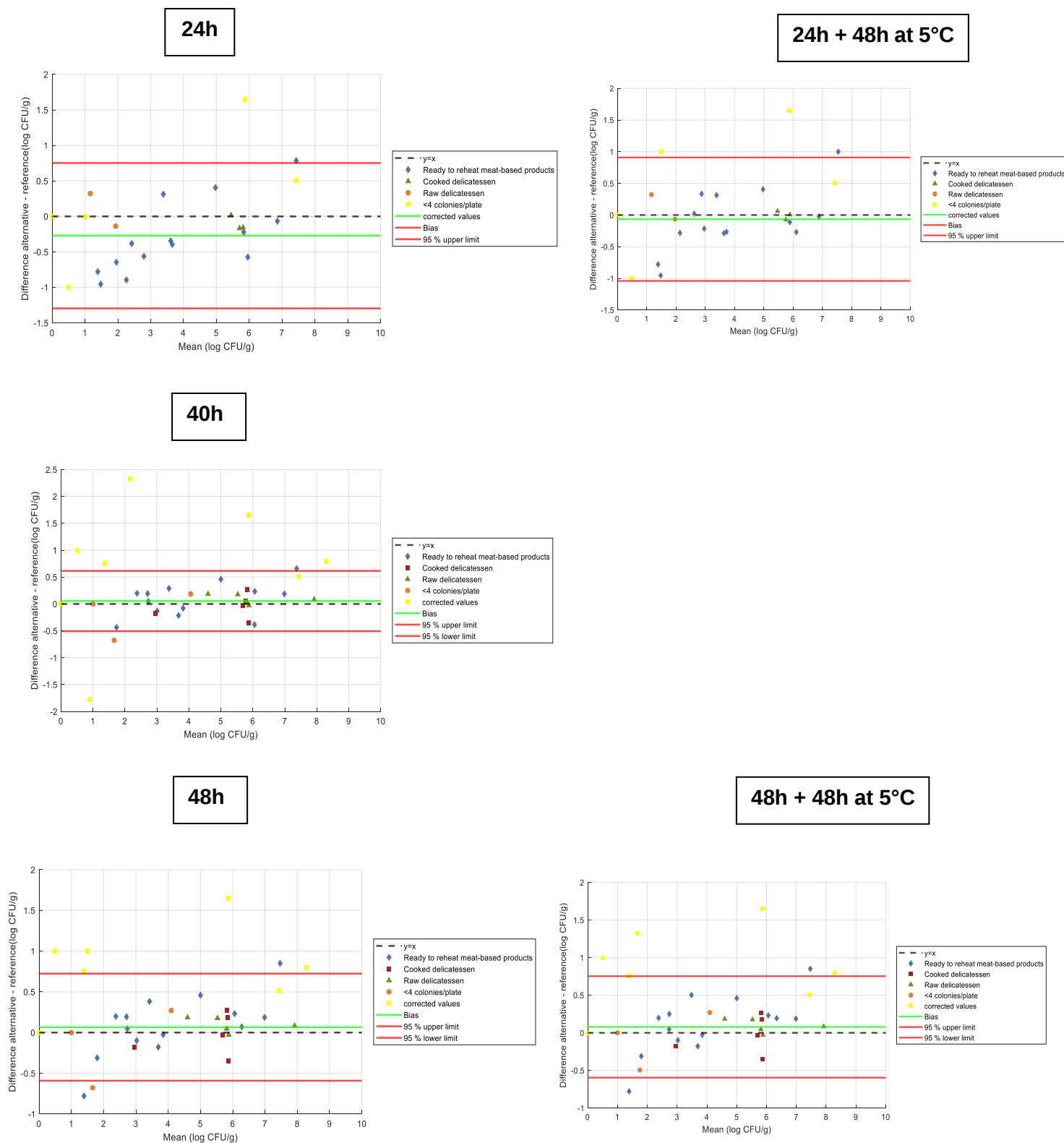


Figure 11 – Bland-Altman difference plot for
Category 3 - Dairy products

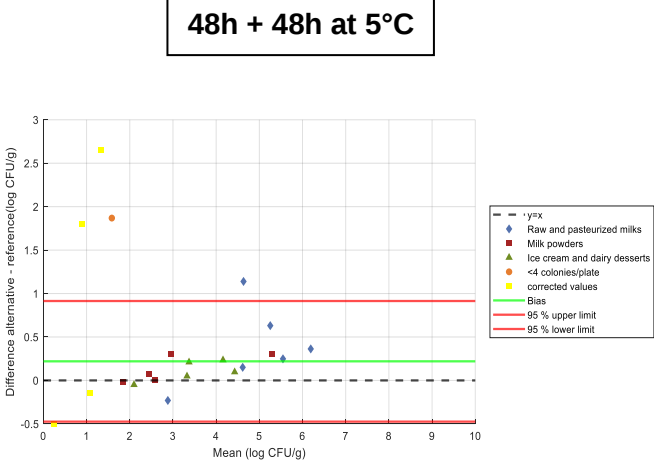
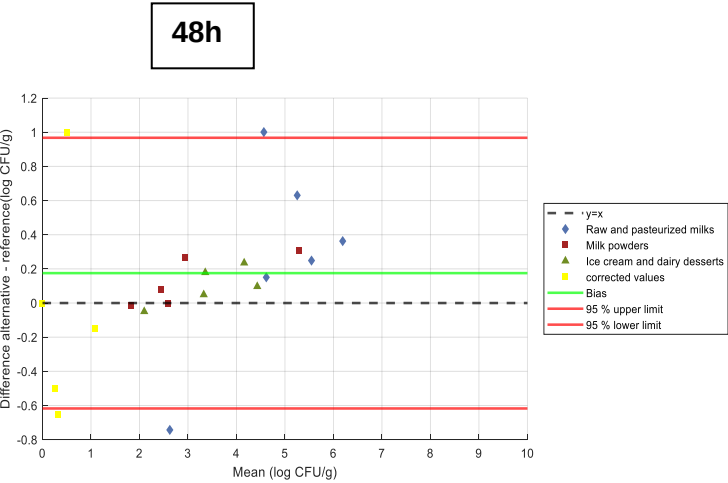
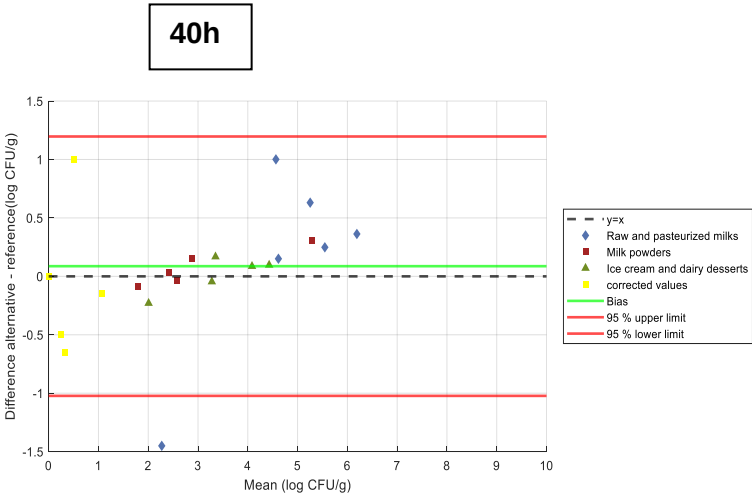
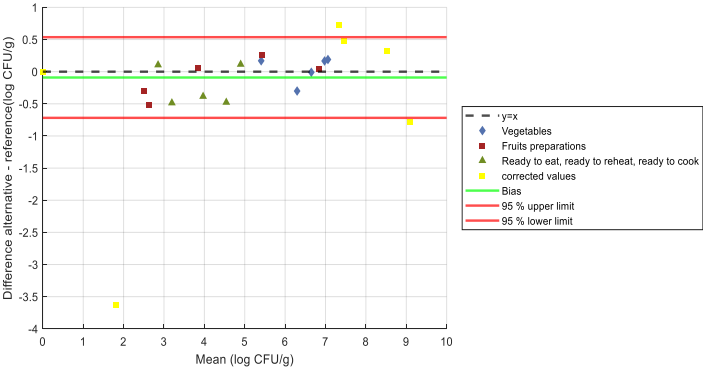
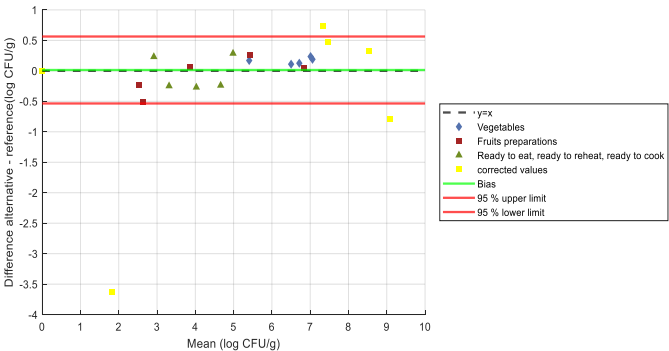


Figure 12 – Bland-Altman difference plot for
Category 4 - Fruits and vegetables

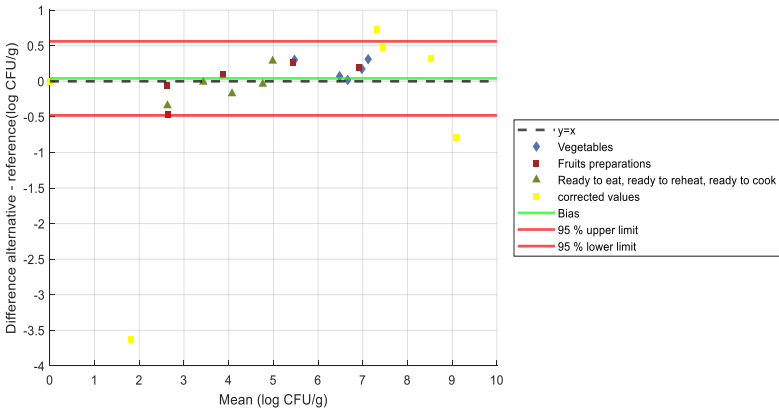
24h



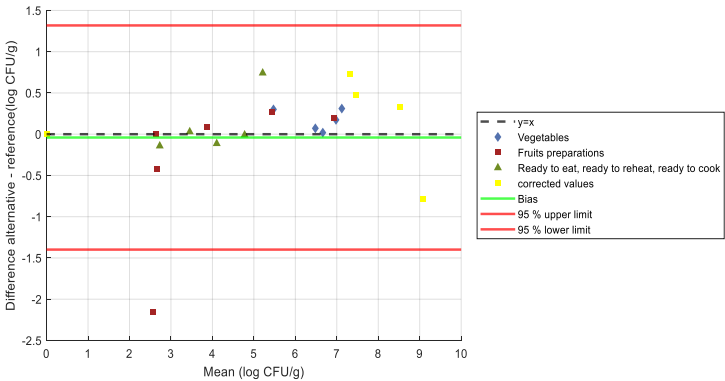
24h + 48h at 5°C



40h



48h



48h + 48h at 5°C

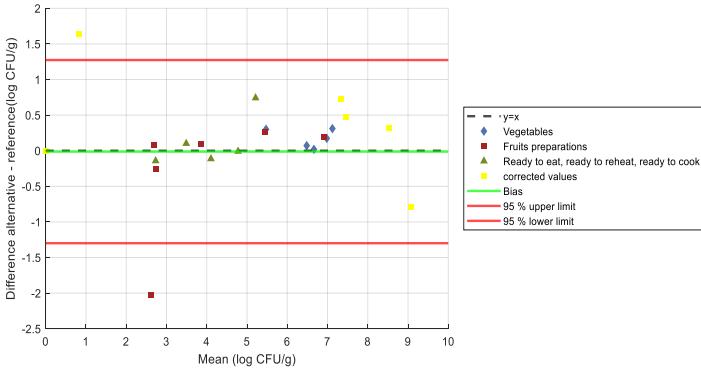
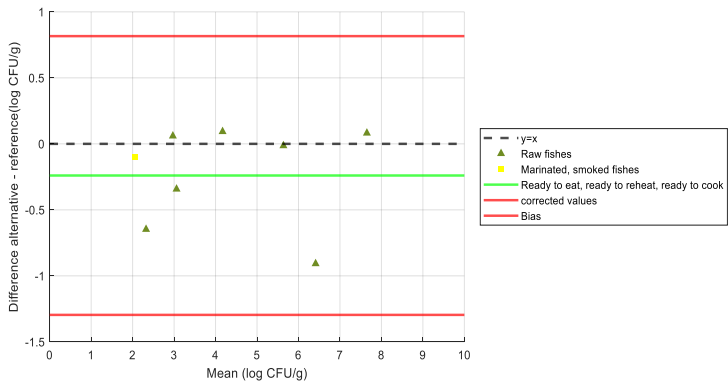
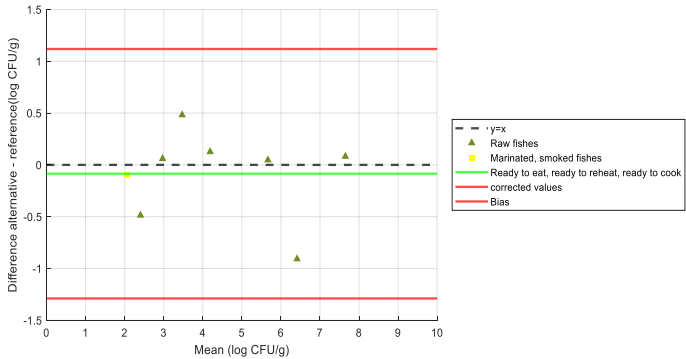


Figure 13 – Bland-Altman difference plot for
Category 5 - Seafood products

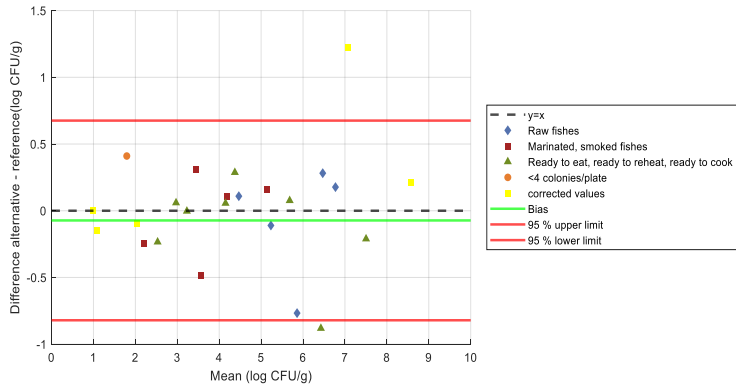
24h



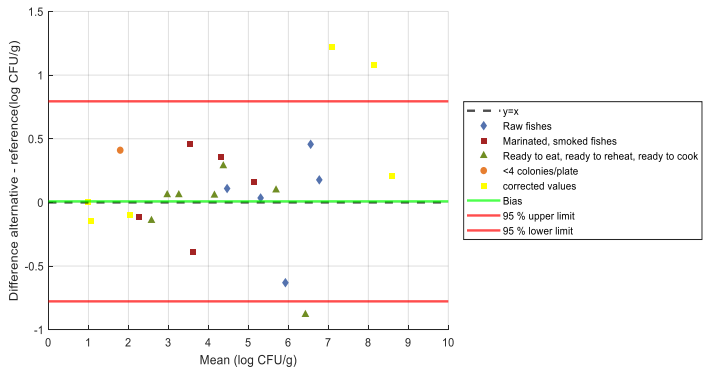
24h + 48h at 5°C



40h



48h



48h + 48h at 5°C

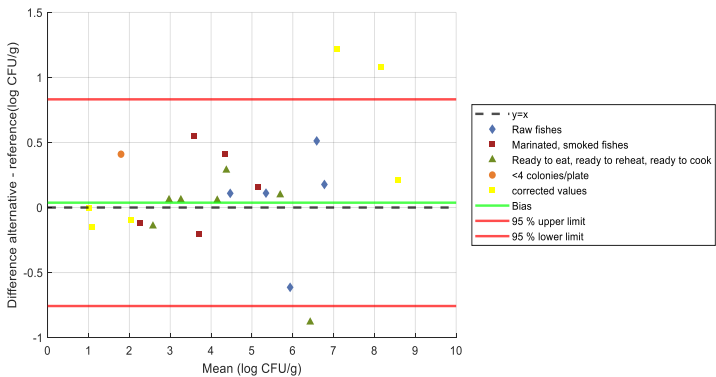


Figure 14 – Bland-Altman difference plot for
Category 6 - Pet food

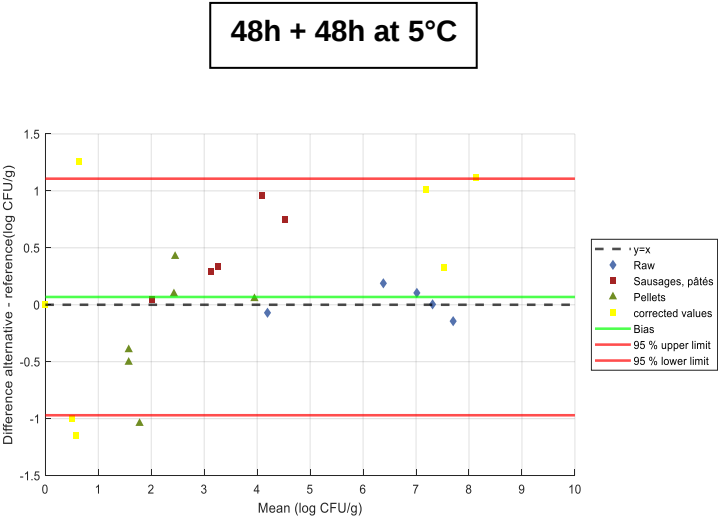
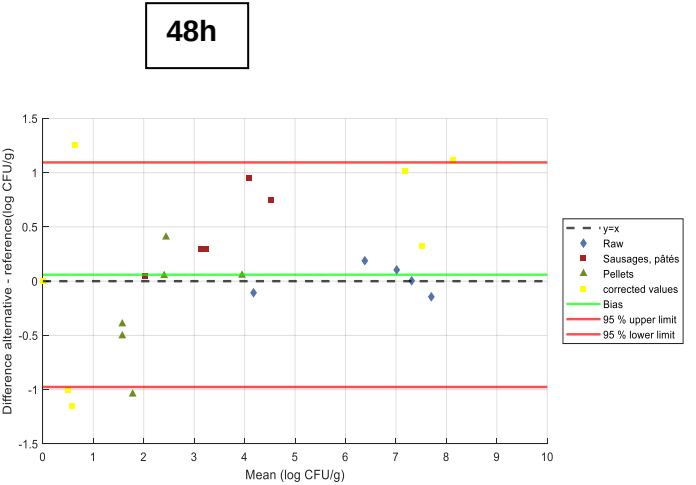
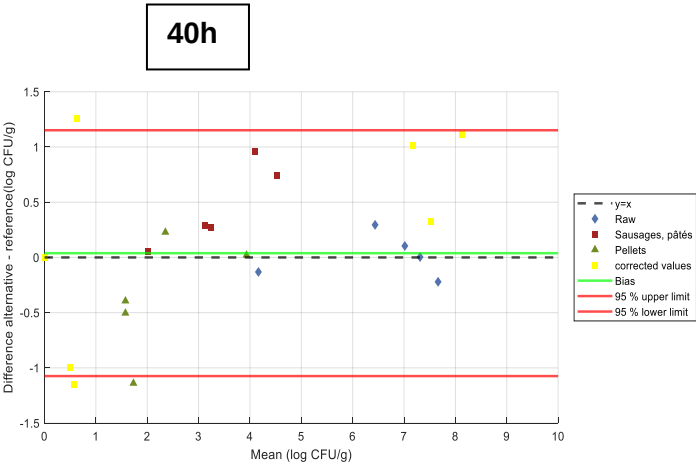
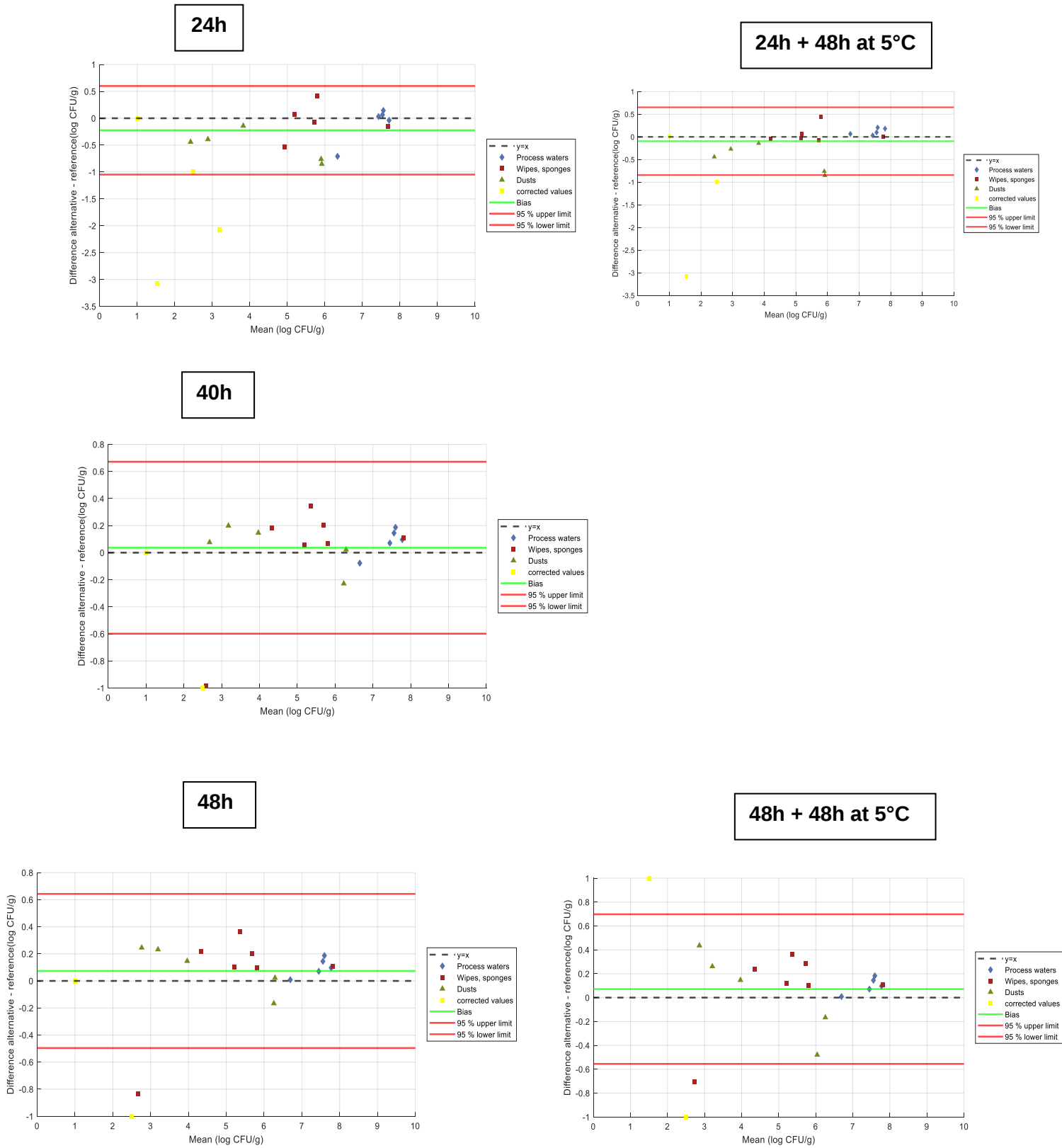


Figure 15 – Bland-Altman difference plot for
Category 7 – Production environmental samples

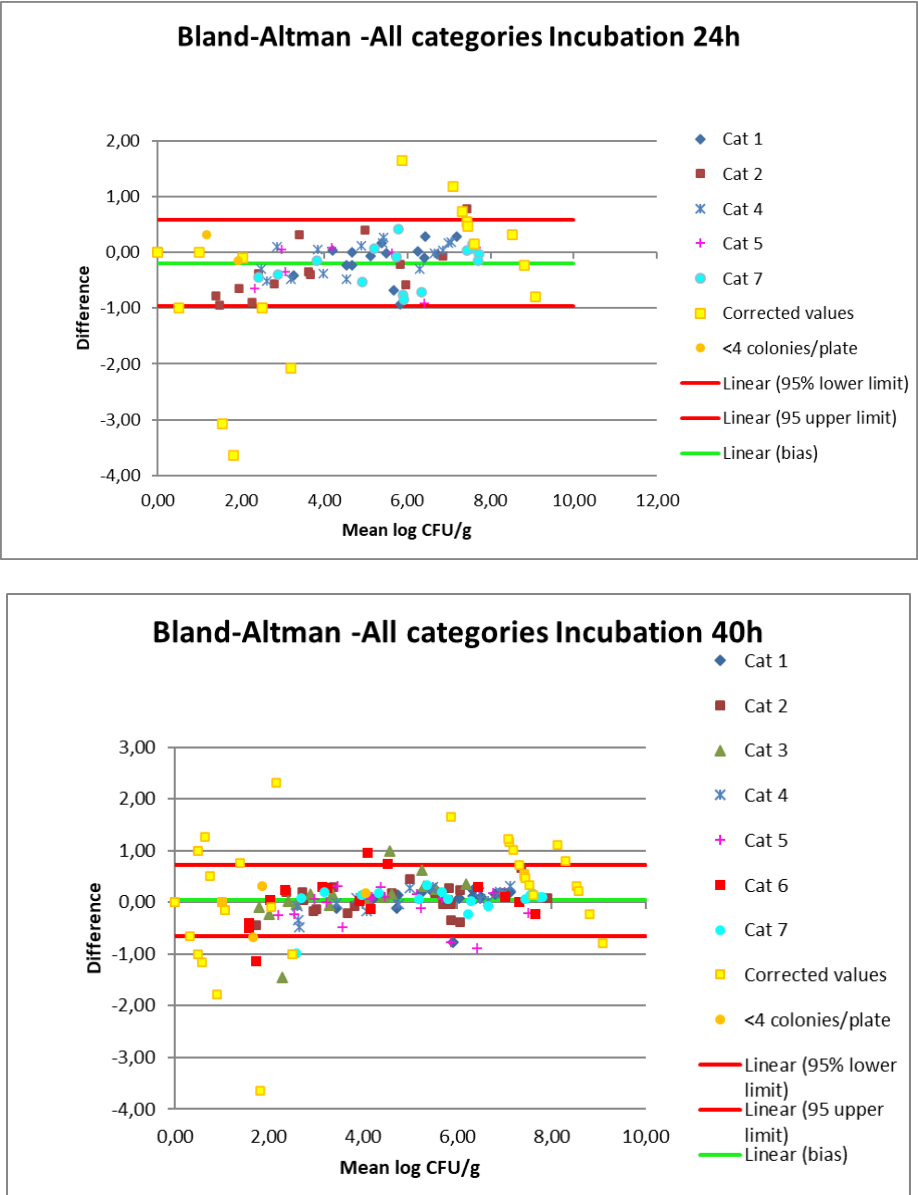


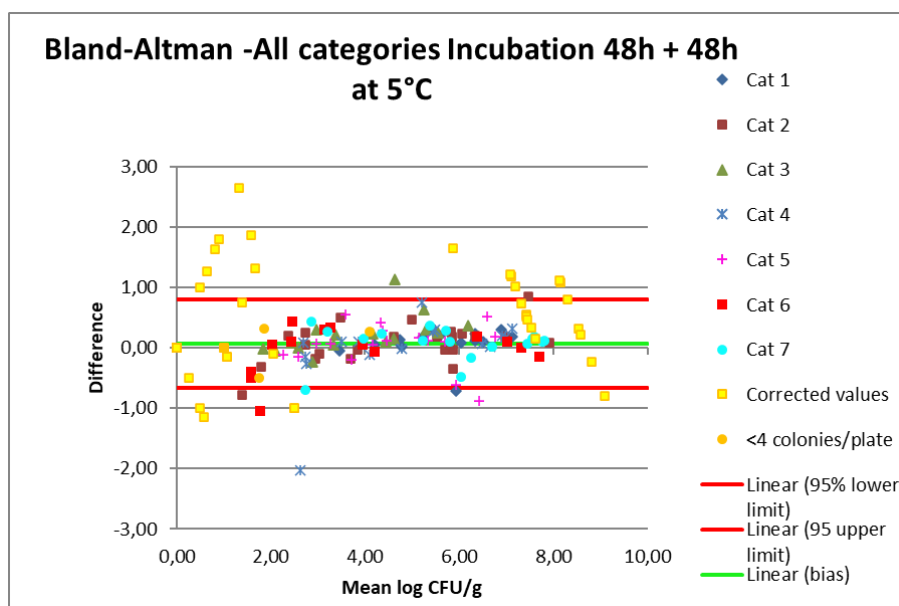
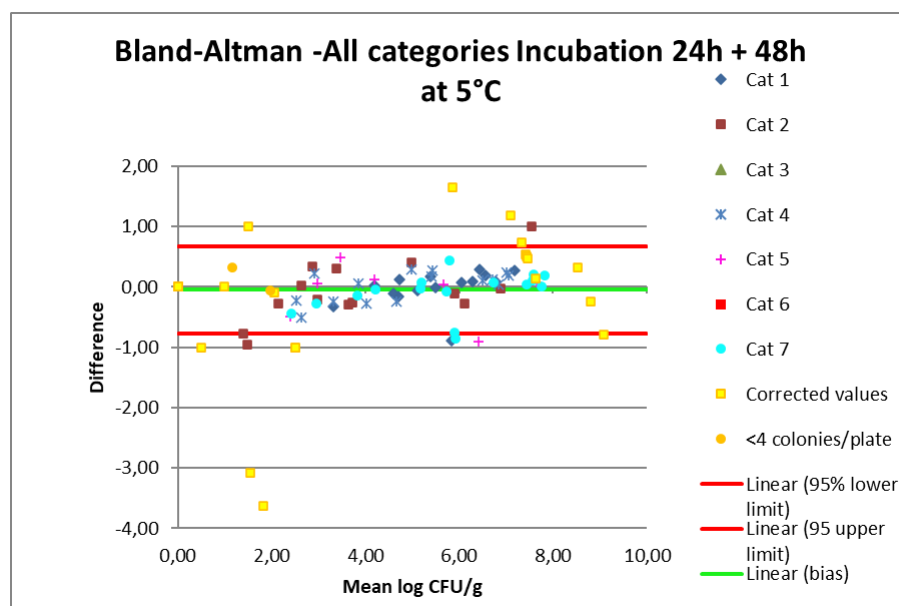
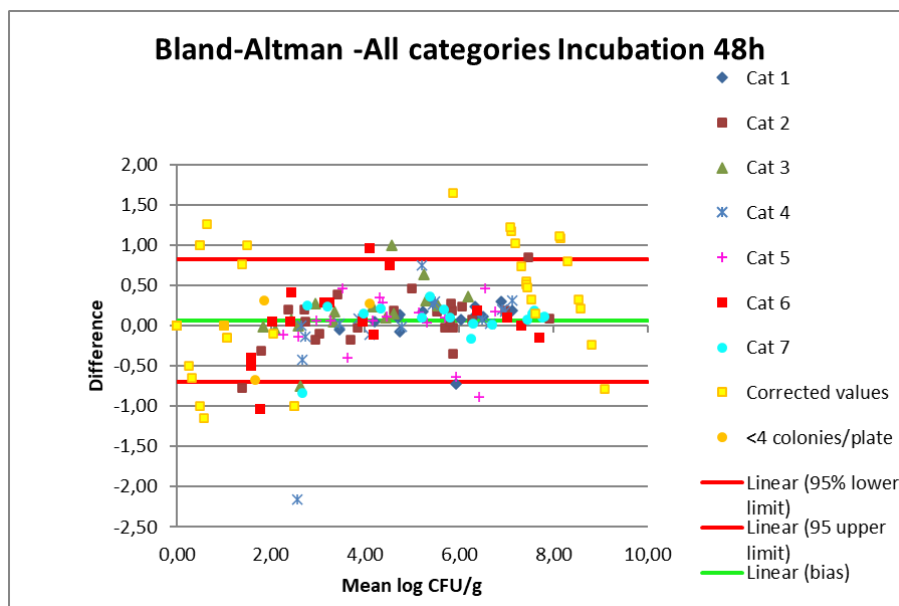
40h

48h

48h + 48h at 5°C

Figure 16 – Bland-Altman difference plot for
all the samples





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

Table 6 - Disagreements observed between the reference and the alternative methods

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

Values in **green**: differences in favor of the alternative method
 Values in **red**: differences in favor of the reference method

Categories	
1	Raw meats including poultry
2	Ready to reheat products and delicatessen
3	Dairy products
4	Fruits and vegetables
5	Seafood products
6	Pet food
7	Production environmental samples

Classification of data	Incubation: 24h									
	Category	Type	N° Sample	Reference method	Alternative method	Values before correction (Reference or/and alternative method)	Mean	Difference	Lower / Upper limits	Comments
Interpretable results by both methods	2	a	6424	7.04	7.83	/	7.83	0.78	-0.96/0.58	/
< or > the quantification limit	1	c	5252	6.51	7.69	>6.69	7.10	1.18		Above the quantification limit
	2	a	1206	5.04	6.69	>5.69	5.87	1.65		Above the quantification limit
	4	b	2821	3.63	0.00	<1.00	1.82	-3.63		Moulds enumerated on PCA
	4	a	2768	6.96	7.69	>6.69	7.32	0.73		Above the quantification limit
	7	b	3132	3.08	0.00	<1.00	1.54	-3.08		<i>Staphylococcus</i> , <i>Curtobacterium</i> , <i>Paracoccus</i>
	7	b	4093	4.23	2.16	<3.16	3.20	-2.07		Below the quantification limit

Classification of data	Incubation: 40h									
	Category	Type	N° Sample	Reference method	Alternative method	Values before correction (Reference or/and alternative method)	Mean	Difference	Lower / Upper limits	Comments
Interpretable results by both methods	1	b	2625	6.29	5.52	/	5.90	-0.76	-0.65/0.72	/
	3	a	3138	3.00	1.55	/	2.27	-1.45		Identification on PCA: <i>Kocurui, Microbacterium, Bacillus</i>
	3	a	3420	4.06	5.07	/	4.56	1.00		/
	5	a	2935	6.24	5.47	/	5.86	-0.77		µcolonies on PCA: <i>Psychrobacter</i>
	5	c	2926	6.87	5.99	/	6.43	-0.88		µcolonies on PCA: <i>Carnobacterium, Leuconostoc, Psychrobacter</i>
	6	b	1409	3.61	4.57	/	4.09	0.96		/
	6	b	1410	4.15	4.89	/	4.52	0.74		/
	6	c	3136	2.30	1.16	/	1.73	-1.14		/
	7	b	3132	3.08	2.09	/	2.59	-0.98		/
	1	c	5252	6.51	7.69	>6.69	7.10	1.18		Above the quantification limit
< or > the quantification limit	2	a	21	1.00	1.76	<2.00	1.38	0.76		Below the quantification limit
	2	a	1206	5.04	6.69	>5.69	5.87	1.65		Above the quantification limit
	2	a	5962	0.00	1.00	<1.00	0.50	1.00		Below the quantification limit
	2	a	5967	1.78	0.00	<1.00	0.89	-1.78		Below the quantification limit
	2	a	6425	1.00	3.32	<2.00	2.16	2.32		/
	2	c	24	7.90	8.69	>7.69	8.29	0.79		Above the quantification limit
	3	a	2776	0.00	1.00	<1.00	0.50	1.00		Below the quantification limit
	4	a	2768	6.95	7.69	>6.69	7.32	0.74		Above the quantification limit
	4	a	3413	9.48	8.69	>8.69/>7.69	9.09	-0.79		Above the quantification limit
	4	b	2821	3.63	0.00	<1.00	1.82	-3.63		Moulds enumerated on PCA
	5	c	2773	6.47	7.69	>6.69	7.08	1.22		Above the quantification limit
	6	a	3925	7.58	8.69	>7.69	8.13	1.11		Above the quantification limit
	6	b	2630	0.00	1.26	<1.00	0.63	1.26		Below the quantification limit
	6	b	137	1.00	0.00	<1.00	0.50	-1.00		Below the quantification limit
	6	c	3281	6.67	7.69	>6.69	7.18	1.02		Above the quantification limit
	6	c	4005	1.15	0.00	<1.00	0.58	-1.15		Below the quantification limit
	7	a	3131	3.00	2.00	<2.00/<3.00	2.50	-1.00		Above the quantification limit
	7	c	3128	3.00	2.00	<4.00/<3.00	2.50	-1.00		Above the quantification limit

Classification of data	Incubation: 48h									
	Category	Type	N° Sample	Reference method	Alternative method	Values before correction (Reference or/and alternative method)	Mean	Difference	Lower / Upper limits	Comments
Interpretable results by both methods	1	b	2625	6.29	5.57	/	5.93	-0.72		/
	2	a	5967	1.78	1.00	/	1.39	-0.78		/
	2	a	6424	7.04	7.89	/	7.47	0.85		/
	3	a	3138	3.00	2.25	/	2.63	-0.74		/
	3	a	3420	4.06	5.07	/	4.56	1.00		/
	4	b	2821	3.63	1.48	/	2.56	-2.16		Moulds enumerated on PCA µcolonies on PCA: <i>Carnobacterium</i> , <i>Leuconostoc</i> , <i>Psychrobacter</i>
	5	c	2926	6.87	5.99	/	6.43	-0.88		/
	6	b	1409	3.61	4.57	/	4.09	0.96		/
	6	c	3136	2.30	1.26	/	1.78	-1.04		/
	<4 CFU/plate	7	b	3132	3.08	2.24	/	2.66		-0.83
< or > the quantification limit	1	c	5252	6.51	7.69	>6.69	7.10	1.18	-0.70/0.82	Above the quantification limit
	2	a	1206	5.04	6.69	>5.69	5.87	1.65		Above the quantification limit
	2	a	5962	0.00	1.00	<1.00	0.50	1.00		Below the quantification limit
	2	a	6425	1.00	2.00	<2.00	1.50	1.00		Below the quantification limit
	3	a	2777	0.00	1.00	<1.00	0.50	1.00		Below the quantification limit
	4	a	3413	9.48	8.69	>8.69/>7.69	9.09	-0.79		Above the quantification limit
	5	c	2773	6.47	7.69	>6.69	7.08	1.22		Above the quantification limit
	5	c	3278	7.61	8.69	>7.69	8.15	1.08		Above the quantification limit
	6	a	3925	7.58	8.69	>7.69	8.14	1.11		Above the quantification limit
	6	b	2630	0.00	1.26	<1.00	0.63	1.26		Below the quantification limit
	6	b	137	1.00	0.00	<1.00	0.50	-1.00		Below the quantification limit
	6	c	3281	6.67	7.69	6.69	7.18	1.02		Above the quantification limit
	6	c	4005	1.15	0.00	<1.00	0.58	-1.15		Below the quantification limit
	7	a	3131	3.00	2.00	<4.00/<3.00	2.50	-1.00		Above the quantification limit
	7	c	3128	3.00	2.00	<4.00/<3.00	2.50	-1.00		Above the quantification limit

Classification of data	Incubation: 24h + 48h									
	Category	Type	N° Sample	Reference method	Alternative method	Values before correction (Reference or/and alternative method)	Mean	Difference	Lower / Upper limits	Comments
Interpretable results by both methods	1	b	2625	6.29	5.40	/	5.84	-0.89	-0.76/0.67	/
	2	a	1994	1.95	1.00	/	1.48	-0.95		/
	2	a	6424	7.04	8.04	/	7.54	1.00		/
	5	c	2926	6.87	5.96	/	6.42	-0.91		/
	7	c	1408	6.34	5.49	/	5.92	-0.85		/
< or > the quantification limit	1	c	5252	6.51	7.69	>6.69	7.10	1.18		Above the quantification limit
	2	a	1206	5.04	6.69	>5.69	5.87	1.65		Above the quantification limit
	2	a	21	1.00	0.00	<2.00/<1.00	0.50	-1.00		Below the quantification limit
	2	a	6425	1.00	2.00	<2.00	1.50	1.00		Below the quantification limit
	4	a	2768	6.96	7.69	>6.69	7.33	0.73		Above the quantification limit
	4	a	3413	9.48	8.69	>8.69/>7.69	9.09	-0.79		Above the quantification limit
	4	b	2821	3.63	0.00	<1.00	1.82	-3.63		Moulds enumerated on PCA
	7	a	3131	3.00	2.00	<4.00/<3.00	2.50	-1.00		Below the quantification limit
	7	b	3132	3.08	0.00	<1.00	1.54	-3.08		Below the quantification limit
	7	c	3128	3.00	2.00	<4.00/<3.00	2.50	-1.00		Below the quantification limit

Classification of data	Incubation: 48h + 48h									
	Category	Type	N° Sample	Reference method	Alternative method	Values before correction (Reference or/and alternative method)	Mean	Difference	Lower / Upper limits	Comments
Interpretable results by both methods	1	b	2625	6.29	5.57	/	5.93	-0.72	-0.65/0.79	/
	2	a	5967	1.78	1.00	/	1.39	-0.78		/
	2	a	6424	7.04	7.89	/	7.47	0.85		/
	3	a	3420	4.06	5.20	/	4.63	1.14		/
	4	b	2821	3.63	1.60	/	2.62	-2.03		Moulds enumerated on PCA
	5	c	2926	6.87	5.99	/	6.43	-0.88		µcolonies on PCA: <i>Carnobacterium</i> , <i>Leuconostoc</i> , <i>Psychrobacter</i>
	6	c	3136	2.30	1.26	/	1.78	-1.04		/
	7	b	3132	3.08	2.37	/	2.73	-0.71		/
<4 CFU/plate	3	a	4003	0.65	2.52	/	1.59	1.87		Growth during storage?
< or > the quantification limit	1	c	5252	6.51	7.69	>6.69	7.10	1.18		Above the quantification limit
	2	a	1206	5.04	6.69	>5.69	5.87	1.65		Above the quantification limit
	2	a	5962	0.00	1.00	<1.00	0.50	1.00		Below the quantification limit
	2	a	6425	1.00	2.32	<2.00	1.66	1.32		Below the quantification limit
	3	a	2776	0.00	2.65	<1.00	1.32	2.65		Growth during storage?
	3	a	2777	0.00	1.80	<1.00	0.90	1.80		Below the quantification limit
	4	a	3413	9.48	8.69	>8.69/>7.69	9.09	-0.79		Above the quantification limit
	4	b	2819	0.00	1.64	<1.00	0.82	1.64		Below the quantification limit
	5	c	2773	6.47	7.69	>6.69	7.08	1.22		Above the quantification limit
	5	c	3278	7.61	8.69	>7.69	8.15	1.08		Above the quantification limit
	6	a	3925	7.58	8.69	>7.69	8.14	1.11		Above the quantification limit
	6	b	137	1.00	0.00	<1.00	0.50	-1.00		Below the quantification limit
	6	b	2630	0.00	1.26	<1.00	0.63	1.26		Below the quantification limit
	6	c	3281	6.67	7.69	>6.69	7.18	1.02		Above the quantification limit
	6	c	4005	1.15	0.00	<1.00	0.58	-1.15		Below the quantification limit
	7	a	3131	3.00	2.00	<4.00/<3.00	2.50	-1.00		Below the quantification limit
	7	c	3128	3.00	2.00	<4.00/<3.00	2.50	-1.00		Below the quantification limit

The number of samples above and below the UCL is given for each category of data (interpretable results by both the reference and the alternative methods, less than 4 colonies per PCA plate, below or above the quantification limit by at least one of the methods) (see Table 7).

Table 7 - Number of samples above and below the UCL

		Number of samples				
		24 h	40 h	48 h	24 h + 48 h at 5°C ± 3°C	48 h + 48 h at 5°C ± 3°C
Interpretable results by both methods	< LCL	0	6	6	4	6
	> UCL	1	3	3	1	2
	Total	1	9	9	5	8
<4 CFU/plate	< LCL	0	0	1	0	0
	> UCL	0	0	0	0	1
	Total	0	0	1	0	1
< or > the quantification limit	< LCL	3	7	5	6	5
	> UCL	3	12	10	4	12
	Total	6	19	15	10	17
Total < LCL		3	13	12	10	11
Total >UCL		4	15	13	5	15
Total		7	28	25	15	26

The number of samples with difference in favour of the alternative method is equivalent to the number of samples with difference in favour of the reference method whatever the incubation times tested (24 h, 40 h and 48 h).

It is also the case when the cards were incubated for 48 h at 30°C and then stored at 5°C ± 3°C.

When the cards were incubated for 24 h at 30°C prior storage for 48 h at 5°C ± 3°C, more samples were below the 95 % confidence limit (LCL) than above the 95 % confidence limit (UCL). This was not due to an evolution of the enumerations during storage but to a modification of the LCL and UCL values before and after storage (LCL: -0.96; UCL: 0.58 before storage and LCL: -0.76; UCL: 0.60) after storage).

3.1.2.5 Conclusion

The relative trueness study of the alternative method is satisfying. Whatever the incubation times tested (24 h, 40 h and 48 h), the TEMPO AC method is reliable when compared to the ISO 4833-1 method.

It is possible to store the TEMPO cards for 48 h at 5°C ± 3°C before proceeding to reading.

3.1.3 Accuracy profile study

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

3.1.3.1 Matrices

Seven matrix/strain pairs were tested. A minimum of one type per category, and therefore 2 different batches, was selected, using 6 samples per type. 2 samples were contaminated at a low level, 2 at intermediate level, 2 at a high level. For each sample, 5 replicates (5 different test portions) were tested. In the end, 30 samples were tested per matrix type.

The following matrix/strain pairs were studied (See Table 8).

Table 8 - Matrix/strain pairs

Category	Matrix	Inoculated strain	Origin	Inoculation level (CFU/g)	Incubation times
1 Raw meat including poultry	Ground beef	Naturally contaminated	/	10 ² 10 ⁴ 10 ⁶	24 h 40 h 48 h
2 Ready to reheat products and delicatessen	Liver pâté	<i>Citrobacter braakii</i> Ad833	Beef meat		24 h (*) 40 h 48 h
3 Dairy products	Dairy dessert	<i>Bacillus licheniformis</i> Ad880	Milk powder		40 h 48 h
4 Fruits and vegetables	Green beans	<i>Stenotrophomonas maltophilia</i> Ad720	Food product		24 h 40 h 48 h
5 Seafood products	Fish terrine	<i>Enterobacter cloacae</i> Ad230	Tuna		24 h 40 h 48 h
6 Pet food	Dog pâté	<i>Staphylococcus aureus</i> Ad903	Animal feed		40 h 48 h
7 Production environmental samples	Rinse water	<i>Listeria innocua</i> Ad1256	Slaughterhouse environment		24 h 40 h 48 h

(*) This incubation time is not in the scope of the validation study for cooked delicatessen, but it was tested during the validation study.

3.1.3.2 Calculation and interpretation

The summary tables (in log CFU/g) and calculations are provided in **Appendix 4**. The statistical results and the accuracy profiles are provided:

- Figure 17 (24 h incubation time)
- Figure 18 (40 h incubation time)
- Figure 19 (48 h incubation time).

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

Figure 17 – Accuracy profile (24 h incubation time)

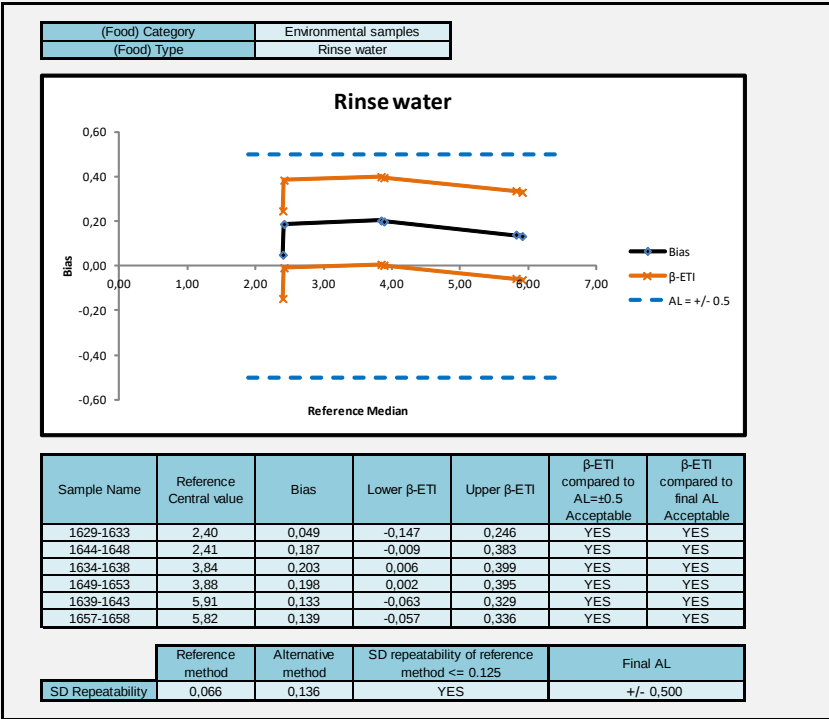
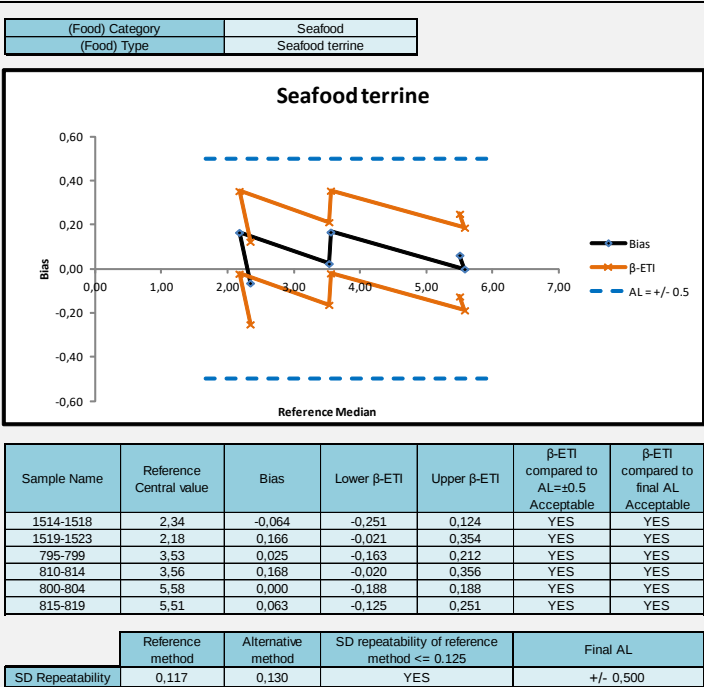
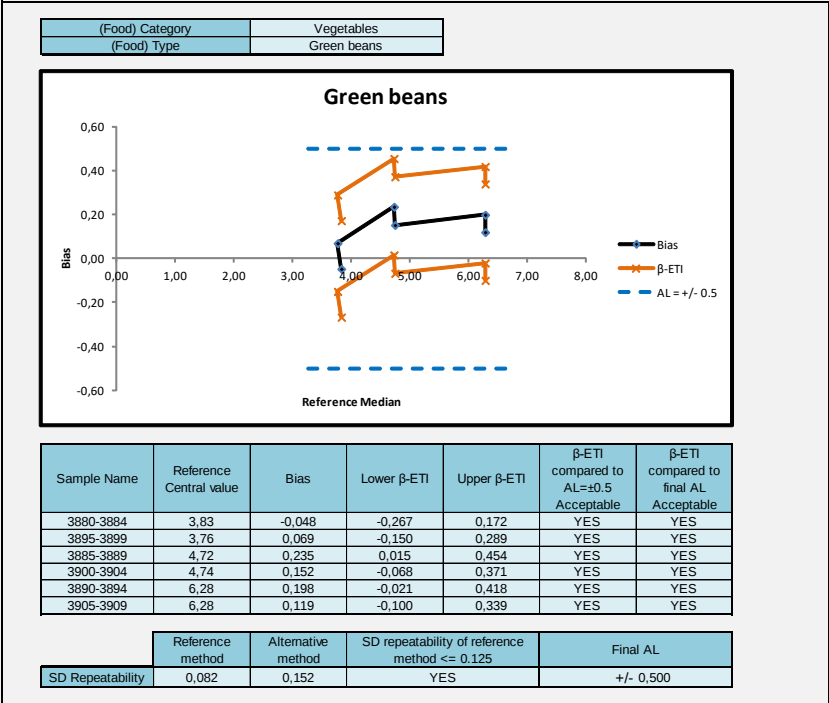
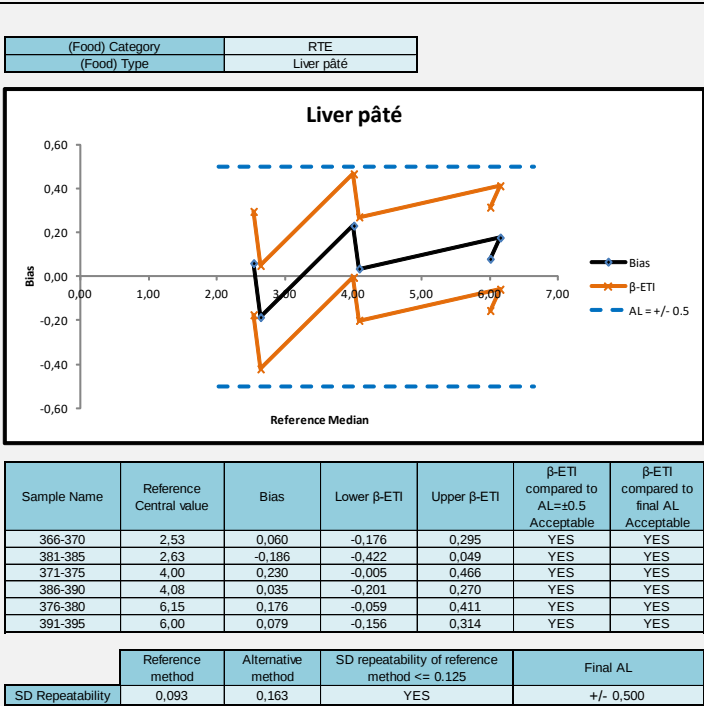
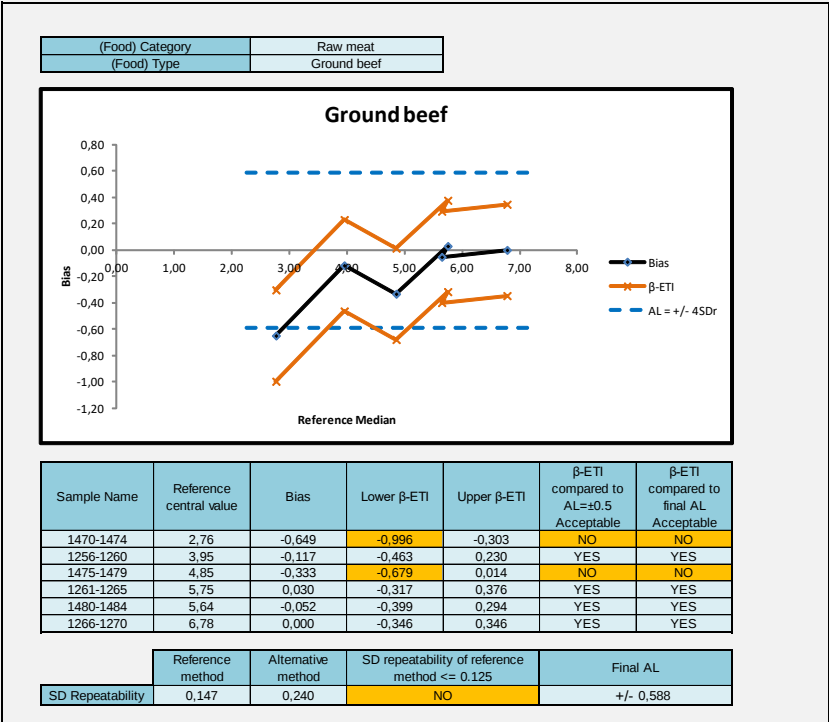


Figure 18 – Accuracy profile (40 h incubation time)

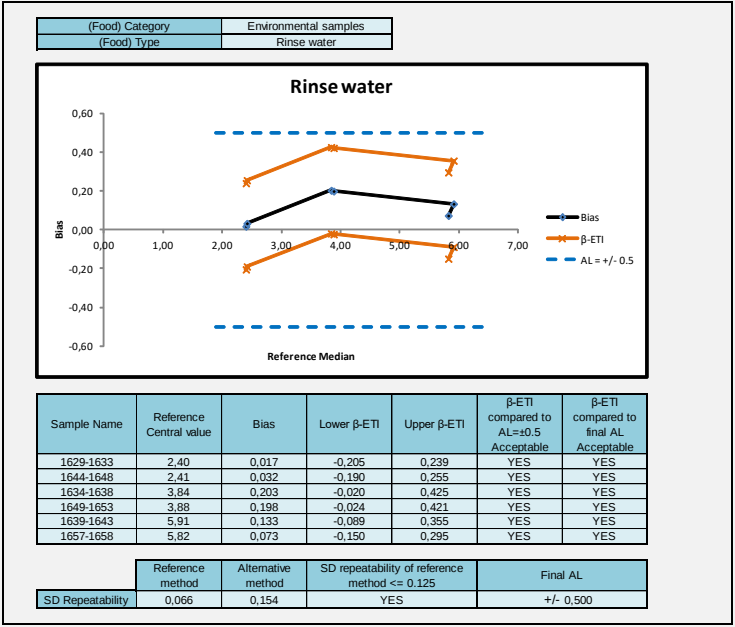
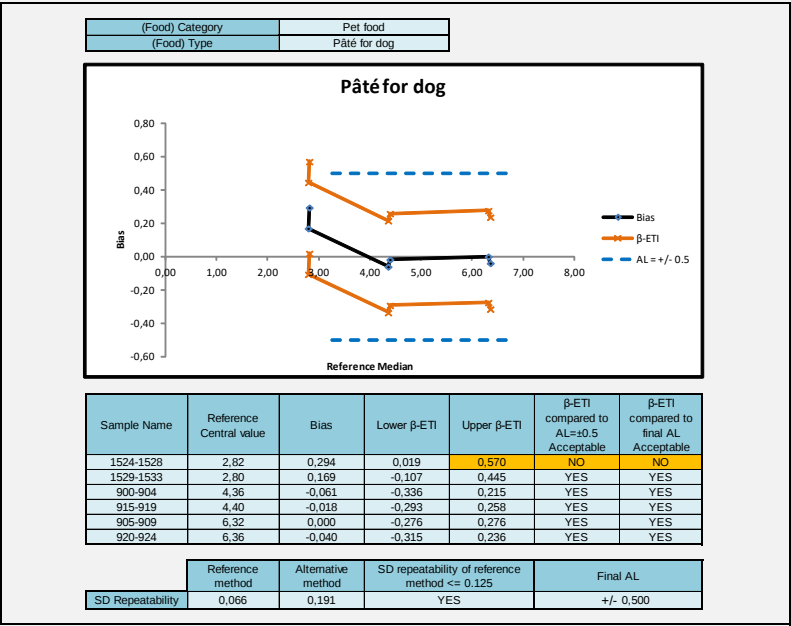
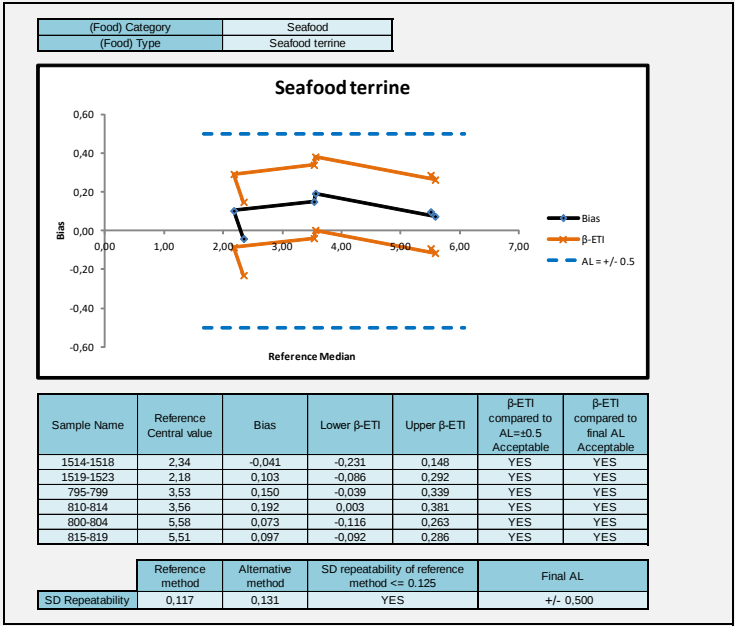
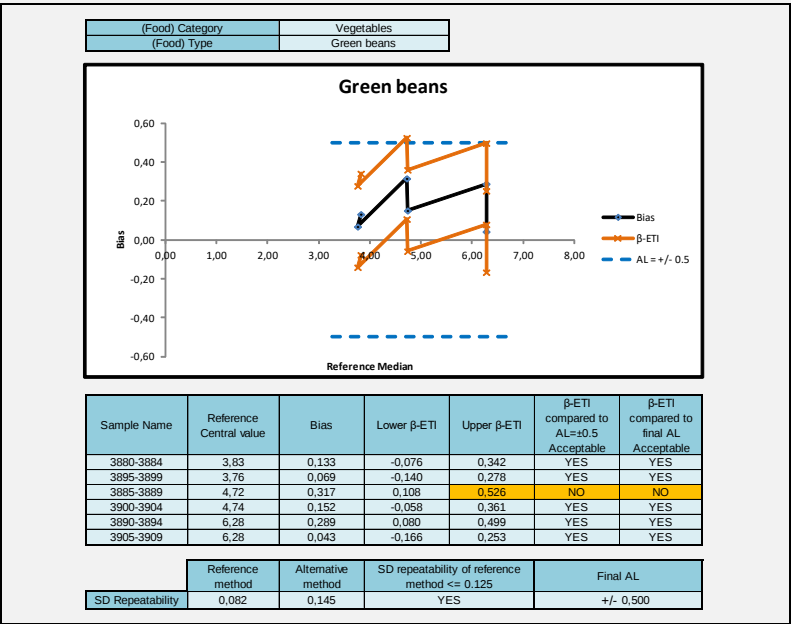
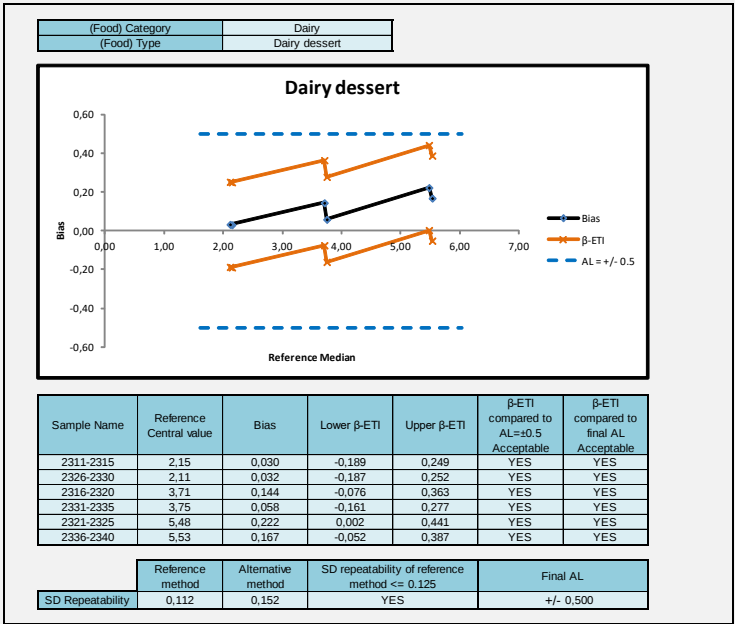
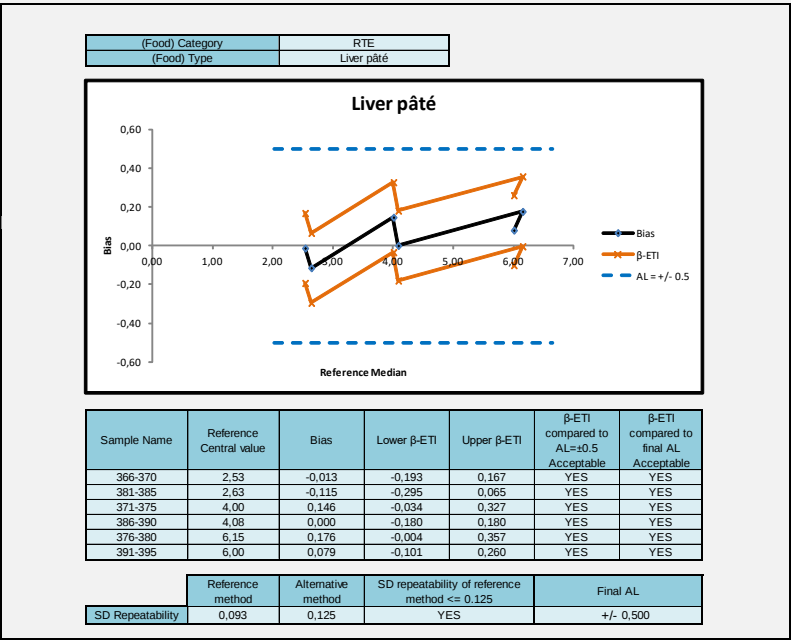
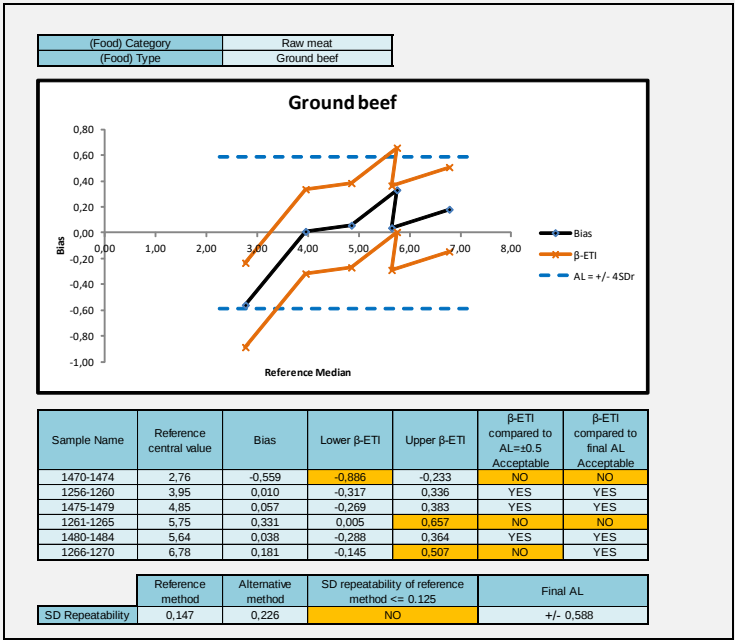
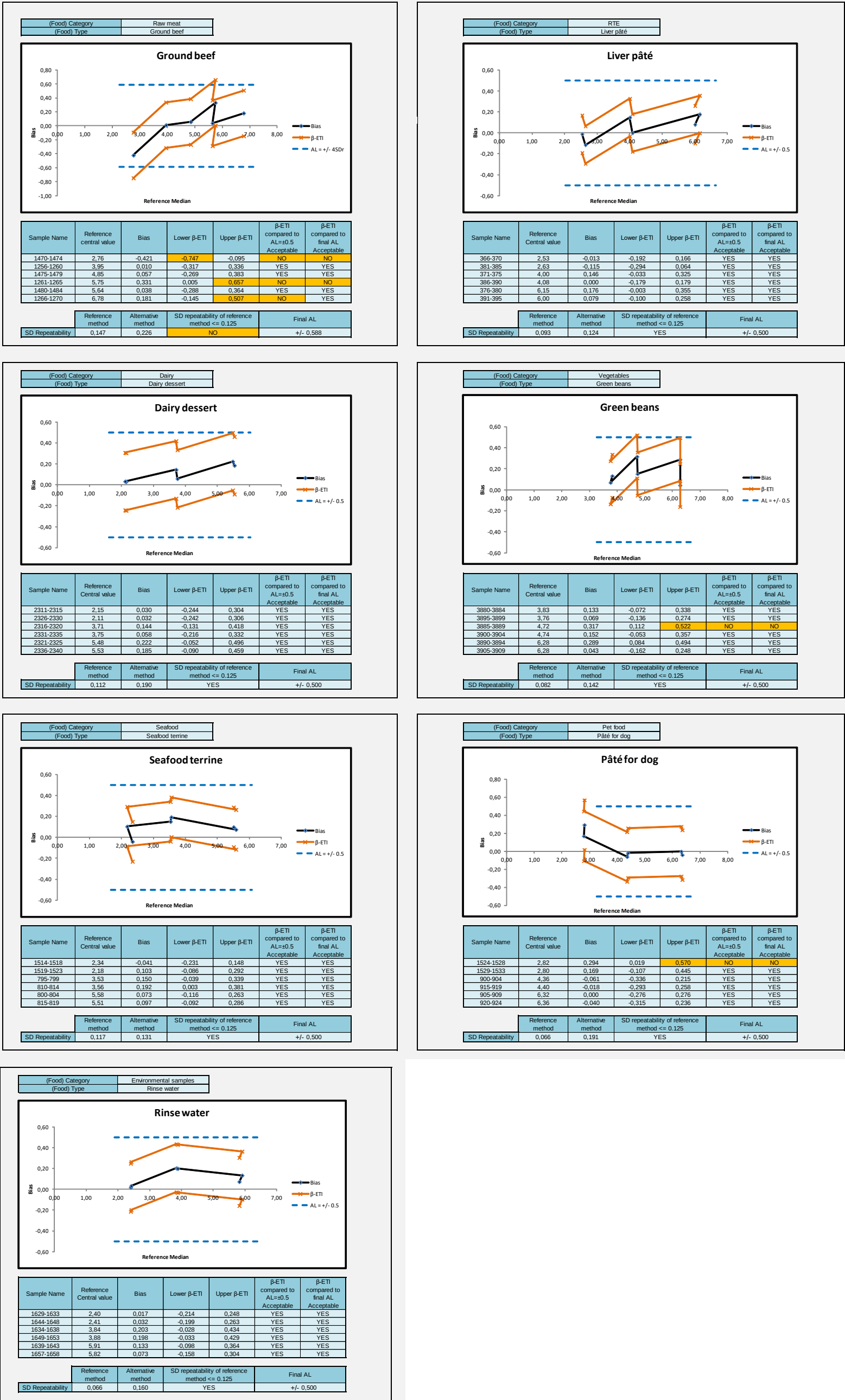


Figure 19 – Accuracy profile (48 h incubation time)



- **24 h incubation time**

The lower and upper β .ETI are within the acceptability limits for liver pâté, green beans, seafood terrine and rinse water.

For ground beef (one batch), the lower β .ETI and the bias are below the acceptability limit for the lower inoculation level (β .ETI = -0.996; bias = -0.649). The lower β .ETI (one batch) is below the acceptability limit for the intermediate inoculation level (β .ETI = -0.679).

- **40 h incubation time**

The lower and upper β .ETI are within the acceptability limits for liver pâté, dairy dessert, seafood terrine and rinse water.

For ground beef, the lower β .ETI is below the acceptability limit for the lower inoculation level for one batch (β .ETI = -0.886). The upper β .ETI is just above the acceptability limit for the medium inoculation level (β .ETI = 0.657).

The upper β .ETI is just above the acceptability limit for green beans (Upper β .ETI = 0.526) and for the pâté for dog for the low inoculation level (Upper β .ETI = 0.570) for one matrix batch.

- **48 h incubation time**

The lower and upper β .ETI are within the acceptability limits for liver pâté, dairy dessert, seafood terrine and rinse water.

For green beans, the upper β .ETI is just above the acceptability limit for the medium inoculation levels for one matrix batch (Upper β .ETI = 0.522 and 0.588).

The upper β .ETI is just above the acceptability limit for the pâté for dog for the low inoculation level (Upper β .ETI = 0.570).

3.1.3.3 Conclusion

For the matrix "Ground beef", naturally contaminated samples were used. A ground beef batch closed to the consumption limit was mixed with a freshly prepared ground beef batch in order to cover the different contamination levels. According to the ISO 16140-2:2016, artificially contaminated samples should have been used for this part of the study. The fact that the matrix was contaminated with many natural strains

probably impacts the observed results. The liver pâté which is finally a meat product gave satisfying results at all the incubation times (24 h, 40 h, 48 h).

The observed profiles are in most of the case comprised within the Acceptability Limit (AL). Note that for ground beef, the protocol applied does not fit the protocol described in the ISO 16140-2:2016 as it is not possible to find non-contaminated sample in this category.

3.1.4 Quantification limits (LOQ)

The limit of Quantification (LOQ) is the lowest analyte concentration that can be quantified with an acceptable level of precision and trueness under the conditions of the test.

The LOQ was determined as is it needed for the instrumental methods which are related to the growth of the microorganism.

3.1.4.1 Experimental design

Blank samples were tested for each category. These blank samples were used to verify the limit of quantification of the alternative method. 10 test portions from the same sample were analysed. The same food type matrices than those tested in the accuracy profile were used.

3.1.4.2 Calculation and interpretation

The threshold standard deviation S_0 was calculated as followed:

$$s_0 = \frac{1}{n-1} \sum_{j=1}^n (y_j - \bar{y})^2$$

where:

n = the total number of test portions used

y_j = the log transformed result of test portion j

$\bar{y}$ = the average log transformed result of all test portions

The limit of quantification is calculated as $LOQ = 10 s_0$.

3.1.4.3 Results

Raw data and calculation are provided in **Appendix 5**. The results are summarized in Table 9.

Table 9 - Quantification limits per tested matrix

Matrix	S ₀	LOQ
Beef meat	0	0
Liver pâté	0	0
Dairy dessert	0	0
Green beans	0	0
Seafood terrine	0	0
Pet food	0	0
Rinse water	0	0

3.1.5 Practicability

The TEMPO AC method practicability was evaluated according to the AFNOR criteria.

Storage conditions and shelf-life		The storage temperatures are between 2 and 25°C (room temperature before analysing) depending of the materials and reagents.	
Time to result			
Steps		Reference method	Alternative method
Sampling, stomach, analysis		Day 0	Day 0
Reading according to the categories:	▪ Meat products	Day 3	Day 1 or Day 2 depending on the tested products
	▪ Pet foods		
	▪ Dairy products		
	▪ Seafood products		
	▪ Fruits and vegetables		
	▪ Production environmental samples		
	▪ Raw meats including poultry meats, salted raw meats, carcasses swabs		
	▪ Catering foods in meat, seafood, fruits and vegetables categories (Ready-to-eat, to re-heat or to-cook foods)		
	▪ All products		
Common step with the reference method		Sampling, dilution and stomach	

3.2 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.

The results of the inter-laboratory study run in 2013 were interpreted according to the EN ISO 16140-2:2016 standard using Excel spread sheet available at <http://standards.iso.org/iso/16140> (AP Calculation tool ILS (clause 6.2.3 Calculation summary and interpretations of data) ver 14.03.2016).

3.2.1 Study organisation

16 laboratories participated to the study.

Ready-to-reheat meal (Purée with meat) was inoculated with *Escherichia coli* adria 19. Inoculation levels, which were targeted, were:

- < 10 CFU/g,
- 100 – 1 000 CFU/g,
- 1 000 – 10 000 CFU/g,
- 10 000 – 100 000 CFU/g.

3.2.2 Experimental parameters control

3.2.2.1 Strain stability

In order to evaluate the stability of the inoculated strain during transport and storage, bacterial counts of samples were checked at different times, *i.e.* inoculation time, after 24 h and 48 h of storage at 4°C.

Six test portions (3 contamination levels x 2 replicates) were enumerated (See Table 10).

Table 10 - Strain stability in the matrix

Day	Level	ISO 4833-1 (CFU/g)		TEMPO AC (CFU/g)	
		Sample 1	Sample 2	Sample 1	Sample 2
Day 0	Level 1	560	520	480	360
	Level 2	4 700	4 200	6 800	5 000
	Level 3	45 000	50 000	110 000	78 000
Day 1	Level 1	530	650	930	540
	Level 2	5 600	5 300	6 700	7 800
	Level 3	56 000	52 000	55 000	60 000
Day 2	Level 1	660	510	450	730
	Level 2	5 500	4 500	8 100	7 100
	Level 3	42 000	48 000	82 000	68 000

No evolution of the inoculated strain was observed between Day 0 and Day 2.

3.2.2.2 Homogeneity of inoculation

This test was not run for the inter-laboratory study as it was not required in 2013 (inter-laboratory study run according to the ISO 16140:2003).

3.2.3 Analysis results

The raw data are given in **Appendix 6**.

3.2.3.1 Results obtained by the expert Lab.

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

Table 11 – Results obtained by the expert Lab.

Inoculation level	Reference method		Alternative method	
	Sample 1	Sample 2	Sample 1	Sample 2
0	< 10	< 10	< 10	< 10
1	660	510	450	730
2	5 500	4 500	8 100	7 100
3	42 000	48 000	82 000	68 000

Targeted contamination levels were reached.

3.2.3.2 Results obtained by the collaborators

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

Table 12 - Summary of data (CFU/ml)

Laboratories	Level 0				Level 1				Level 2				Level 3			
	Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method	
A	160	<40	43	10	660	960	750	630	7600	5800	11000	5000	67000	85000	91000	120000
B	<10	<10	<10	<10	460	570	580	570	6800	5500	11000	7800	85000	110000	68000	47000
C	<10	<10	<10	<10	460	430	830	570	5800	4500	5200	5500	49000	55000	45000	68000
D	<10	<10	<10	<10	750	620	1300	500	6500	8400	11000	5300	74000	55000	48000	60000
E	<10	<10	<10	<10	330	380	1200	530	3700	5400	6000	4500	34000	31000	91000	68000
F	<10	2800	<10	3400	570	510	530	2400	3500	2500	10000	5500	32000	35000	60000	60000
G	<10	<10	<10	<10	460	860	490	830	5900	5200	7800	6000	39000	45000	50000	49000
H	<10	<10	<10	<10	520	460	620	610	4200	5800	6700	5500	43000	55000	78000	50000
I	<10	<10	<10	<10	680	470	700	510	4200	3900	6000	5500	50000	27000	210000	55000
J	<10	<10	<10	<10	590	400	1200	240	3900	3600	6000	6000	41000	47000	37000	67000
K	<10	<10	<10	<10	500	430	520	1100	5600	4500	15000	6000	45000	47000	68000	50000
L	<10	<10	<10	<10	690	530	730	480	6900	5200	6800	6800	47000	43000	47000	53000
M	<10	<10	<10	<10	470	410	710	810	4500	5100	6800	4500	64000	52000	110000	91000
N	<10	<10	<10	<10	690	500	640	640	4900	5700	6000	6000	58000	48000	60000	53000
O	<10	<10	<10	<10	440	490	350	930	4500	5000	7400	6800	48000	39000	150000	67000
P	<10	<10	<10	<10	530	460	480	500	5400	5500	6800	9100	45000	42000	60000	74000

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

Laboratories	Level 0				Level 1				Level 2				Level 3			
	Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method		Reference method		Alternative method	
A	2.20	<1.60	1.63	1.00	2.820	2.982	2.875	2.799	3.881	3.763	4.041	3.699	4.826	4.929	4.959	5.079
B	<1.00	<1.00	<1.00	<1.00	2.663	2.756	2.763	2.756	3.833	3.740	4.041	3.892	4.929	5.041	4.833	4.672
C	<1.00	<1.00	<1.00	<1.00	2.663	2.633	2.919	2.756	3.763	3.653	3.716	3.740	4.690	4.740	4.653	4.833
D	<1.00	<1.00	<1.00	<1.00	2.875	2.792	3.114	2.699	3.813	3.924	4.041	3.724	4.869	4.740	4.681	4.778
E	<1.00	<1.00	<1.00	<1.00	2.519	2.580	3.079	2.724	3.568	3.732	3.778	3.653	4.531	4.491	4.959	4.833
F	<1.00	3.45	<1.00	3.53	2.756	2.708	2.724	3.380	3.544	3.398	4.000	3.740	4.505	4.544	4.778	4.778
G	<1.00	<1.00	<1.00	<1.00	2.663	2.934	2.690	2.919	3.771	3.716	3.892	3.778	4.591	4.653	4.699	4.690
H	<1.00	<1.00	<1.00	<1.00	2.716	2.663	2.792	2.785	3.623	3.763	3.826	3.740	4.633	4.740	4.892	4.699
I	<1.00	<1.00	<1.00	<1.00	2.833	2.672	2.845	2.708	3.623	3.591	3.778	3.740	4.699	4.431	5.322	4.740
J	<1.00	<1.00	<1.00	<1.00	2.771	2.602	3.079	2.380	3.591	3.556	3.778	3.778	4.613	4.672	4.568	4.826
K	<1.00	<1.00	<1.00	<1.00	2.699	2.633	2.716	3.041	3.748	3.653	4.176	3.778	4.653	4.672	4.833	4.699
L	<1.00	<1.00	<1.00	<1.00	2.839	2.724	2.863	2.681	3.839	3.716	3.833	3.833	4.672	4.633	4.672	4.724
M	<1.00	<1.00	<1.00	<1.00	2.672	2.613	2.851	2.908	3.653	3.708	3.833	3.653	4.806	4.716	5.041	4.959
N	<1.00	<1.00	<1.00	<1.00	2.839	2.699	2.806	2.806	3.690	3.756	3.778	3.778	4.763	4.681	4.778	4.724
O	<1.00	<1.00	<1.00	<1.00	2.643	2.690	2.544	2.968	3.653	3.699	3.869	3.833	4.681	4.591	5.176	4.826
P	<1.00	<1.00	<1.00	<1.00	2.724	2.663	2.681	2.699	3.732	3.740	3.833	3.959	4.653	4.623	4.778	4.869

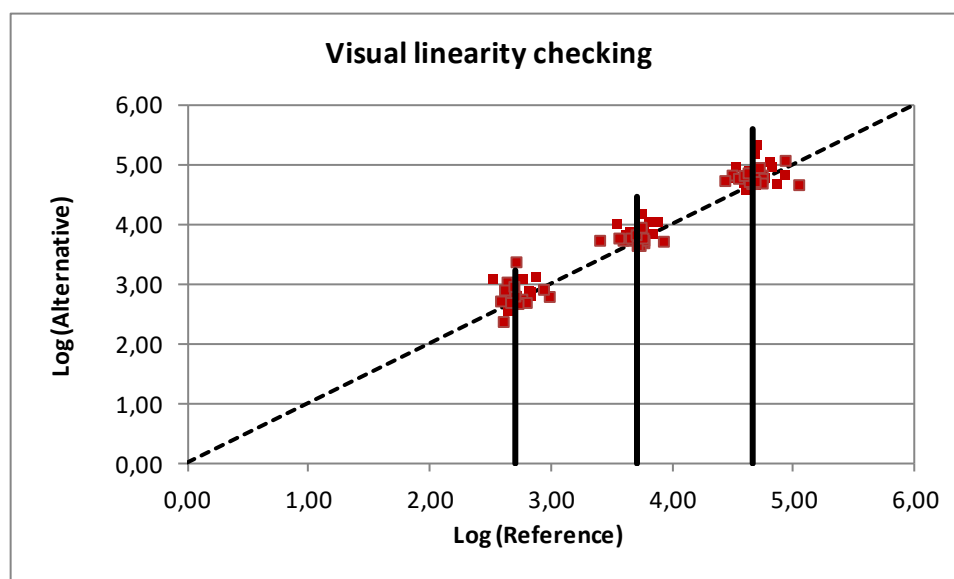
3.2.4 Calculations and interpretation

3.2.4.1 Visual linearity checking

The Figure 20 shows the data points after $\log_{10}$ transformation. The visual inspection shows that the alternative method gives results, which are proportional to those of the reference method.

The data are distributed closely to the first bisecting line.

Figure 20 - Visual linearity checking



3.2.4.2 Accuracy profile calculation

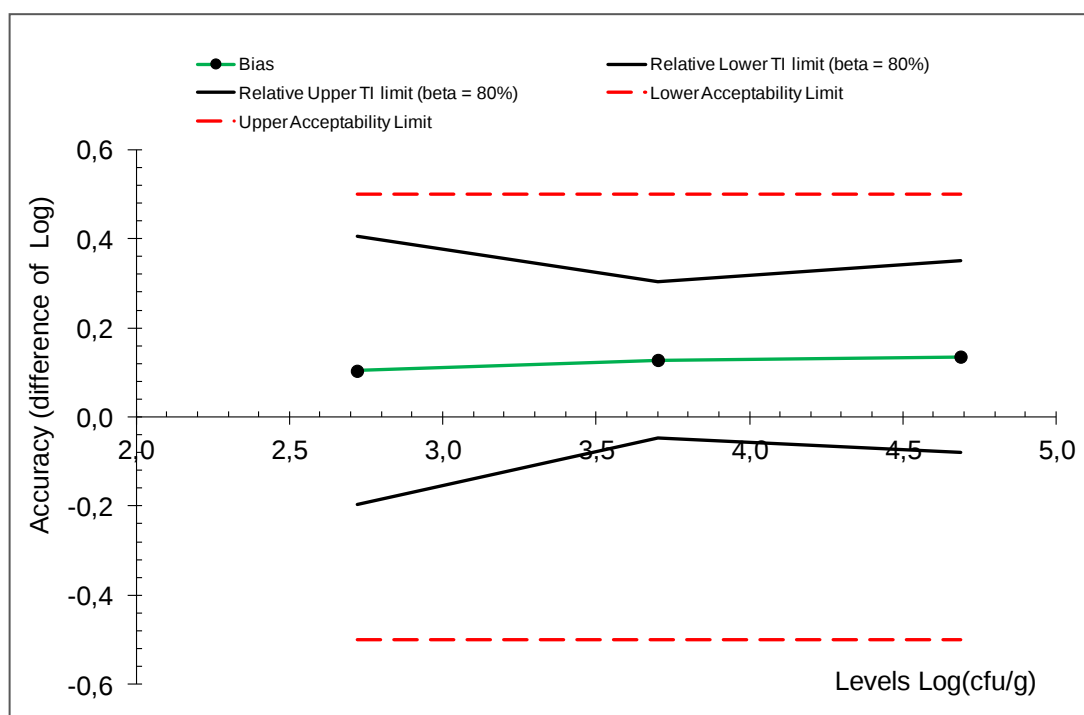
Statistical calculations were done according to the Excel spreadsheet available on <http://standards.iso.org/ISO/16140> (ver 14-03-2016). A summary of the statistical test is provided in Table 14; the detailed calculation is given in **Appendix 7**.

Table 14 - Summary of the statistical test

	Dataset		
	15		
	Low level	Medium level	High level
Target value	2.720	3.701	4.688
Bias	0.104	0.128	0.135
β .ETI lower (80 %)	-0.198	-0.047	-0.081
β .ETI upper (80 %)	0.405	0.303	0.352
Lower AL	-0.500		
Upper AL	0.500		

These values are collected in a graphical representation together with the acceptability limits (AL). This representation is given Figure 21.

Figure 21



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

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

3.3 Conclusion

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

- **121 samples with interpretable results were tested in the relative trueness study**, which clearly satisfied the required criteria for quantitative method comparison per ISO 16140-2. **This study confirms the possibility as well to store the TEMPO card for 48 h at 5°C ± 3°C before reading for all human food categories, pet food and production environmental samples.**
- **The observed profiles are comprised within the AL actually set at 0.5 Log CFU/g in the ISO 16140-2 for most of the matrix/strain pairs tested.**
- **The TEMPO AC method shows satisfying performances when compared to the ISO 4833-1 method.**

Quimper, 22 May 2025

Astrid CARIOU

Manager

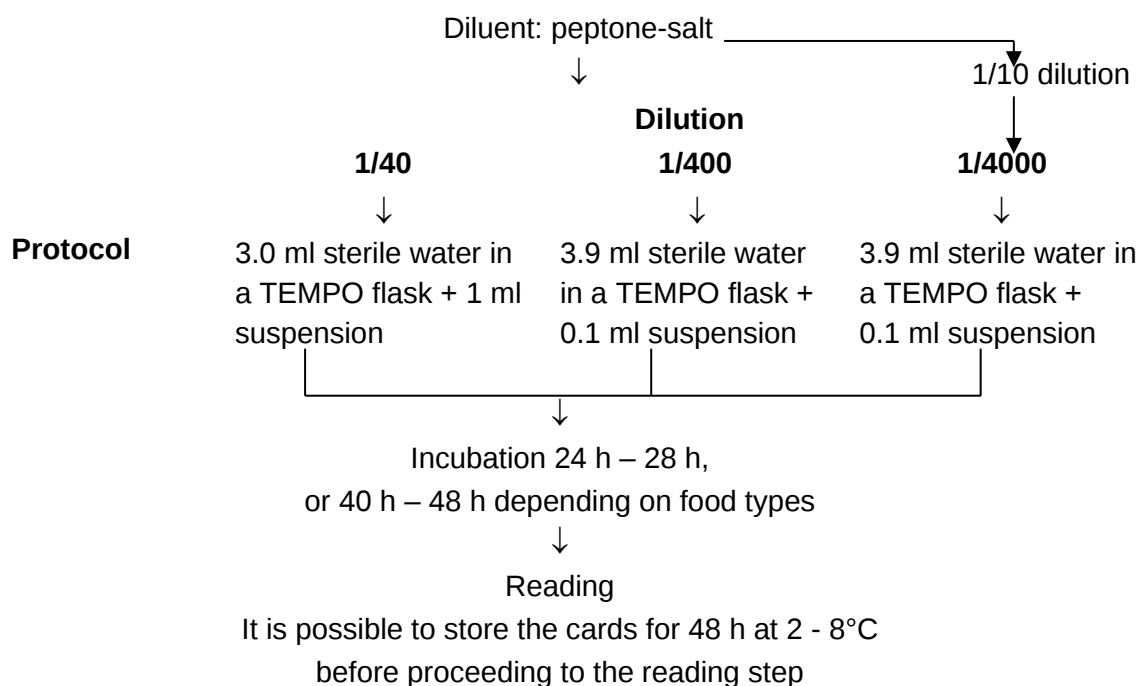
Method performance in food microbiology



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: TEMPO AC

Sample preparation: 1/10 in TEMPO® Stomacher bag according to ISO 6887 parts

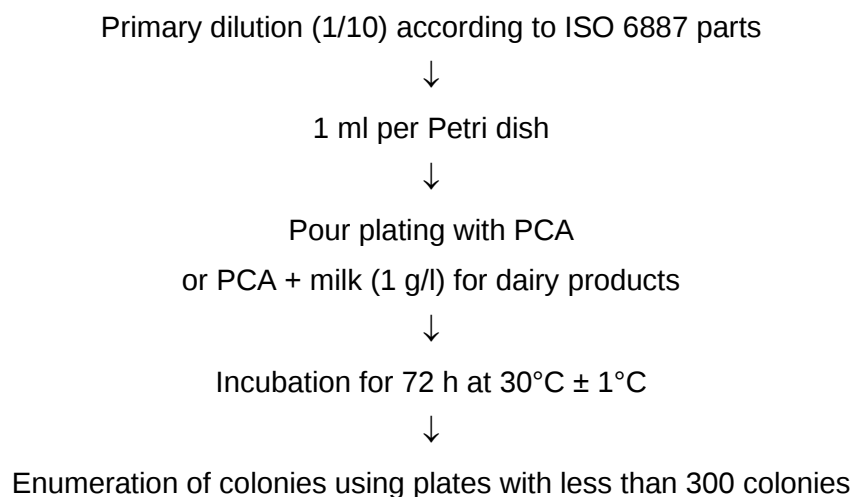


The 1/40 dilution allows 10 to 49 000 cfu/g enumeration.

The 1/400 dilution allows 100 to 490 000 cfu/g enumeration.

The 1/4000 dilution allows 1 000 to 4 900 000 cfu/g enumeration.

Appendix 2 - Flow diagram of the reference method
ISO 4833-1:2013 - Microbiology of the food chain —
Horizontal method for the enumeration of microorganisms —
Part 1: Colony count at 30° C by the pour plate technique



Appendix 3 - Relative trueness study: raw data

Year of analysis	RAW MEAT INCLUDING POULTRY																											
	N° sample	Product (French name)	Product	Reference method: ISO 4833-1*							Alternative method: TEMPO AC															Category	Type	
											24 h at 30°C					40h at 30°C					48h at 30°C							
				Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g				Mean
					Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2				Rep 1	Rep 2				Rep 1	Rep 2				Rep 1	Rep 2			
2013	2929	Escalope de dinde	Turkey meat	100000 1000000	54 2	64 2	5000000	6000000	6.70	6.78	6.74	5500000	4900000	6.74	6.69	6.72	9000000	6700000	6.95	6.83	6.89	11000000	11000000	7.04	7.04	7.04	1	a
2017	15	Escalope de dinde	Turkey meat	10000 100000	14 1		140000		5.15		5.15	120000		5.08		5.08	210000		5.32		5.32	210000		5.32		5.32	1	a
2017	16	Filet de poulet	Chicken meat	10000 100000	187 22		1900000		6.28		6.28	3700000		6.57		6.57	2500000		6.40		6.40	2500000		6.40		6.40	1	a
2017	17	Escalope de dinde	Turkey meat	100000 1000000	115 7		11000000		7.04		7.04	21000000		7.32		7.32	17000000		7.23		7.23	17000000		7.23		7.23	1	a
2017	18	Cuisse de dinde	Turkey meat	1000000 10000000	>300 84		840000000 N'		8.92 N'		8.92	>49000000		>7.69		>7.69	>49000000		>7.69		>7.69	>49000000		>7.69		>7.69	1	a
2017	1202	Escalope de dinde	Turkey meat	10000 100000	299 24		2900000		6.46		6.46	2300000		6.36		6.36	3700000		6.57		6.57	3700000		6.57		6.57	1	a
2013	2619	Steak haché pur bœuf	Ground beef	1000 10000	50 1	48 5	46000	48000	4.66	4.68	4.67	52000	43000	4.72	4.63	4.67	60000	68000	4.78	4.83	4.81	60000	68000	4.78	4.83	4.81	1	b
2013	2625	Faux filet de bœuf mariné aux herbes de Provence	Marinated beef meat	10000 100000	176 9	219 27	1700000	2200000	6.23	6.34	6.29	210000	250000	5.32	5.40	5.36	300000	370000	5.48	5.57	5.52	370000	370000	5.57	5.57	5.57	1	b
2013	5253	Tartare de bœuf	Beef tartar	1000 10000	60 8	57 6	62000	57000	4.79	4.76	4.77	25000	50000	4.40	4.70	4.55	34000	60000	4.53	4.78	4.66	41000	60000	4.61	4.78	4.70	1	b
2013	5255	Steack haché de bœuf	Ground beef	10 100	330 35	264 20	3500 N'	2600	3.54	3.41	3.48	1200	1100	3.08	3.04	3.06	2500	2200	3.40	3.34	3.37	2700	2600	3.43	3.41	3.42	1	b
2017	19	Viande bourguignon	Beef meat	100000 1000000	>300 35		35000000 N'		7.54 N'		7.54	>4900000		>6.69		>6.69	>4900000		>6.69		>6.69	>4900000		>6.69		>6.69	1	b
2017	1203	Steak de bœuf à griller	Beef meat	10000 100000	106 6		1000000		6.00		6.00	210000		5.32		5.32	1200000		6.08		6.08	1200000		6.08		6.08	1	b
2013	3133	Prélèvements carcasses de porc sternum	Pork carcass	1000 10000	176 17	213 16	180000	210000	5.26	5.32	5.29	290000	290000	5.46	5.46	5.46	680000	180000	5.83	5.26	5.54	680000	210000	5.83	5.32	5.58	1	c
2013	3134	Prélèvements carcasses de porc poitrine	Pork carcass	10000 100000	34 4	28 3	350000	280000	5.54	5.45	5.50	190000	500000	5.28	5.70	5.49	370000	680000	5.57	5.83	5.70	370000	680000	5.57	5.83	5.70	1	c
2013	3135	Prélèvements carcasses de porc jambon	Pork carcass	1000 10000	48 1	44 4	45000	44000	4.65	4.64	4.65	27000	26000	4.43	4.41	4.42	43000	73000	4.63	4.86	4.75	43000	73000	4.63	4.86	4.75	1	c
2013	5252	Escalope de veau	Veal meat	10000 100000	357 22	385 48	2200000 N'	4800000 N'	6.34	6.68	6.51	>4900000	>4900000	>6.69	>6.69	>6.69	>4900000	>4900000	>6.69	>6.69	>6.69	>4900000	>4900000	>6.69	>6.69	>6.69	1	c
2013	5254	Steak haché de porc	Ground pork	100 1000	152 14	148 14	15000	15000	4.18	4.18	4.18	15000	17000	4.18	4.23	4.20	17000	17000	4.23	4.23	4.23	17000	17000	4.23	4.23	4.23	1	c
2017	20	Viande d'agneau	Lamb meat	100000 1000000	141 12		14000000		7.15		7.15	>4900000		>6.69		>6.69	>4900000		>6.69		>6.69	>4900000		>6.69		>6.69	1	c
2017	1204	Gigot d'agneau	Lamb meat	10000 100000	164 19		1700000		6.23		6.23	1800000		6.26		6.26	2900000		6.46		6.46	2900000		6.46		6.46	1	c

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

Year of analysis	READY TO REHEAT PRODUCTS AND DELICATESSEN																											
	N°	Product (French name)	Product	Reference method: ISO 4833-1*							Alternative method: TEMPO AC															Category	Type	
											24h at 30°C					40h at 30°C					48h at 30°C							
				Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	Rep1	Rep2	Log cfu/g		Mean	Rep1	Rep2	Log cfu/g		Mean	Rep1	Rep2	Log cfu/g				Mean
					Rep1	Rep2	Rep1	Rep2	Rep1	Rep2				Rep1	Rep 2				Rep1	Rep2				Rep 1	Rep 2			
Result	Result	Rep1	Rep 2	Mean	Result	Result	Rep1	Rep 2	Mean	Result	Result	Rep1	Rep 2	Mean	Result	Result	Rep1	Rep 2	Mean	Result	Result	Rep1	Rep 2	Mean				
2013	2620	Nem poulet	Ready to reheat poultry	100	51	68	4900	7500	3.69	3.88	3.78	2500	3000	3.40	3.48	3.44	2800	4900	3.45	3.69	3.57	3300	4900	3.52	3.69	3.60	2	a
				1000	3	14																						
2013	2621	Tomate farcie au porc	Ready to reheat pork	10	99	137	1000	1400	3.00	3.15	3.07	320	330	2.51	2.52	2.51	890	860	2.95	2.93	2.94	890	1000	2.95	3.00	2.97	2	a
				100	13	17																						
2013	2626	Lasagnes bolognaise	Ready to reheat beef meat	10000	148	231	1400000	2200000	6.15	6.34	6.24	440000	500000	5.64	5.70	5.67	780000	670000	5.89	5.83	5.86	2500000	1700000	6.40	6.23	6.31	2	a
				100000	10	13																						
2017	21	Boeuf bourguignon	Ready to reheat beef meat	100	0		<100		<2.00		<2.00	<10		<1.00		<1.00	57		1.76		1.76	57		1.76		1.76	2	a
				1000	0																							
2017	22	Poulet au curry	Ready to reheat chicken	100	2		200		2.00*		2.00*	73		1.86		1.86	21		1.32		1.32	21		1.32		1.32	2	a
				1000	0																							
2017	1205	Porc au caramel	Ready to reheat pork	10	20		190		2.28		2.28	43		1.63		1.63	300		2.48		2.48	300		2.48		2.48	2	a
				100	1																							
2017	1206	Boeuf aux oignons	Ready to reheat beef meat	1000	111		110000		5.04		5.04	>490000		>5.69		>5.69	>490000		>5.69		>5.69	>490000		>5.69		>5.69	2	a
				10000	8																							
2017	1993	Fricadelles sauce tomate	Ready to reheat pork	10	51		510		2.71		2.71	65		1.81		1.81	570		2.76		2.76	570		2.76		2.76	2	a
				100	5																							
2017	1994	Lasagnes bolognaise	Ready to reheat beef meat	10	9		90		1.95		1.95	10		1.00		1.00	33		1.52		1.52	44		1.64		1.64	2	a
				100	3		Ne		Ne		Ne																	
2017	1995	Couscous	Ready to reheat	10	43		410		2.61		2.61	170		2.23		2.23	640		2.81		2.81	640		2.81		2.81	2	a
				100	2																							
2017	5960	Pizza poulet/ananas	Pizza chicken/pineapple	1000	>150		1500000		>6.18		>6.18	>4900000		>6.69		>6.69	>4900000		>6.69		>6.69	>4900000		>6.69		>6.69	2	a
				10000	>150																							
2017	5961	Poulet au curry	Chicken curry	1000	60		59000		4.77		4.77	150000		5.18		5.18	170000		5.23		5.23	170000		5.23		5.23	2	a
				10000	5																							
2017	5962	Poulet basquaise	Basquaise chicken	10	0		<10		<1.00		<1.00	<10		<1.00		<1.00	10		1.00		1.00	10		1.00		1.00	2	a
				100	0																							
2017	5963	Poulet sauce aigre-douce	Sweet and sour chicken	10	0		<10		<1.00		<1.00	<10		<1.00		<1.00	<10		<1.00		<1.00	<10		<1.00		<1.00	2	a
				100	0																							
2017	5964	Porc au caramel	Pork with caramel sauce	10	1		10		1.00*		1.00*	21		1.32		1.32	10		1.00		1.00	10		1.00		1.00	2	a
				100	0																							
2017	5967	Coquillettes poulet/jambon/champignon	Pasta with chicken ham and mushroom	10	6		60		1.78		1.78	10		1.00		1.00	<10		<1.00		<1.00	10		1.00		1.00	2	a
				100	1		Ne		Ne		Ne																	
2017	5968	Poulet au curry	Chicken curry	1000	>150		880000		5.94		5.94	530000		5.72		5.72	1500000		6.18		6.18	1500000		6.18		6.18	2	a
				10000	88		N'		N'		N'																	
2017	5969	Porc aux légumes	Pork meat with vegetables	100	72		7200		3.86		3.86	2900		3.46		3.46	6000		3.78		3.78	6800		3.83		3.83	2	a
				1000	7																							
2017	6423	Pizza chorizo/poivrons	Pizza pepper/chorizo	100000	78		7800000		6.89		6.89	6700000		6.83		6.83	12000000		7.08		7.08	12000000		7.08		7.08	2	a
				1000000	8																							

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Year of analysis

READY TO REHEAT PRODUCTS AND DELICATESSEN																											
N°	Product (French name)	Product	Reference method: ISO 4833-1*								Alternative method: TEMPO AC															Category	Type
											24h at 30°C					40h at 30°C					48h at 30°C						
			Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	Rep1	Rep2	Log cfu/g		Mean	Rep1	Rep2	Log cfu/g		Mean	Rep1	Rep2	Log cfu/g		Mean		
				Rep1	Rep2	Rep1	Rep2	Rep1	Rep2				Rep1	Rep2				Rep1	Rep2				Rep1	Rep2			
Result	Result	Rep1	Rep 2	Mean	Result	Result	Rep1	Rep 2	Mean	Result	Result	Rep1	Rep 2	Mean	Result	Result	Rep1	Rep 2	Mean	Result	Result	Rep1	Rep 2	Mean			
6424	Roulé au fromage et jambon	Wrap with cheese and ham	100000	113		11000000		7.04		7.04	67000000		7.83		7.83	50000000		7.70		7.70	78000000		7.89		7.89	2	a
			1000000	12																							
6425	Paupiettes de veau sauce tomate	Veal meat with tomato sauce	100	0		<100		<2.00		<2.00	<100		<2.00		<2.00	2100		3.32		3.32	100		2.00		2.00	2	a
			1000	0																							
6426	Porc au saté	Ready to reheat pork meat	100	17		1700		3.23		3.23	3500		3.54		3.54	3300		3.52		3.52	4100		3.61		3.61	2	a
			1000	2																							
2770	Terrine de foie	Pâté	10000	45	63	450000	590000	5.65	5.77	5.71	/	/	/	/	/	470000	490000	5.67	5.69	5.68	470000	490000	5.67	5.69	5.68	2	b
			100000	5	2																						
2771	Terrine de campagne	Pâté	10000	51	58	530000	600000	5.72	5.78	5.75	/	/	/	/	/	490000	820000	5.69	5.91	5.80	490000	1500000	5.69	6.18	5.93	2	b
			100000	7	8																						
2772	Boudin aux oignons	Black pudding	10	129	101	1200	1000	3.08	3.00	3.04	/	/	/	/	/	730	730	2.86	2.86	2.86	730	730	2.86	2.86	2.86	2	b
			100	7	12																						
25	Saucisson à l'ail	Cooked sausage	10000	111		1100000		6.04		6.04	/		/		/	490000		5.69		5.69	490000		5.69		5.69	2	b
			100000	12																							
26	Jambon blanc	Cooked ham	10000	49		490000		5.69		5.69	/		/		/	910000		5.96		5.96	910000		5.96		5.96	2	b
			100000	5																							
5359	Chair à saucisse	Sausage meta	10000	67	76	730000	830000	5.86	5.92	5.89	440000	670000	5.64	5.83	5.73	680000	780000	5.83	5.89	5.86	680000	780000	5.83	5.89	5.86	2	c
			100000	13	15																						
5360	Chipolatas	Sausages	10000	63	64	630000	600000	5.80	5.78	5.79	390000	450000	5.59	5.65	5.62	600000	780000	5.78	5.89	5.84	600000	780000	5.78	5.89	5.84	2	c
			100000	6	2																						
5361	Lardons nature	Sliced bacon	1000	289	260	290000	260000	5.46	5.41	5.44	220000	370000	5.34	5.57	5.46	340000	500000	5.53	5.70	5.62	340000	500000	5.53	5.70	5.62	2	c
			10000	32	29																						
23	Jambon de Bayonne	Bayonne ham	10000	1		9100		3.96*		3.96*	/		/		/	14000		4.15		4.15	17000		4.23		4.23	2	c
			100000	0																							
24	Merguez	Merguez	1000000	81		79000000		7.90		7.90	/		/		/	>49000000		>7.69		>7.69	>49000000		>7.69		>7.69	2	c
			10000000	6																							
1207	Merguez	Merguez	1000000	77		75000000		7.88		7.88	/		/		/	91000000		7.96		7.96	91000000		7.96		7.96	2	c
			10000000	5																							
1208	Jambon de Bayonne	Bayonne ham	1000	31		32000		4.51		4.51	/		/		/	49000		4.69		4.69	49000		4.69		4.69	2	c
			10000	4																							

Year of analysis	DAIRY PRODUCTS																											
	N° sample	Product (in French)	Product	Reference method: ISO 4833-1*								Alternative method: TEMPO AC															Category	Type
												24 h at 30°C					40h at 30°C					48h at 30°C						
				Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean		
					Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2				Rep 1	Rep 2				Rep 1	Rep 2				Rep 1	Rep 2			
2013	2775	Lait cru	Raw milk	1000 10000	262 21	274 19	260000	270000	5.41	5.43	5.42	/	/	/	/	/	490000	450000	5.69	5.65	5.67	490000	450000	5.69	5.65	5.67	3	a
2013	2776	Lait demi-écrémé pasteurisé	Pasteurized milk	10 100	0 0	0	<10	<10	<1.00	<1.00	<1.00	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	3	a
2013	2777	Lait entier pasteurisé	Pasteurized milk	10 100	0 0	1 0	<10	10*	<1.00	1.00*	<1.00	/	/	/	/	/	<100	10	<2.00	1.00	1.00	<100	10	<2.00	1.00	1.00	3	a
2013	3138	Lait pasteurisé entier	Pasteurised milk	10 100	56 8	174 13	580	1700	2.76	3.23	3.00	/	/	/	/	/	59	21	1.77	1.32	1.55	140	230	2.15	2.36	2.25	3	a
2013	3236	Lait cru	Raw milk	1000 10000	80 7	96 8	79000	95000	4.90	4.98	4.94	/	/	/	/	/	370000	370000	5.57	5.57	5.57	370000	370000	5.57	5.57	5.57	3	a
2013	3420	Lait cru	Raw milk	100 1000	146 7	99 7	14000	9600	4.15	3.98	4.06	/	/	/	/	/	90000	150000	4.95	5.18	5.07	90000	150000	4.95	5.18	5.07	3	a
2013	3919	Lait pasteurisé entier	Pasteurised milk	1 10	0 0	0	<1	<1	<0	<0	<0	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	3	a
2013	3920	Lait pasteurisé 1/2 écrémé	Pasteurised milk	1 10	0 0	0	<1	<1	<0	<0	<0	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	3	a
2013	3921	Lait frais 1/2 écrémé	Pasteurised milk	1 10	3 0	3 0	3*	3*	0.5*	0.5*	0.5*	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	3	a
2013	4003	Lait frais 1/2 écrémé	Pasteurised milk	1 10	3 0	6 0	3*	6*	0.5*	0.8*	0.65*	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	3	a
2013	4468	Lait cru de vache	Raw cow milk	10000 100000	98 6	113 4	950000	1100000	5.98	6.04	6.01	/	/	/	/	/	1500000	3700000	6.18	6.57	6.37	1500000	3700000	6.18	6.57	6.37	3	a
2013	4469	Lait cru de vache	Raw cow milk	1000 10000	25 3	50 3	25000	48000	4.40	4.68	4.54	/	/	/	/	/	49000	49000	4.69	4.69	4.69	49000	49000	4.69	4.69	4.69	3	a
2013	2778	Poudre de lait	Milk powder	10 100	71 8	56 8	720	580	2.86	2.76	2.81	/	/	/	/	/	950	900	2.98	2.95	2.97	1200	1200	3.08	3.08	3.08	3	b
2013	2779	Poudre de lait	Milk powder	10 100	4 1	12 1	40 Ne	120	1.60 Ne	2.08	1.84	/	/	/	/	/	71	45	1.85	1.65	1.75	100	45	2.00	1.65	1.83	3	b
2013	3419	Poudre de lait	Milk powder	1000 10000	143 11	122 18	140000	130000	5.15	5.11	5.13	/	/	/	/	/	250000	300000	5.40	5.48	5.44	250000	300000	5.40	5.48	5.44	3	b
2017	125	Lait en poudre écrémé	Skimmed milk powder	10 100	34 9		390		2.59		2.59	330		/	/	/	360		2.56		2.56	390		2.59		2.59	3	b
2017	126	Lait en poudre entier	Milk powder	10 100	23 4		250		2.40		2.40	160		/	/	/	270		2.43		2.43	300		2.48		2.48	3	b
2013	2780	Glace au lait cru saveur vanille	Vanilla ice cream	10 100	185 19	182 15	1900	1800	3.28	3.26	3.27	/	/	/	/	/	3900	1900	3.59	3.28	3.43	4100	1900	3.61	3.28	3.45	3	c
2013	3279	Riz au lait	Rice pudding	100 1000	0 0	2 0	<100	200*	<2.00	2.30*	<2.15	/	/	/	/	/	<100	<100	<2.00	<2.00	<2.00	<100	<100	<2.00	<2.00	<2.00	3	c
2013	3280	Riz au lait	Rice pudding	10 100	16 2	10 2	160	110	2.20	2.04	2.12	/	/	/	/	/	86	71	1.93	1.85	1.89	140	100	2.15	2.00	2.07	3	c
2013	4466	Glace à la vanille	Vanilla ice cream	100 1000	112 5	103 17	11000	11000	4.04	4.04	4.04	/	/	/	/	/	15000	12000	4.18	4.08	4.13	17000	21000	4.23	4.32	4.28	3	c
2013	4467	Glace à la vanille	Vanilla ice cream	100 1000	22 1	18 3	2100	1900	3.32	3.28	3.30	/	/	/	/	/	1900	1700	3.28	3.23	3.25	2500	2000	3.40	3.30	3.35	3	c
2017	127	Riz au lait	Rice pudding	100 1000	241 26		24000		4.38		4.38	25000		/	/	/	30000		4.48		4.48	30000		4.48		4.48	3	c

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Year of analysis	FRUITS AND VEGETABLES																											
	N° sample	Product (French name)	Product	Reference method: ISO 4833-1*							Alternative method: TEMPO AC															Category	Type	
											24 h at 30°C					40h at 30°C					48h at 30°C							
				Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g				Mean
					Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2				Rep 1	Rep 2				Rep 1	Rep 2				Rep 1	Rep 2			
2013	2768	Légumes IV Gamme: chou, carotte, céleri	Vegetables mix	10000 100000	>300 88	>300 94	8800000 N'	9400000 N'	6.94 N'	6.97 N'	6.96	>4900000	>4900000	>6.69	>6.69	>6.69	>4900000	>4900000	>6.69	>6.69	>6.69	>4900000	>4900000	>6.69	>6.69	>6.69	4	a
2013	2769	Légumes IV Gamme: chou, carotte, poivrons	Vegetables mix	10000 100000	>300 131	>300 208	13000000 N'	21000000 N'	7.11 N'	7.32 N'	7.22	>4900000	>4900000	>6.69	>6.69	>6.69	>4900000	>4900000	>6.69	>6.69	>6.69	>4900000	>4900000	>6.69	>6.69	>6.69	4	a
2013	2927	Légumes IV Gamme: chou, carotte, céleri	Vegetables mix	100000 1000000	86 11	92 15	8800000	9700000	6.94	6.99	6.97	12000000	17000000	7.08	7.23	7.15	21000000	17000000	7.32	7.23	7.28	21000000	17000000	7.32	7.23	7.28	4	a
2013	2928	Légumes IV Gamme: chou, carotte, frisée, poivrons	Vegetables mix	100000 1000000	71 9	83 9	7300000	8400000	6.86	6.92	6.89	12000000	11000000	7.08	7.04	7.06	15000000	9100000	7.18	6.96	7.07	15000000	9100000	7.18	6.96	7.07	4	a
2013	3412	Jeunes pousses d'épinards	Spinach baby leaves	100000 1000000	>300 199	>300 270	200000000 N'	270000000 N'	8.30	8.43	8.37	>49000000	>49000000	>7.69	>7.69	>7.69	>49000000	>49000000	>7.69	>7.69	>7.69	>49000000	>49000000	>7.69	>7.69	>7.69	4	a
2013	3413	Mélange de salade	Produce mix	1000000	>300	>300	>300000000	>300000000	>8.48	>8.48	>8.48	>49000000	>49000000	>7.69	>7.69	>7.69	>49000000	>49000000	>7.69	>7.69	>7.69	>49000000	>49000000	>7.69	>7.69	>7.69	4	a
2017	128	Carottes râpées	Sliced carrots	100000 1000000	49 1		4500000		6.65		6.65	4400000		6.64		6.64	4700000		6.67		6.67	4700000		6.67		6.67	4	a
2017	129	Cœur de laitue	Salad	1000 10000	210 24		210000		5.32		5.32	310000		5.49		5.49	420000		5.62		5.62	420000		5.62		5.62	4	a
2017	132	Jeunes pousses	Baby leaves	100000 1000000	28 3		2800000		6.45		6.45	1400000		6.15		6.15	3300000		6.52		6.52	3300000		6.52		6.52	4	a
2013	2819	Pulpe d'ananas	Pineapple pulp	10 100	0 0	0	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	4	b
2013	2820	Pulpe de fruits de la passion	Passion fruit pulp	10 100	1 0	0	10*	<10	1.00*	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	4	b
2013	2821	Pulpe de poire Williams	Pear pulp	100 1000	39 3	47 7	3800	4900	3.58	3.69	3.63	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	30	<10	1.48	<1.00	1.48	4	b
2013	2924	Pulpe de melon	Melon pulp	100000 1000000	62 3	77 6	5900000	7500000	6.77	6.88	6.82	6800000	7800000	6.83	6.89	6.86	12000000	9100000	7.08	6.96	7.02	12000000	9100000	7.08	6.96	7.02	4	b
2013	2925	Pulpe de fruits exotiques	Exotic fruits pulp	100 1000	60 8	73 5	6200	7100	3.79	3.85	3.82	11000	5200	4.04	3.72	3.88	8100	8300	3.91	3.92	3.91	8100	8300	3.91	3.92	3.91	4	b
2013	3277	Pulpe de rhubarbe	Rhubarb pulp	10 100	79 5	79 5	760	760	2.88	2.88	2.88	260	210	2.41	2.32	2.37	330	200	2.52	2.30	2.41	330	250	2.52	2.40	2.46	4	b
2017	130	Ananas en morceaux	Pineapple pieces	1000 10000	208 15		200000		5.30		5.30	370000		5.57		5.57	370000		5.57		5.57	370000		5.57		5.57	4	b
2017	131	Framboises brisées	Raspberries pieces	10 100	43 5		440		2.64		2.64	220		2.34		2.34	380		2.58		2.58	440		2.64		2.64	4	b
2013	2817	Celeri rémoulade	Deli salad	1000 10000	68 2	59 4	64000	57000	4.81	4.76	4.78	14000	29000	4.15	4.46	4.30	45000	68000	4.65	4.83	4.74	45000	78000	4.65	4.89	4.77	4	c
2013	2818	Duo Carotte Céleri	Deli salad	100 1000	29 0	30 2	2600	2900	3.41	3.46	3.44	730	1100	2.86	3.04	2.95	3000	2400	3.48	3.38	3.43	3600	2400	3.56	3.38	3.47	4	c
2013	3232	Macédoine de légumes	Deli salad	100 1000	8 2	5 1	800	500	2.90	2.70	2.80	590	1100	2.77	3.04	2.91	830	100	2.92	2.00	2.46	990	210	3.00	2.32	2.66	4	c
2013	3233	Carottes râpées	Deli salad	100 1000	139 14	143 19	14000	15000	4.15	4.18	4.16	4300	8300	3.63	3.92	3.78	13000	7300	4.11	3.86	3.99	15000	8300	4.18	3.92	4.05	4	c
2013	3421	Mélange de julienne de légumes surgelée	Frozen vegetables mix	1000 10000	66 12	70 5	71000	68000	4.85	4.83	4.84	120000	68000	5.08	4.83	4.96	150000	120000	5.18	5.08	5.13	490000	300000	5.69	5.48	5.58	4	c

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

Year of analysis	SEAFOOD PRODUCTS																											
	N° sample	Product (French name)	Product	Reference method: ISO 4833-1*							Alternative method: TEMPO AC																Category	Type
											24 h at 30°C					40h at 30°C					48h at 30°C							
				Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean		
					Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2				Rep 1	Rep 2				Rep 1	Rep 2				Rep 1	Rep 2			
2013	2825	Pavé de saumon	Salmon	10000 100000	>300 51	>300 46	5100000	4600000	6.71	6.66	6.69	/	/	/	/	/	7800000	6800000	6.89	6.83	6.86	7800000	6800000	6.89	6.83	6.86	5	a
2013	2826	Dos de cabillaud	Cod	10000 100000	>300 >300	>300 >300	>30000000	>30000000	>7.48	>7.48	>7.48	/	/	/	/	/	>49000000	>49000000	>7.69	>7.69	>7.69	>49000000	>49000000	>7.69	>7.69	>7.69	5	a
2013	2827	Filets de Julienne	Fish fillet	10000 100000	192 13	237 30	1900000	2400000	6.28	6.38	6.33	/	/	/	/	/	3400000	4900000	6.53	6.69	6.61	4100000	9100000	6.61	6.96	6.79	5	a
013	2934	Filet de Julienne	Fish fillet	1000 10000	214 22	188 11	210000	180000	5.32	5.26	5.29	/	/	/	/	/	250000	91000	5.40	4.96	5.18	370000	120000	5.57	5.08	5.32	5	a
2013	2935	Filet de lieu noir	Fish fillet	10000 100000	191 17	167 16	1900000	1600000	6.28	6.20	6.24	/	/	/	/	/	240000	370000	5.38	5.57	5.47	450000	370000	5.65	5.57	5.61	5	a
2013	3414	Maquereau frais	Mackerel	1000 10000	29 2	23 3	28000	24000	4.45	4.38	4.41	/	/	/	/	/	30000	37000	4.48	4.57	4.52	30000	37000	4.48	4.57	4.52	5	a
2013	2822	Filets de harengs doux fumés, épices, aromates	Seasoned herrings	1000 10000	109 6	126 12	100000	130000	5.00	5.11	5.06	/	/	/	/	/	300000	91000	5.48	4.96	5.22	300000	91000	5.48	4.96	5.22	5	b
2013	2823	Emincés de saumon fumé: aneth, citron	Marinated salmon	10 100	3 0	5 0	30*	50 Ne	1.48*	1.70 Ne	1.59*	/	/	/	/	/	100	<100	2.00	<2.00	2.00	100	<100	2.00	<2.00	2.00	5	b
2013	2824	Emincés de saumon fumé aux 5 baies	Smoked and marinated salmon	10 100	212 20	186 18	2100	1900	3.32	3.28	3.30	/	/	/	/	/	3600	4600	3.56	3.66	3.61	4800	6800	3.68	3.83	3.76	5 5	b b
2013	2930	Saumon fumé	Smoked salmon	100 1000	0 0	0 0	<100	<100	<2.00	<2.00	<2.00	/	/	/	/	/	<100	<100	<2.00	<2.00	<2.00	<100	<100	<2.00	<2.00	<2.00	5	b
2013	2931	Truite fumée	Smoked trout	100 1000	2 0	0 0	200*	<100	2.30*	<2.00	<2.15	/	/	/	/	/	<100	<100	<2.00	<2.00	<2.00	<100	<100	<2.00	<2.00	<2.00	5	b
2013	3235	Saumon fumé	Smoked salmon	100 1000	59 7	73 5	6000	7100	3.78	3.85	3.81	/	/	/	/	/	1700	2700	3.23	3.43	3.33	2400	2900	3.38	3.46	3.42	5	b
2013	3415	Saumon fumé	Smoked salmon	100 1000	150 8	136 8	14000	13000	4.15	4.11	4.13	/	/	/	/	/	12000	25000	4.08	4.40	4.24	25000	37000	4.40	4.57	4.48	5	b
2017	136	Filets d'anchois marinés	Marinated anchovy fillets	10 100	18 5		210		2.32		2.32	/		/		/	120		2.08		2.08	160		2.20		2.20	5	b
2013	2773	Salade de thon Pommes de terre	Deli salad	10000 100000	298 36	297 23	3000000	2900000	6.48	6.46	6.47	/	/	/	/	/	>49000000	>49000000	>6.69	>6.69	>6.69	>49000000	>49000000	>6.69	>6.69	>6.69	5	c
2013	2774	Encornet à l'américaine	Ready to reheat seafood	100 1000	163 15	170 24	16000	18000	4.20	4.26	4.23	/	/	/	/	/	24000	45000	4.38	4.65	4.52	24000	45000	4.38	4.65	4.52	5	c
2013	2926	Riz au crabe	Deli salad	1000000 10000000	60 3	96 8	5700000	9500000	6.76	6.98	6.87	910000	910000	5.96	5.96	5.96	1200000	780000	6.08	5.89	5.99	1200000	780000	6.08	5.89	5.99	5	c
2013	3278	Salade de thon	Tuna deli salad	1000000 10000000	>300 30	>300 55	30000000 N'	55000000 N'	7.48 N'	7.74 N'	7.61 N'	49000000	>49000000	7.69	>7.69	7.69	>49000000	25000000	>7.69	7.40	7.40	>49000000	>490000	>7.69	>7.69	>7.69	5	c
2013	4094	Cassolette de Saint Jacques congelée	Ready to reheat scallops	10000 100000	45 2	46 3	430000	450000	5.63	5.65	5.64	490000	370000	5.69	5.57	5.63	550000	500000	5.74	5.70	5.72	550000	550000	5.74	5.74	5.74	5	c
2013	5356	Timbale de Saint Jacques	Ready to reheat scallops	10 100	13 0	13 1	120	130	2.08	2.11	2.10	<1000	<1000	<3.00	<3.00	<3.00	<1000	<1000	<3.00	<3.00	<3.00	<1000	<1000	<3.00	<3.00	<3.00	5	c
2013	5357	Encornets à l'américaine	Ready to reheat seafood	10 100	101 9	72 11	1000	760	3.00	2.88	2.94	1000	1000	<3.00	3.00	3.00	1000	1000	<3.00	3.00	3.00	<1000	1000	<3.00	3.00	3.00	5	c
2013	5358	Encornets farcis	Ready to reheat seafood	10 100	166 16	167 22	1700	1700	3.23	3.23	3.23	670	890	2.83	2.95	2.89	1900	1500	3.28	3.18	3.23	1900	2000	3.28	3.30	3.29	5	c
2013	5440	Timbale de Saint Jacques	Ready to reheat scallops	10 100	46 6	42 4	470	420	2.67	2.62	2.65	100	100	2.00	2.00	2.00	320	210	2.51	2.32	2.41	320	320	2.51	2.51	2.51	5	c
2013	5441	Encornets à l'américaine	Ready to reheat seafood	10 100	>300 111	>300 157	11000	16000	4.04	4.20	4.12	18000	15000	4.26	4.18	4.22	19000	12000	4.28	4.08	4.18	19000	12000	4.28	4.08	4.18	5	c

* Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

Year of analysis	PET FOOD																												
	N° sample	Product (French name)	Product	Reference method: ISO 4833-1*								Alternative method: TEMPO AC																Category	Type
												24 h at 30°C								40h at 30°C									
				Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean			
					Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2				Rep 1	Rep 2				Rep 1	Rep 2				Rep 1	Rep 2				
2013	2627	Viande pour animaux	Raw meat for pet	10000 100000	215 18	186 16	2100000	1800000	6.32	6.26	6.29	/	/	/	/	/	3000000	4900000	6.48	6.69	6.58	3000000	>4900000	6.48	>6.69	6.48	6	a	
2013	2628	Viande pour animaux	Raw meat for pet	10000 100000	>300 235	>300 218	24000000 N'	22000000 N'	7.38 N'	7.34 N'	7.36 N'	/	/	/	/	/	>4900000	>4900000	>6.69	>6.69	>6.69	>4900000	>4900000	>6.69	>6.69	>6.69	6	a	
2013	2932	Viande hachée fraîche pour animaux	Raw meat for pet	100000 1000000	86 12	95 10	8900000	9500000	6.95	6.98	6.96	/	/	/	/	/	15000000	9100000	7.18	6.96	7.07	15000000	9100000	7.18	6.96	7.07	6	a	
2013	2933	Viande fraîche pour animaux	Raw meat for pet	1000000 10000000	77 11	41 7	80000000	44000000	7.90	7.64	7.77	/	/	/	/	/	49000000	26000000	7.69	7.41	7.55	49000000	37000000	7.69	7.57	7.63	6	a	
2013	3417	Viande fraîche pour animaux	Fresh meat for pet	100 1000	171 14	177 15	17000	17000	4.23	4.23	4.23	/	/	/	/	/	19000	8300	4.28	3.92	4.10	19000	9300	4.28	3.97	4.12	6	a	
2013	3924	Os pour animaux	Bones for pet	100000 1000000	186 25	218 24	19000000	22000000	7.28	7.34	7.31	/	/	/	/	/	25000000	17000000	7.40	7.23	7.31	25000000	17000000	7.40	7.23	7.31	6	a	
2013	3925	Viande bovine pour animaux	Raw meat for pet	100000 1000000	290 29	>300 49	29000000	49000000 N'	7.46	7.69	7.58	/	/	/	/	/	>49000000	>49000000	>7.69	>7.69	>7.69	>49000000	>49000000	>7.69	>7.69	>7.69	6	a	
2013	2629	Saucisson pour chien	Sausage for dog	10 100	11 2	8 2	120	80 Ne	2.08	1.90 Ne	1.99	/	/	/	/	/	110	110	2.04	2.04	2.04	110	110	2.04	2.04	2.04	6	b	
2013	2630	Saucisson pour chien	Sausage for dog	10 100	0 0	1 0	<10	10*	<1.00	1.00*	<1.00	/	/	/	/	/	10	33	1.00	1.52	1.26	10	33	1.00	1.52	1.26	6	b	
2013	3237	Saucisson pour chien	Sausage for dog	10 100	112 21	136 11	1200	1300	3.08	3.11	3.10	/	/	/	/	/	2200	2500	3.34	3.40	3.37	2400	2500	3.38	3.40	3.39	6	b	
2013	3416	Saucisson pour chien	Sausage for dog	10 100	0 0	0 0	<10	<10	<1.00	<1.00	<1.00	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	6	b	
2013	3922	Tendres bouchées en gelée	Balls for pet	10 100	0 0	0 0	<10	<10	<1.00	<1.00	<1.00	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	6	b	
2017	137	Terrine pour chat (saumon)	Terrine for cat	10 100	1 0		10*		1.00*		1.00*	/		/		/	<10		<1.00		<1.00	<10		<1.00		<1.00	6	b	
2017	138	Terrine pour chat (lapin)	Terrine for cat	10 100	0 0		<10		<1.00		<1.00	/		/		/	<10		<1.00		<1.00	<10		<1.00		<1.00	6	b	
2017	139	Terrine pour chien (volaille)	Terrine for dog	10 100	0 0		<10		<1.00		<1.00	/		/		/	<10		<1.00		<1.00	<10		<1.00		<1.00	6	b	
2017	1209	Pâté pour chat (en sachet)	Pâté for cat	10 100	0 0		<10		<1.00		<1.00	/		/		/	<10		<1.00		<1.00	<10		<1.00		<1.00	6	b	
2017	1210	Pâté pour chat (en sachet)	Pâté for cat	10 100	0 0		<10		<1.00		<1.00	/		/		/	<10		<1.00		<1.00	<10		<1.00		<1.00	6	b	
2017	1211	Saucisson pour chien	Sausage for dog	10 100	94 13		970		2.99		2.99	/		/		/	1900		3.28		3.28	1900		3.28		3.28	6	b	
2017	1409	Pâté pour chat (volaille)	Pâté for cat	100 1000	40 5		4100		3.61		3.61	/		/		/	37000		4.57		4.57	37000		4.57		4.57	6	b	
2017	1410	Pâté pour chat (lapin)	Pâté for cat	100 1000	151 6		14000		4.15		4.15	/		/		/	78000		4.89		4.89	78000		4.89		4.89	6	b	
2013	2828	Croquettes pour chat	Croquettes for cat	10 100	5 0	7 0	50 Ne	70 Ne	1.70 Ne	1.85 Ne	1.77	/	/	/	/	/	57	10	1.76	1.00	1.38	57	10	1.76	1.00	1.38	6	c	
2013	3136	Croquettes pour chat	Croquettes for cat	10 100	21 0	19 4	190	210	2.28	2.32	2.30	/	/	/	/	/	21	10	1.32	1.00	1.16	33	10	1.52	1.00	1.26	6	c	
2013	3137	Croquettes pour chiots	Croquettes for puppy	10 100	5 1	9 1	50 Ne	90 Ne	1.70 Ne	1.95 Ne	1.83 Ne	/	/	/	/	/	21	21	1.32	1.32	1.32	21	21	1.32	1.32	1.32	6	c	
2013	3281	Brizures de riz	Broken rice	10000 100000	>300 53	>300 42	5300000 N'	4200000 N'	6.72 N'	6.62 N'	6.67	/	/	/	/	/	>4900000	>4900000	>6.69	>6.69	>6.69	>4900000	>4900000	>6.69	>6.69	>6.69	6	c	
2013	3418	Brizures de riz	Broken rice	100 1000	85 9	81 9	8500	8200	3.93	3.91	3.92	/	/	/	/	/	6400	12000	3.81	4.08	3.94	6400	14000	3.81	4.15	3.98	6	c	

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

Year of analysis	PET FOOD																											
	N° sample	Product (French name)	Product	Reference method: ISO 4833-1*							Alternative method: TEMPO AC															Category	Type	
											24 h at 30°C					40h at 30°C					48h at 30°C							
				Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g				Mean
					Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep 2				Rep 1	Rep 2													
2013	3923	Croquettes adultes	Croquettes for pet	10	13	18	150	200	2.18	2.30	2.24	/	/	/	/	/	260	330	2.41	2.52	2.47	330	590	2.52	2.77	2.64	6	c
				100	3	4																						
2013	4004	Croquettes pour chien	Croquettes for dog	10	0	0	<10	<10	<1.00	<1.00	<1.00	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	6	c
				100	0	0																						
2013	4005	Croquettes pour chien	Croquettes for dog	10	1	2	10	20	1.00*	1.30*	1.15*	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	6	c
				100	0	0																						
2017	140	Croquettes pour chien (bœuf/céréales)	Croquettes for dog	10	23		240		2.38		2.38	/		/		/		/		/		270		2.43		2.43	6	c
				100	3																							

Year of analysis	PRODUCTION ENVIRONMENTAL SAMPLES																												
	N° sample	Product (French name)	Product	Reference method: ISO 4833-1*							Alternative method: TEMPO AC																	Category	Type
											24 h at 30°C					40h at 30°C					48h at 30°C								
				Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean			
					Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep 2				Rep 1	Rep 2				Rep 1	Rep 2									
2013	3124	Eau de laveuse usine poisson	Process water (Fish industry)	1000000 10000000	32 2	29 4	31000000	30000000	7.49	7.48	7.48	49000000	37000000	7.69	7.57	7.63	37000000	49000000	7.57	7.69	7.63	37000000	49000000	7.57	7.69	7.63	7	a	
2013	3125	Eau sous parage n°1 usine poisson	Process water (Fish industry)	1000000 10000000	30 2	35 4	29000000	35000000	7.46	7.54	7.50	29000000	47000000	7.46	7.67	7.57	49000000	49000000	7.69	7.69	7.69	49000000	49000000	7.69	7.69	7.69	7	a	
2013	3126	Eau sous épineuse usine poisson	Process water (Fish industry)	1000000 10000000	47 1	57 15	44000000	65000000	7.64	7.81	7.73	49000000	49000000	7.69	7.69	7.69	49000000	91000000	7.69	7.96	7.82	49000000	91000000	7.69	7.96	7.82	7	a	
2013	3127	Eau sous peleuse usine poisson	Process water (Fish industry)	1000000 10000000	29 3	22 3	29000000	23000000	7.46	7.36	7.41	31000000	25000000	7.49	7.40	7.44	25000000	37000000	7.40	7.57	7.48	25000000	37000000	7.40	7.57	7.48	7	a	
2013	3131	Eau de rinçage du Stéphan, fabrication crème dessert	Process water (Dairy industry)	10000 100000	0 0	0 0	<10000	<10000	<4.00	<4.00	<4.00	<1000	<1000	<3.00	<3.00	<3.00	<1000	<1000	<3.00	<3.00	<3.00	<1000	<1000	<3.00	<3.00	<3.00	7	a	
2017	133	Eau de rinçage cutter (atelier poisson)	Rinsing water (Fish industry)	100000 1000000	49 5		4900000		6.69		6.69	960000		5.98		5.98	4100000		6.61		6.61	5000000		6.70		6.70	7	a	
2013	3129	Chiffonnette plaque préparation de mélange fabrication pâté de poisson	Wipe (Fish industry)	10000 100000	35 3	40 6	350000	420000	5.54	5.62	5.58	910000	1100000	5.96	6.04	6.00	780000	480000	5.89	5.68	5.79	780000	480000	5.89	5.68	5.79	7	b	
2013	3130	Chiffonnette plaque découpe fabrication pâté de poisson	Wipe (Fish industry)	100000 1000000	>300 58	>300 57	58000000 N'	57000000 N'	7.76 N'	7.76 N'	7.76	49000000	34000000	7.69	7.53	7.61	91000000	60000000	7.96	7.78	7.87	91000000	60000000	7.96	7.78	7.87	7	b	
2013	3132	Chiffonnette balance, fabrication crème dessert	Wipe (Dairy industry)	10 100	108 10	129 9	1100	1300	3.04	3.11	3.08	<10	<10	<1.00	<1.00	<1.00	210	73	2.32	1.86	2.09	280	110	2.45	2.04	2.24	7	b	
2013	3275	Chiffonnette poste de découennage porc (production porc)	Wipe (Meat industry)	10000 100000	57 8	57 6	590000	570000	5.77	5.76	5.76	490000	490000	5.69	5.69	5.69	680000	680000	5.83	5.83	5.83	680000	780000	5.83	5.89	5.86	7	b	
2013	3276	Chiffonnette table de préparation (production porc)	Wipe (Meat industry)	1000 10000	125 17	157 19	130000	160000	5.11	5.20	5.16	170000	170000	5.23	5.23	5.23	300000	91000	5.48	4.96	5.22	300000	110000	5.48	5.04	5.26	7	b	
2013	3530	Chiffonnette atelier saucisserie	Wipe (Delicatessen industry)	100 1000	0 0	0 0	<100	<100	<2.00	<2.00	<2.00	<100	<100	<2.00	<2.00	<2.00	<100	<100	<2.00	<2.00	<2.00	<100	<100	<2.00	<2.00	<2.00	7	b	
2013	4092	Lingette table inox en cours de process	Wipe	1000 10000	145 11	172 19	140000	170000	5.15	5.23	5.19	54000	38000	4.73	4.58	4.66	240000	480000	5.38	5.68	5.53	240000	530000	5.38	5.72	5.55	7	b	
2013	4093	Lingette table découpe en cours de process	Wipe	100 1000	175 17	167 22	17000	17000	4.23	4.23	4.23	2100	<1000	3.32	<3.00	<3.16	26000	26000	4.41	4.41	4.41	26000	30000	4.41	4.48	4.45	7	b	
2013	3128	Poussières dessus bloc électrique usine poisson	Dusts (Fish industry)	10000 100000	0 0	0 0	<10000	<10000	<4.00	<4.00	<4.00	<1000	<1000	<3.00	<3.00	<3.00	<1000	<1000	<3.00	<3.00	<3.00	<1000	<1000	<3.00	<3.00	<3.00	7	c	
2013	3274	Chiffonnette poussières armoires électrique (production carnés)	Dusts (Meat industry)	10 100	28 16	48 5	400	480	2.60	2.68	2.64	180	140	2.26	2.15	2.20	390	700	2.59	2.85	2.72	540	1100	2.73	3.04	2.89	7	c	
2013	3531	Poussières environnement laitier	Dusts (Dairy industry)	10 100	115 14	117 11	1200	1200	3.08	3.08	3.08	950	250	2.98	2.40	2.69	2000	1800	3.30	3.26	3.28	2000	2100	3.30	3.32	3.31	7	c	
2013	3532	Poussières environnement laitier	Dusts (Dairy industry)	100 1000	76 12	76 9	8000	7700	3.90	3.89	3.89	6700	4800	3.83	3.68	3.75	11000	11000	4.04	4.04	4.04	11000	11000	4.04	4.04	4.04	7	c	
2017	1407	Poussières environnement laiterie	Dust from dairy industry environment	100000 1000000	21 0		1900000		6.28		6.28	330000		5.52		5.52	2000000		6.30		6.30	2000000		6.30		6.30	7	c	
2017	1408	Poussières environnement laiterie	Dust from dairy industry environment	100000 1000000	20 4		2200000		6.34		6.34	310000		5.49		5.49	1300000		6.11		6.11	1500000		6.18		6.18	7	c	

* Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

Year of analysis

RAW MEAT INCLUDING POULTRY																						
N°	Product (in French)	Product	Reference method: ISO 4833-1♦								Alternative method: TEMPO AC										Category	Type
			Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	24h at 30°C and 48h at 4°C					48h at 30°C and 48h at 4°C						
				Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2		Rep 1	Rep 2	Log cfu/g	Mean	Rep 1	Rep 2	Log cfu/g	Mean				
																			Result	Result		
2929	Escalope de dinde	Turkey meat	100000 1000000	54 2	64 2	5000000	6000000	6.70 6.78	6.74	9100000	4900000	6.96 6.69	6.82	11000000	11000000	7.04 7.04	7.04	7.04	1	a		
15	Escalope de dinde	Turkey meat	10000 100000	14 1		140000		5.15	5.15	120000		5.08	5.08	210000		5.32		5.32	1	a		
16	Filet de poulet	Chicken meat	10000 100000	187 22		1900000		6.28	6.28	3700000		6.57	6.57	2500000		6.40		6.40	1	a		
17	Escalope de dinde	Turkey meat	100000 1000000	115 7		11000000		7.04	7.04	21000000		7.32	7.32	17000000		7.23		7.23	1	a		
18	Cuisse de dinde	Turkey meat	1000000 10000000	>300 84		840000000 N'		8.92 N'	8.92	>49000000		>7.69	>7.69	>49000000		>7.69		>7.69	1	a		
1202	Escalope de dinde	Turkey meat	10000 100000	299 24		2900000		6.46	6.46	4500000		6.65	6.65	3700000		6.57		6.57	1	a		
2619	Steak haché pur bœuf	Ground beef	1000 10000	50 1	48 5	46000	48000	4.66 4.68	4.67	74000	52000	4.87 4.72	4.79	60000	68000	4.78 4.83	4.81	4.81	1	b		
2625	Faux filet de bœuf mariné aux herbes de Provence	Marinated beef meat	10000 100000	176 9	219 27	1700000	2200000	6.23 6.34	6.29	250000	250000	5.40 5.40	5.40	370000	370000	5.57 5.57	5.57	5.57	1	b		
5253	Tartare de bœuf	Beef tartar	1000 10000	60 8	57 6	62000	57000	4.79 4.76	4.77	34000	50000	4.53 4.70	4.62	41000	91000	4.61 4.96	4.79	4.79	1	b		
5255	Steack haché de bœuf	Ground beef	10 100	330 35	264 20	3500 N'	2600	3.54 3.41	3.48	1800	1100	3.26 3.04	3.15	2700	2600	3.43 3.41	3.42	3.42	1	b		
19	Viande bourguignon	Beef meat	100000 1000000	>300 35		35000000 N'		7.54 N'	7.54	>4900000		>6.69	>6.69	>4900000		>6.69		>6.69	1	b		
1203	Steak de bœuf à griller	Beef meat	10000 100000	106 6		1000000		6.00	6.00	1200000		6.08	6.08	1200000		6.08		6.08	1	b		
3133	Prélèvements carcasses de porc sternum	Pork carcass	1000 10000	176 17	213 16	180000	210000	5.26 5.32	5.29	290000	290000	5.46 5.46	5.46	680000	240000	5.83 5.38	5.61	5.61	1	c		
3134	Prélèvements carcasses de porc poitrine	Pork carcass	10000 100000	34 4	28 3	350000	280000	5.54 5.45	5.50	190000	500000	5.28 5.70	5.49	370000	680000	5.57 5.83	5.70	5.70	1	c		
3135	Prélèvements carcasses de porc jambon	Pork carcass	1000 10000	48 1	44 4	45000	44000	4.65 4.64	4.65	33000	36000	4.52 4.56	4.54	43000	73000	4.63 4.86	4.75	4.75	1	c		
5252	Escalope de veau	Veal meat	10000 100000	357 22	385 48	2200000 N'	4800000 N'	6.34 6.68	6.51	>4900000	>4900000	>6.69 >6.69	>6.69	>4900000	>4900000	>6.69 >6.69	>6.69	>6.69	1	c		
5254	Steak haché de porc	Ground pork	100 1000	152 14	148 14	15000	15000	4.18 4.18	4.18	15000	17000	4.18 4.23	4.20	17000	17000	4.23 4.23	4.23	4.23	1	c		
20	Viande d'agneau	Lamb meat	100000 1000000	141 12		14000000		7.15	7.15	>4900000		>6.69	>6.69	>4900000		>6.69		>6.69	1	c		
1204	Gigot d'agneau	Lamb meat	10000 100000	164 19		170000		5.23	5.23	2100000		6.32	6.32	2900000		6.46		6.46	1	c		

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

READY TO REHEAT PRODUCTS AND DELICATESSEN																							
N°	Product (French name)	Product	Reference method: ISO 4833-1*								Alternative method: TEMPO AC										Category	Type	
			Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	24h at 30°C and 48h at 4°C					48h at 30°C and 48h at 4°C							
				Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2		Rep 1	Rep 2	Log cfu/g	Mean	Rep 1	Rep 2	Log cfu/g	Mean					
																			Result	Result			Rep 1
2013	2620	Nem poulet	Ready to reheat poultry	100	51	68	4900	7500	3.69	3.88	3.78	2800	3500	3.45	3.54	3.50	3300	4900	3.52	3.69	3.60	2	a
				1000	3	14																	
2013	2621	Tomate farcie au porc	Ready to reheat pork	10	99	137	1000	1400	3.00	3.15	3.07	710	730	2.85	2.86	2.86	890	1000	2.95	3.00	2.97	2	a
				100	13	17																	
2013	2626	Lasagnes bolognaise	Ready to reheat beef meat	10000	148	231	1400000	2200000	6.15	6.34	6.24	740000	1200000	5.87	6.08	5.97	3000000	2500000	6.48	6.40	6.44	2	a
				100000	10	13																	
2017	21	Bœuf bourguignon	Ready to reheat beef meat	100	0		<100		<2.00		<2.00	<10		<1.00		<1.00	57		1.76		1.76	2	a
				1000	0																		
2017	22	Poulet au curry	Ready to reheat chicken	100	2		200		2.00*		2.00*	86		1.93		1.93	32		1.51		1.51	2	a
				1000	0																		
2017	1205	Porc au caramel	Ready to reheat pork	10	20		190		2.28		2.28	99		2.00		2.00	300		2.48		2.48	2	a
				100	1																		
2017	1206	Bœuf aux oignons	Ready to reheat beef meat	1000	111		110000		5.04		5.04	>490000		>5.69		>5.69	>490000		>5.69		>5.69	2	a
				10000	8																		
2017	1993	Fricadelles sauce tomate	Ready to reheat pork	10	51		510		2.71		2.71	1100		3.04		3.04	570		2.76		2.76	2	a
				100	5																		
2017	1994	Lasagnes bolognaise	Ready to reheat beef meat	10	9		90		1.95		1.95	10		1.00		1.00	44		1.64		1.64	2	a
				100	3		Ne		Ne		Ne												
2017	1995	Couscous	Ready to reheat	10	43		410		2.61		2.61	430		2.63		2.63	730		2.86		2.86	2	a
				100	2																		
2017	5960	Pizza poulet/ananas	Pizza chicken/pineapple	1000	>150		1500000		>6.18		>6.18	>4900000		>6.69		>6.69	>4900000		>6.69		>6.69	2	a
				10000	>150																		
2017	5961	Poulet au curry	Chicken curry	1000	60		59000		4.77		4.77	150000		5.18		5.18	170000		5.23		5.23	2	a
				10000	5																		
2017	5962	Poulet basquaise	Basquaise chicken	10	0		<10		<1.00		<1.00	<10		<1.00		<1.00	10		1.00		1.00	2	a
				100	0																		
2017	5963	Poulet sauce aigre-douce	Sweet and sour chicken	10	0		<10		<1.00		<1.00	<10		<1.00		<1.00	<10		<1.00		<1.00	2	a
				100	0																		
2017	5964	Porc au caramel	Pork with caramel sauce	10	1		10		1.00*		1.00*	21		1.32		1.32	10		1.00		1.00	2	a
				100	0																		
2017	5967	Coquillettes poulet/jambon/champignon	Pasta with chicken ham and mushroom	10	6		60		1.78		1.78	10		1.00		1.00	10		1.00		1.00	2	a
				100	1		Ne		Ne		Ne												
2017	5968	Poulet au curry	Chicken curry	1000	>150		880000		5.94		5.94	680000		5.83		5.83	1500000		6.18		6.18	2	a
				10000	88		N'		N'		N'												
2017	5969	Porc aux légumes	Pork meat with vegetables	100	72		7200		3.86		3.86	3900		3.59		3.59	6800		3.83		3.83	2	a
				1000	7																		
2017	6423	Pizza chorizo/poivrons	Pizza pepper/chorizo	100000	78		7800000		6.89		6.89	7400000		6.87		6.87	12000000		7.08		7.08	2	a
				1000000	8																		
2017	6424	Roulé au fromage et jambon	Wrap with cheese and ham	100000	113		11000000		7.04		7.04	110000000		8.04		8.04	78000000		7.89		7.89	2	a

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READY TO REHEAT PRODUCTS AND DELICATESSEN																						
N°	Product (French name)	Product	Reference method: ISO 4833-1*								Alternative method: TEMPO AC										Category	Type
			Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	24h at 30°C and 48h at 4°C					48h at 30°C and 48h at 4°C						
				Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2		Rep 1	Rep 2	Log cfu/g	Mean	Rep 1	Rep 2	Log cfu/g	Mean				
																			Result	Result		
			1000000	12																		
6425	Paupiettes de veau sauce tomate	Veal meat with tomato sauce	100	0		<100		<2.00		<2.00	100		2.00		2.00	210		2.32		2.32	2	a
			1000	0																		
6426	Porc au saté	Ready to reheat pork meat	100	17		1700		3.23		3.23	3500		3.54		3.54	5400		3.73		3.73	2	a
			1000	2																		
2770	Terrine de foie	Pâté	10000	45	63	450000	590000	5.65	5.77	5.71	/	/	/	/	/	470000	490000	5.67	5.69	5.68	2	b
			100000	5	2																	
2771	Terrine de campagne	Pâté	10000	51	58	530000	600000	5.72	5.78	5.75	/	/	/	/	/	490000	1500000	5.69	6.18	5.93	2	b
			100000	7	8																	
2772	Boudin aux oignons	Black pudding	10	129	101	1200	1000	3.08	3.00	3.04	/	/	/	/	/	730	730	2.86	2.86	2.86	2	b
			100	7	12																	
25	Saucisson à l'ail	Cooked sausage	10000	111		1100000		6.04		6.04	/		/		/	490000		5.69		5.69	2	b
			100000	12																		
26	Jambon blanc	Cooked ham	10000	49		490000		5.69		5.69	/		/		/	910000		5.96		5.96	2	b
			100000	5																		
5359	Chair à saucisse	Sausage meta	10000	67	76	730000	830000	5.86	5.92	5.89	520000	1200000	5.72	6.08	5.90	680000	780000	5.83	5.89	5.86	2	c
			100000	13	15																	
5360	Chipolatas	Sausages	10000	63	64	630000	600000	5.80	5.78	5.79	600000	450000	5.78	5.65	5.72	600000	780000	5.78	5.89	5.84	2	c
			100000	6	2																	
5361	Lardons nature	Sliced bacon	1000	289	260	290000	260000	5.46	5.41	5.44	270000	370000	5.43	5.57	5.50	340000	500000	5.53	5.70	5.62	2	c
			10000	32	29																	
23	Jambon de Bayonne	Bayonne ham	10000	1		9100		3.96*		3.96*	/		/		/	17000		4.23		4.23	2	c
			100000	0																		
24	Merguez	Merguez	1000000	81		79000000		7.90		7.90	/		/		/	>49000000		>7.69		>7.69	2	c
			10000000	6																		
1207	Merguez	Merguez	1000000	77		75000000		7.88		7.88	/		/		/	91000000		7.96		7.96	2	c
			10000000	5																		
1208	Jambon de Bayonne	Bayonne ham	1000	31		32000		4.51		4.51	/		/		/	49000		4.69		4.69	2	c
			10000	4																		

Year of analysis

Year of analysis	DAIRY PRODUCTS																							
	N°	Product (in French)	Product	Reference method: ISO 4833-1*								Alternative method: TEMPO AC											Category	Type
				Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	24h at 30°C and 48h at 4°C					48h at 30°C and 48h at 4°C							
					Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2		Rep 1 Result	Rep 2 Result	Log cfu/g		Mean	Rep 1 Result	Rep 2 Result	Log cfu/g		Mean			
														Rep 1	Rep 2				Rep 1	Rep 2				
2013	2775	Lait cru	Raw milk	1000 10000	262 21	274 19	260000	270000	5.41 5.43	5.42	/	/	/	/	/	490000	450000	5.69 5.65	5.67	3	a			
2013	2776	Lait demi-écrémé pasteurisé	Pasteurised milk	10 100	0 0	0 0	<10	<10	<1.00 <1.00	<1.00	/	/	/	/	/	600	330	2.78 2.52	2.65	3	a			
2013	2777	Lait entier pasteurisé	Pasteurised milk	10 100	0 0	1 0	<10	10*	<1.00 1.00*	<1.00	/	/	/	/	/	400	10	2.60 1.00	1.80	3	a			
2013	3138	Lait pasteurisé entier	Pasteurised milk	10 100	56 8	174 13	580	1700	2.76 3.23	3.00	/	/	/	/	/	480	710	2.68 2.85	2.77	3	a			
2013	3236	Lait cru	Raw milk	1000 10000	80 7	96 8	79000	95000	4.90 4.98	4.94	/	/	/	/	/	370000	370000	5.57 5.57	5.57	3	a			
2013	3420	Lait cru	Raw milk	100 1000	146 7	99 7	14000	9600	4.15 3.98	4.06	/	/	/	/	/	170000	150000	5.23 5.18	5.20	3	a			
2013	3919	Lait pasteurisé entier	Pasteurised milk	1 10	0 0	0 0	<1	<1	<0 <0	<0	/	/	/	/	/	<10	<10	<1.00 <1.00	<1.00	3	a			
2013	3920	Lait pasteurisé 1/2 écrémé	Pasteurised milk	1 10	0 0	0 0	<1	<1	<0 <0	<0	/	/	/	/	/	<10	<10	<1.00 <1.00	<1.00	3	a			
2013	3921	Lait frais 1/2 écrémé	Pasteurised milk	1 10	3 0	3 0	3*	3*	0.5* 0.5*	0.5*	/	/	/	/	/	<10	<10	<1.00 <1.00	<1.00	3	a			
2013	4003	Lait frais 1/2 écrémé	Pasteurised milk	1 10	3 0	6 0	3*	6*	0.5* 0.8*	0.65*	/	/	/	/	/	330	330	2.52 2.52	2.52	3	a			
2013	4468	Lait cru de vache	Raw cow milk	10000 100000	98 6	113 4	950000	1100000	5.98 6.04	6.01	/	/	/	/	/	1500000	3700000	6.18 6.57	6.37	3	a			
2013	4469	Lait cru de vache	Raw cow milk	1000 10000	25 3	50 3	25000	48000	4.40 4.68	4.54	/	/	/	/	/	49000	49000	4.69 4.69	4.69	3	a			
2013	2778	Poudre de lait	Milk powder	10 100	71 8	56 8	720	580	2.86 2.76	2.81	/	/	/	/	/	1200	1400	3.08 3.15	3.11	3	b			
2013	2779	Poudre de lait	Milk powder	10 100	4 1	12 1	40 Ne	120	1.60 Ne	2.08 1.84	/	/	/	/	/	100	45	2.00 1.65	1.83	3	b			
2013	3419	Poudre de lait	Milk powder	1000 10000	143 11	122 18	140000	130000	5.15 5.11	5.13	/	/	/	/	/	250000	300000	5.40 5.48	5.44	3	b			
2017	125	Lait en poudre écrémé	Skimmed milk powder	10 100	34 9		390		2.59		2.59	390		2.59	2.59	390		2.59		2.59	3	b		
2017	126	Lait en poudre entier	Milk powder	10 100	23 4		250		2.40		2.40	250		2.40	2.40	300		2.48		2.48	3	b		
2013	2780	Glace au lait cru saveur vanille	Vanilla ice cream	10 100	185 19	182 15	1900	1800	3.28 3.26	3.27	/	/	/	/	/	4100	2200	3.61 3.34	3.48	3	c			
2013	3279	Riz au lait	Rice pudding	100 1000	0 0	2 0	<100	200*	<2.00 2.30*	<2.15	/	/	/	/	/	<100		<2.00 <2.00	<2.00	3	c			
2013	3280	Riz au lait	Rice pudding	10 100	16 2	10 2	160	110	2.20 2.04	2.12	/	/	/	/	/	140	100	2.15 2.00	2.07	3	c			
2013	4466	Glace à la vanille	Vanilla ice cream	100 1000	112 5	103 17	11000	11000	4.04 4.04	4.04	/	/	/	/	/	17000	21000	4.23 4.32	4.28	3	c			
2013	4467	Glace à la vanille	Vanilla ice cream	100 1000	22 1	18 3	2100	1900	3.32 3.28	3.30	/	/	/	/	/	2500	2000	3.40 3.30	3.35	3	c			
2017	127	Riz au lait	Rice pudding	100 1000	241 26		24000		4.38		4.38	25000		4.40	4.40	30000		4.48		4.48	3	c		

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

Year of analysis

FRUITS AND VEGETABLES																						
N°	Product (in French)	Product	Reference method: ISO 4833-1*								Alternative method: TEMPO AC										Category	Type
			Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	24h at 30°C and 48h at 4°C					48h at 30°C and 48h at 4°C						
				Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2		Rep 1	Rep 2	Log cfu/g	Mean	Rep 1	Rep 2	Log cfu/g	Mean				
																			Result	Result		
2768	Légumes IV Gamme: chou, carotte, céleri	Vegetables mix	10000 100000	>300 88	>300 94	8800000 N'	9400000 N'	6.94 N'	6.97 N'	6.96	>4900000	>4900000	>6.69	>6.69	>6.69	>4900000	>4900000	>6.69	>6.69	>6.69	4	a
2769	Légumes IV Gamme: chou, carotte, poivrons	Vegetables mix	10000 100000	>300 131	>300 208	13000000 N'	21000000 N'	7.11 N'	7.32 N'	7.22	>4900000	>4900000	>6.69	>6.69	>6.69	>4900000	>4900000	>6.69	>6.69	>6.69	4	a
2927	Légumes IV Gamme: chou, carotte, céleri	Vegetables mix	100000 1000000	86 11	92 15	8800000	9700000	6.94	6.99	6.97	12000000	17000000	7.08	7.23	7.15	21000000	17000000	7.32	7.23	7.28	4	a
2928	Légumes IV Gamme: chou, carotte, frisée, poivrons	Vegetables mix	100000 1000000	71 9	83 9	7300000	8400000	6.86	6.92	6.89	15000000	12000000	7.18	7.08	7.13	15000000	9100000	7.18	6.96	7.07	4	a
3412	Jeunes pousses d'épinards	Spinach baby leaves	100000 1000000	>300 199	>300 270	200000000 N'	270000000 N'	8.30	8.43	8.37	>49000000	>49000000	>7.69	>7.69	>7.69	>49000000	>49000000	>7.69	>7.69	>7.69	4	a
3413	Mélange de salade	Produce mix	1000000	>300	>300	>300000000	>300000000	>8.48	>8.48	>8.48	>49000000	>49000000	>7.69	>7.69	>7.69	>49000000	>49000000	>7.69	>7.69	>7.69	4	a
128	Carottes râpées	Sliced carrots	100000 1000000	49 1		4500000		6.65		6.65	6000000		6.78		6.78	4700000		6.67		6.67	4	a
129	Cœur de laitue	Salad	1000 10000	210 24		210000		5.32		5.32	310000		5.49		5.49	420000		5.62		5.62	4	a
132	Jeunes pousses	Baby leaves	100000 1000000	28 3		2800000		6.45		6.45	3600000		6.56		6.56	3300000		6.52		6.52	4	a
2819	Pulpe d'ananas	Pineapple pulp	10 100	0 0	0	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	32	59	1.51	1.77	1.64	4	b
2820	Pulpe de fruits de la passion	Passion fruit pulp	10 100	1 0	0	10*	<10	1.00*	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	<10	<10	<1.00	<1.00	<1.00	4	b
2821	Pulpe de poire Williams	Pear pulp	100 1000	39 3	47 7	3800	4900	3.58	3.69	3.63	<10	<10	<1.00	<1.00	<1.00	40	<10	1.60	<1.00	1.60	4	b
2924	Pulpe de melon	Melon pulp	100000 1000000	62 3	77 6	5900000	7500000	6.77	6.88	6.82	6800000	7800000	6.83	6.89	6.86	12000000	9100000	7.08	6.96	7.02	4	b
2925	Pulpe de fruits exotiques	Exotic fruits pulp	100 1000	60 8	73 5	6200	7100	3.79	3.85	3.82	11000	5200	4.04	3.72	3.88	8100	8300	3.91	3.92	3.91	4	b
3277	Pulpe de rhubarbe	Rhubarb pulp	10 100	79 5	79 5	760	760	2.88	2.88	2.88	260	210	2.41	2.32	2.37	440	390	2.64	2.59	2.62	4	b
130	Ananas en morceaux	Pine apple pieces	1000 10000	208 15		200000		5.30		5.30	370000		5.57		5.57	370000		5.57		5.57	4	b
131	Framboises brisées	Raspberries pieces	10 100	43 5		440		2.64		2.64	260		2.41		2.41	530		2.72		2.72	4	b
2817	Celeri rémoulade	Deli salad	1000 10000	68 2	59 4	64000	57000	4.81	4.76	4.78	27000	45000	4.43	4.65	4.54	45000	78000	4.65	4.89	4.77	4	c
2818	Duo Carotte Céleri	Deli salad	100 1000	29 0	30 2	2600	2900	3.41	3.46	3.44	1500	1600	3.18	3.20	3.19	4300	2800	3.63	3.45	3.54	4	c
3232	Macédoine de légumes	Deli salad	100 1000	8 2	5 1	800	500	2.90	2.70	2.80	890	1300	2.95	3.11	3.03	990	210	3.00	2.32	2.66	4	c
3233	Carottes râpées	Deli salad	100 1000	139 14	143 19	14000	15000	4.15	4.18	4.16	7300	8300	3.86	3.92	3.89	15000	8300	4.18	3.92	4.05	4	c
3421	Mélange de julienne de légumes surgelée	Frozen vegetables mix	1000 10000	66 12	70 5	71000	68000	4.85	4.83	4.84	150000	120000	5.18	5.08	5.13	490000	300000	5.69	5.48	5.58	4	c

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Year of analysis	SEAFOOD PRODUCTS																						
	N°	Product (in French)	Product	Reference method: ISO 4833-1*								Alternative method: TEMPO AC										Category	Type
				Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	24h at 30°C and 48h at 4°C					48h at 30°C and 48h at 4°C						
					Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2		Rep 1	Rep 2	Log cfu/g	Mean	Rep 1	Rep 2	Log cfu/g	Mean				
																				Result	Result		
2013	2825	Pavé de saumon	Salmon	10000 100000	>300 51	>300 46	5100000	4600000	6.71	6.66	6.69	/	/	/	/	/	7800000	6800000	6.89	6.83	6.86	5	a
2013	2826	Dos de cabillaud	Cod	10000 100000	>300 >300	>300 >300	>30000000	>30000000	>7.48	>7.48	>7.48	/	/	/	/	/	>49000000	>49000000	>7.69	>7.69	>7.69	5	a
2013	2827	Filets de Julienne	Fish fillet	10000 100000	192 13	237 30	1900000	2400000	6.28	6.38	6.33	/	/	/	/	/	5300000	9100000	6.72	6.96	6.84	5	a
2013	2934	Filet de Julienne	Fish fillet	1000 10000	214 22	188 11	210000	180000	5.32	5.26	5.29	/	/	/	/	/	370000	170000	5.57	5.23	5.40	5	a
2013	2935	Filet de lieu noir	Fish fillet	10000 100000	191 17	167 16	1900000	1600000	6.28	6.20	6.24	/	/	/	/	/	450000	400000	5.65	5.60	5.63	5	a
2013	3414	Maquereau frais	Mackerel	1000 10000	29 2	23 3	28000	24000	4.45	4.38	4.41	/	/	/	/	/	30000	37000	4.48	4.57	4.52	5	a
2013	2822	Filets de harengs doux fumés, épices, aromates	Seasoned herrings	1000 10000	109 6	126 12	100000	130000	5.00	5.11	5.06	/	/	/	/	/	300000	91000	5.48	4.96	5.22	5	b
2013	2823	Emincés de saumon fumé: aneth, citron	Marinated salmon	10 100	3 0	5 0	30*	50 Ne	1.48*	1.70 Ne	1.59*	/	/	/	/	/	100	<100	2.00	<2.00	2.00	5	b
2013	2824	Emincés de saumon fumé aux 5 baies	Smoked and marinated salmon	10 100	212 20	186 18	2100	1900	3.32	3.28	3.30	/	/	/	/	/	5300	9400	3.72	3.97	3.85	5	b
2013	2930	Saumon fumé	Smoked salmon	100 1000	0 0	0 0	<100	<100	<2.00	<2.00	<2.00	/	/	/	/	/	<100	<100	<2.00	<2.00	<2.00	5	b
2013	2931	Truite fumée	Smoked trout	100 1000	2 0	0 0	200*	<100	2.30*	<2.00	<2.15	/	/	/	/	/	<100	<100	<2.00	<2.00	<2.00	5	b
2013	3235	Saumon fumé	Smoked salmon	100 1000	59 7	73 5	6000	7100	3.78	3.85	3.81	/	/	/	/	/	3400	4900	3.53	3.69	3.61	5	b
2013	3415	Saumon fumé	Smoked salmon	100 1000	150 8	136 8	14000	13000	4.15	4.11	4.13	/	/	/	/	/	25000	49000	4.40	4.69	4.54	5	b
2017	136	Filets d'anchois marinés	Marinated anchovies' fillets	10 100	18 5		210		2.32		2.32	/		/		/	160		2.20		2.20	5	b
2013	2773	Salade de thon Pommes de terre	Deli salad	10000 100000	298 36	297 23	3000000	2900000	6.48	6.46	6.47	/	/	/	/	/	>4900000	>4900000	>6.69	>6.69	>6.69	5	c
2013	2774	Encornet à l'américaine	Ready to reheat seafood	100 1000	163 15	170 24	16000	18000	4.20	4.26	4.23	/	/	/	/	/	24000	45000	4.38	4.65	4.52	5	c
2013	2926	Riz au crabe	Deli salad	100000 1000000	60 3	96 8	5700000	9500000	6.76	6.98	6.87	910000	910000	5.96	5.96	5.96	1200000	780000	6.08	5.89	5.99	5	c
2013	3278	Salade de thon	Tuna deli salad	100000 1000000	>300 30	>300 55	30000000 N'	55000000 N'	7.48 N'	7.74 N'	7.61 N'	49000000		7.69	>7.69	7.69	>49000000	>49000000	>7.69	>7.69	>7.69	5	c
2013	4094	Cassiolette de Saint Jacques congelée	Ready to reheat scallops	10000 100000	45 2	46 3	430000	450000	5.63	5.65	5.64	490000	490000	5.69	5.69	5.69	550000	550000	5.74	5.74	5.74	5	c
2013	5356	Timbale de Saint Jacques	Ready to reheat scallops	10 100	13 0	13 1	120	130	2.08	2.11	2.10	<1000	<1000	<3.00	<3.00	<3.00	<1000	<1000	<3.00	<3.00	<3.00	5	c
2013	5357	Encornets à l'américaine	Ready to reheat seafood	10 100	101 9	72 11	1000	760	3.00	2.88	2.94	1000	<1000	3.00	<3.00	3.00	<1000	1000	<3.00	3.00	3.00	5	c
2013	5358	Encornets farcis	Ready to reheat seafood	10 100	166 16	167 22	1700	1700	3.23	3.23	3.23	1400	19000	3.15	4.28	3.71	1900	2000	3.28	3.30	3.29	5	c
2013	5440	Timbale de Saint Jacques	Ready to reheat scallops	10 100	46 6	42 4	470	420	2.67	2.62	2.65	210	100	2.32	2.00	2.16	320	320	2.51	2.51	2.51	5	c
2013	5441	Encornets à l'américaine	Ready to reheat seafood	10 100	>300 111	>300 157	11000	16000	4.04	4.20	4.12	21000	15000	4.32	4.18	4.25	19000	12000	4.28	4.08	4.18	5	c

* Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

Year of analysis

PET FOOD																						
N°	Product (in French)	Product	Reference method: ISO 4833-1*								Alternative method: TEMPO AC										Category	Type
			Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	24h at 30°C and 48h at 4°C					48h at 30°C and 48h at 4°C						
				Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2		Rep 1	Rep 2	Log cfu/g	Mean	Rep 1	Rep 2	Log cfu/g	Mean				
																			Result	Result		
2627	Viande pour animaux	Raw meat for pet	10000 100000	215 18	186 16	2100000	1800000	6.32	6.26	6.29	/	/	/	/	/	3000000	>4900000	6.48	>6.69	6.48	6	a
2628	Viande pour animaux	Raw meat for pet	10000 100000	>300 235	>300 218	24000000 N'	22000000 N'	7.38 N'	7.34 N'	7.36 N'	/	/	/	/	/	>4900000	>4900000	>6.69	>6.69	>6.69	6	a
2932	Viande hachée fraîche pour animaux	Raw meat for pet	100000 1000000	86 12	95 10	8900000	9500000	6.95	6.98	6.96	/	/	/	/	/	15000000	9100000	7.18	6.96	7.07	6	a
2933	Viande fraîche pour animaux	Raw meat for pet	1000000 10000000	77 11	41 7	80000000	44000000	7.90	7.64	7.77	/	/	/	/	/	49000000	37000000	7.69	7.57	7.63	6	a
3417	Viande fraîche pour animaux	Fresh meat for pet	100 1000	171 14	177 15	17000	17000	4.23	4.23	4.23	/	/	/	/	/	19000	11000	4.28	4.04	4.16	6	a
3924	Os pour animaux	Bones for pet	100000 1000000	186 25	218 24	19000000	22000000	7.28	7.34	7.31	/	/	/	/	/	25000000	17000000	7.40	7.23	7.31	6	a
3925	Viande bovine pour animaux	Raw meat for pet	100000 1000000	290 29	>300 49	29000000	49000000 N'	7.46	7.69	7.58	/	/	/	/	/	>49000000	>49000000	>7.69	>7.69	>7.69	6	a
2629	Saucisson pour chien	Sausage for dog	10 100	11 2	8 2	120	80 Ne	2.08	1.90 Ne	1.99	/	/	/	/	/	110	110	2.04	2.04	2.04	6	b
2630	Saucisson pour chien	Sausage for dog	10 100	0 0	1 0	<10	10*	<1.00	1.00*	<1.00	/	/	/	/	/	10	33	1.00	1.52	1.26	6	b
3237	Saucisson pour chien	Sausage for dog	10 100	112 21	136 11	1200	1300	3.08	3.11	3.10	/	/	/	/	/	2900	2500	3.46	3.40	3.43	6	b
3416	Saucisson pour chien	Sausage for dog	10 100	0 0	0 0	<10	<10	<1.00	<1.00	<1.00	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	6	b
3922	Tendres bouchées en gelée	Balls for pet	10 100	0 0	0 0	<10	<10	<1.00	<1.00	<1.00	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	6	b
137	Terrine pour chat (saumon)	Terrine for cat	10 100	1 0		10*		1.00*		1.00*	/		/		/	<10		<1.00		<1.00	6	b
138	Terrine pour chat (lapin)	Terrine for cat	10 100	0 0		<10		<1.00		<1.00	/		/		/	<10		<1.00		<1.00	6	b
139	Terrine pour chien (volaille)	Terrine for dog	10 100	0 0		<10		<1.00		<1.00	/		/		/	<10		<1.00		<1.00	6	b
1209	Pâté pour chat (en sachet)	Pâté for cat	10 100	0 0		<10		<1.00		<1.00	/		/		/	<10		<1.00		<1.00	6	b
1210	Pâté pour chat (en sachet)	Pâté for cat	10 100	0 0		<10		<1.00		<1.00	/		/		/	<10		<1.00		<1.00	6	b
1211	Saucisson pour chien	Sausage for dog	10 100	94 13		970		2.99		2.99	/		/		/	1900		3.28		3.28	6	b
1409	Pâté pour chat (volaille)	Pâté for cat	100 1000	40 5		4100		3.61		3.61	/		/		/	37000		4.57		4.57	6	b
1410	Pâté pour chat (lapin)	Pâté for cat	100 1000	151 6		14000		4.15		4.15	/		/		/	78000		4.89		4.89	6	b
2828	Croquettes pour chat	Croquettes for cat	10 100	5 0	7 0	50 Ne	70 Ne	1.70 Ne	1.85 Ne	1.77	/	/	/	/	/	57	10	1.76	1.00	1.38	6	c
3136	Croquettes pour chat	Croquettes for cat	10 100	21 0	19 4	190	210	2.28	2.32	2.30	/	/	/	/	/	33	10	1.52	1.00	1.26	6	c
3137	Croquettes pour chiots	Croquettes for puppy	10 100	5 1	9 1	50 Ne	90 Ne	1.70 Ne	1.95 Ne	1.83 Ne	/	/	/	/	/	21	21	1.32	1.32	1.32	6	c
3281	Brizures de riz	Broken rice	10000 100000	>300 53	>300 42	5300000 N'	4200000 N'	6.72 N'	6.62 N'	6.67	/	/	/	/	/	>4900000	>4900000	>6.69	>6.69	>6.69	6	c
3418	Brizures de riz	Broken rice	100 1000	85 9	81 9	8500	8200	3.93	3.91	3.92	/	/	/	/	/	6400	14000	3.81	4.15	3.98	6	c

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Year of analysis

PET FOOD																						
N°	Product (in French)	Product	Reference method: ISO 4833-1*								Alternative method: TEMPO AC										Category	Type
			Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	24h at 30°C and 48h at 4°C					48h at 30°C and 48h at 4°C						
				Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2		Mean	Rep 1	Rep 2	Log cfu/g	Mean	Rep 1	Rep 2	Log cfu/g	Mean			
Result	Result	Rep 1	Rep 2	Mean	Result	Result	Rep 1	Rep 2	Mean	Result	Result	Rep 1	Rep 2	Mean								
3923	Croquettes adultes	Croquettes for pet	10	13	18	150	200	2.18	2.30	2.24	/	/	/	/	/	360	590	2.56	2.77	2.66	6	c
			100	3	4																	
4004	Croquettes pour chien	Croquettes for dog	10	0	0	<10	<10	<1.00	<1.00	<1.00	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	6	c
			100	0	0																	
4005	Croquettes pour chien	Croquettes for dog	10	1	2	10	20	1.00*	1.30*	1.15*	/	/	/	/	/	<10	<10	<1.00	<1.00	<1.00	6	c
			100	0	0																	
140	Croquettes pour chien (bœuf/céréales)	Croquettes for dog	10	23		240		2.38		2.38	/		/		/	300		2.48		2.48	6	c
			100	3																		

Year of analysis

PRODUCTION ENVIRONMENTAL SAMPLES																							
N°	Product (in French)	Product	Reference method: ISO 4833-1♦								Alternative method: TEMPO AC											Category	Type
			Dilution	cfu/plate		cfu/g		Log cfu/g		Mean	24h at 30°C and 48h at 4°C					48h at 30°C and 48h at 4°C							
				Rep 1	Rep2	Rep 1	Rep2	Rep 1	Rep2		Rep 1	Rep 2	Log cfu/g	Mean	Rep 1	Rep 2	Log cfu/g	Mean					
																			Result	Result	Rep 1		
3124	Eau de laveuse usine poisson	Process water (Fish industry)	1000000 10000000	32 2	29 4	31000000	30000000	7.49 7.48	7.48	7.48	49000000	49000000	7.69 7.69	7.69	7.69	37000000	49000000	7.57 7.69	7.69	7.63	7	a	
3125	Eau sous parage n°1 usine poisson	Process water (Fish industry)	1000000 10000000	30 2	35 4	29000000	35000000	7.46 7.54	7.50	7.50	34000000	47000000	7.53 7.67	7.60	7.60	49000000	48000000	7.69 7.68	7.69	7.69	7	a	
3126	Eau sous épineuse usine poisson	Process water (Fish industry)	1000000 10000000	47 1	57 15	44000000	65000000	7.64 7.81	7.73	7.73	60000000	110000000	7.78 8.04	7.91	7.91	49000000	91000000	7.69 7.96	7.96	7.82	7	a	
3127	Eau sous peleuse usine poisson	Process water (Fish industry)	1000000 10000000	29 3	22 3	29000000	23000000	7.46 7.36	7.41	7.41	31000000	25000000	7.49 7.40	7.44	7.44	25000000	37000000	7.40 7.57	7.48	7.48	7	a	
3131	Eau de rinçage du Stéphan, fabrication crème dessert	Process water (Dairy industry)	10000 100000	0 0	0	<10000	<10000	<4.00 <4.00	<4.00	<4.00	<1000	<1000	<3.00 <3.00	<3.00	<3.00	<1000	<1000	<3.00 <3.00	<3.00	<3.00	7	a	
133	Eau de rinçage cutter (atelier poisson)	Rinsing water (Fish industry)	100000 1000000	49 5		4900000		6.69 6.69	6.69	6.69	5700000		6.76 6.76	6.76	6.76	5000000		6.70 6.70	6.70	6.70	7	a	
3129	Chiffonnette plaque préparation de mélange fabrication pâté de poisson	Wipe (Fish industry)	10000 100000	35 3	40 6	350000	420000	5.54 5.62	5.58	5.58	910000	1200000	5.96 6.08	6.02	6.02	910000	600000	5.96 5.78	5.87	5.87	7	b	
3130	Chiffonnette plaque découpe fabrication pâté de poisson	Wipe (Fish industry)	100000 1000000	>300 58	>300 57	58000000 N'	57000000 N'	7.76 N'	7.76 N'	7.76	55000000	60000000	7.74 7.78	7.76	7.76	91000000	60000000	7.96 7.78	7.87	7.87	7	b	
3132	Chiffonnette balance, fabrication crème dessert	Wipe (Dairy industry)	10 100	108 10	129 9	1100	1300	3.04 3.11	3.08	3.08	<10	<10	<1.00 <1.00	<1.00	<1.00	280	200	2.45 2.30	2.37	2.37	7	b	
3275	Chiffonnette poste de découennage porc (production porc)	Wipe (Meat industry)	10000 100000	57 8	57 6	590000	570000	5.77 5.76	5.76	5.76	490000	490000	5.69 5.69	5.69	5.69	680000	780000	5.83 5.89	5.86	5.86	7	b	
3276	Chiffonnette table de préparation (production porc)	Wipe (Meat industry)	1000 10000	125 17	157 19	130000	160000	5.11 5.20	5.16	5.16	170000	170000	5.23 5.23	5.23	5.23	300000	120000	5.48 5.08	5.28	5.28	7	b	
3530	Chiffonnette atelier saucisserie	Wipe (Delicatessen industry)	100 1000	0 0	0	<100	<100	<2.00 <2.00	<2.00	<2.00	<100	<100	<2.00 <2.00	<2.00	<2.00	<100	100	<2.00 2.00	2.00	2.00	7	b	
4092	Lingette table inox en cours de process	Wipe	1000 10000	145 11	172 19	140000	170000	5.15 5.23	5.19	5.19	170000	120000	5.23 5.08	5.15	5.15	240000	530000	5.38 5.72	5.55	5.55	7	b	
4093	Lingette table découpe en cours de process	Wipe	100 1000	175 17	167 22	17000	17000	4.23 4.23	4.23	4.23	20000	12000	4.30 4.08	4.19	4.19	26000	33000	4.41 4.52	4.47	4.47	7	b	
3128	Poussières dessus bloc électrique usine poisson	Dusts (Fish industry)	10000 100000	0 0	0	<10000	<10000	<4.00 <4.00	<4.00	<4.00	<1000	<1000	<3.00 <3.00	<3.00	<3.00	<1000	<1000	<3.00 <3.00	<3.00	<3.00	7	c	
3274	Chiffonnette poussières armoires électrique (production carnés)	Dusts (Meat industry)	10 100	28 16	48 5	400	480	2.60 2.68	2.64	2.64	180	140	2.26 2.15	2.20	2.20	1300	1100	3.11 3.04	3.08	3.08	7	c	
3531	Poussières environnement laitier	Dusts (Dairy industry)	10 100	115 14	117 11	1200	1200	3.08 3.08	3.08	3.08	1100	380	3.04 2.58	2.81	2.81	2000	2400	3.30 3.38	3.34	3.34	7	c	
3532	Poussières environnement laitier	Dusts (Dairy industry)	100 1000	76 12	76 9	8000	7700	3.90 3.89	3.89	3.89	6700	4800	3.83 3.68	3.75	3.75	11000	11000	4.04 4.04	4.04	4.04	7	c	
1407	Poussières environnement laitierie	Dust from dairy industry environment	100000 1000000	21 0		1900000		6.28 6.28	6.28	6.28	330000		5.52 5.52	5.52	5.52	630000		5.80 5.80	5.80	5.80	7	c	
1408	Poussières environnement laitierie	Dust from dairy industry environment	100000 1000000	20 4		2200000		6.34 6.34	6.34	6.34	310000		5.49 5.49	5.49	5.49	1500000		6.18 6.18	6.18	6.18	7	c	

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

Appendix 4 - Accuracy profile study: summarized results

Incubation time: 24 h

(Food) Category 1			Raw meat									
(Food) Type 1			Ground beef									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1470-1474	Ground beef	1	580	1500	560	930	570	170	360	86	130	44
1256-1260	Ground beef	1	8900	8300	9900	12000	7700	6000	11000	11000	6800	4500
1475-1479	Ground beef	2	88000	75000	41000	71000	42000	93000	33000	33000	150000	29000
1261-1265	Ground beef	2	560000	650000	560000	350000	820000	600000	1100000	680000	530000	600000
1480-1484	Ground beef	3	280000	260000	560000	440000	500000	390000	570000	360000	330000	440000
1266-1270	Ground beef	3	7400000	6300000	5500000	6000000	2900000	15000000	6000000	6000000	15000000	3700000
(Food) Category 3			Vegetables									
(Food) Type 3			Green beans									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
3880-3884	Green beans	1	6900	6700	4800	7500	4600	6000	5000	7800	5000	6000
3895-3899	Green beans	1	5100	6500	6200	4800	5800	12000	4100	6700	9100	6800
3885-3889	Green beans	2	48000	65000	53000	62000	44000	110000	68000	120000	78000	91000
3900-3904	Green beans	2	55000	64000	48000	57000	54000	150000	50000	78000	48000	120000
3890-3894	Green beans	3	1900000	2000000	1900000	1700000	2000000	3000000	3000000	4400000	2500000	3700000
3905-3909	Green beans	3	1900000	3600000	1700000	1900000	1600000	3700000	1700000	2500000	3700000	1500000
(Food) Category 5			Production environmental samples									
(Food) Type 5			Rinse water									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1629-1633	Rinse water	1	230	250	310	220	330	280	260	220	280	330
1644-1648	Rinse water	1	300	230	280	260	260	510	400	360	570	220
1634-1638	Rinse water	2	8600	5800	8500	6800	6900	5800	11000	11000	9500	11000
1649-1653	Rinse water	2	7600	7900	7700	6400	7000	20000	14000	8300	12000	7300
1639-1643	Rinse water	3	810000	850000	750000	550000	1000000	600000	1100000	1200000	910000	1100000
1657-1658	Rinse water	3	720000	550000	660000	660000	750000	600000	530000	910000	910000	1200000

(Food) Category 2			RTE									
(Food) Type 2			Liver pâté									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
366-370	Liver pâté	1	340	380	360	340	340	390	300	570	300	460
381-385	Liver pâté	1	530	350	350	430	430	170	280	280	190	360
371-375	Liver pâté	2	19000	10000	8300	15000	10000	17000	20000	17000	24000	11000
386-390	Liver pâté	2	13000	14000	12000	7700	9600	13000	22000	8100	22000	13000
376-380	Liver pâté	3	1600000	1100000	1100000	1400000	1700000	2100000	2100000	2100000	680000	2500000
391-395	Liver pâté	3	920000	750000	1100000	1000000	1100000	2100000	1200000	1500000	780000	1200000
(Food) Category 4			Seafood									
(Food) Type 4			Seafood terrine									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1514-1518	Seafood terrine	1	310	300	150	170	220	120	190	230	130	200
1519-1523	Seafood terrine	1	80	210	150	240	120	230	130	220	220	190
795-799	Seafood terrine	2	4700	4000	2700	3400	2900	5100	4000	3600	3300	3000
810-814	Seafood terrine	2	3600	4500	3900	3100	3500	8300	5300	5800	4600	5300
800-804	Seafood terrine	3	320000	270000	400000	380000	420000	370000	450000	340000	680000	380000
815-819	Seafood terrine	3	310000	320000	470000	330000	300000	780000	210000	370000	500000	370000

Incubation time: 40 h

(Food) Category 1			Raw meat									
(Food) Type 1			Ground beef									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1470-1474	Ground beef	1	580	1500	560	930	570	140	1000	160	480	160
1256-1260	Ground beef	1	8900	8300	9900	12000	7700	6800	12000	9100	15000	6800
1475-1479	Ground beef	2	88000	75000	41000	71000	42000	150000	93000	44000	81000	73000
1261-1265	Ground beef	2	560000	650000	560000	350000	820000	1200000	1200000	2100000	780000	910000
1480-1484	Ground beef	3	280000	260000	560000	440000	500000	390000	480000	850000	480000	330000
1266-1270	Ground beef	3	7400000	6300000	5500000	6000000	2900000	7800000	11000000	9100000	11000000	3100000

(Food) Category 3			Dairy									
(Food) Type 3			Dairy dessert									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
2311-2315	Dairy dessert	1	160	140	80	160	130	150	150	59	100	170
2326-2330	Dairy dessert	1	120	130	130	120	220	210	190	110	140	120
2316-2320	Dairy dessert	2	5100	6000	4500	5100	8500	7100	11000	6300	7100	12000
2331-2335	Dairy dessert	2	4800	8100	5600	3500	5800	7300	9300	5300	4400	6400
2321-2325	Dairy dessert	3	300000	300000	360000	370000	240000	500000	370000	500000	680000	280000
2336-2340	Dairy dessert	3	250000	340000	480000	350000	270000	500000	600000	500000	430000	200000

(Food) Category 5			Seafood									
(Food) Type 5			Seafood terrine									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1514-1518	Seafood terrine	1	310	300	150	170	220	260	170	220	140	200
1519-1523	Seafood terrine	1	80	210	150	240	120	190	160	120	190	480
795-799	Seafood terrine	2	4700	4000	2700	3400	2900	4800	6200	4000	4800	4900
810-814	Seafood terrine	2	3600	4500	3900	3100	3500	4000	5700	5600	5700	5300
800-804	Seafood terrine	3	320000	270000	400000	380000	420000	450000	440000	480000	370000	600000
815-819	Seafood terrine	3	310000	320000	470000	330000	300000	400000	370000	450000	370000	910000

(Food) Category 7			Production environmental samples									
(Food) Type 7			Rinse water									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1629-1633	Rinse water	1	230	250	310	220	330	240	430	260	300	260
1644-1648	Rinse water	1	300	230	280	260	260	200	290	280	190	630
1634-1638	Rinse water	2	8600	5800	8500	6800	6900	14000	11000	7000	17000	10000
1649-1653	Rinse water	2	7600	7900	7700	6400	7000	17000	12000	11000	16000	9500
1639-1643	Rinse water	3	810000	850000	750000	550000	1000000	910000	1700000	530000	1100000	1200000
1657-1658	Rinse water	3	720000	550000	660000	660000	750000	910000	1500000	680000	680000	780000

(Food) Category 2			RTE									
(Food) Type 2			Liver pâté									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
366-370	Liver pâté	1	340	380	360	340	340	330	280	360	220	440
381-385	Liver pâté	1	530	350	350	430	430	530	330	330	440	300
371-375	Liver pâté	2	19000	10000	8300	15000	10000	9500	19000	11000	14000	20000
386-390	Liver pâté	2	13000	14000	12000	7700	9600	19000	14000	7600	11000	12000
376-380	Liver pâté	3	1600000	1100000	1100000	1400000	1700000	1500000	2100000	2100000	2500000	1300000
391-395	Liver pâté	3	920000	750000	1100000	1000000	1100000	910000	1100000	1700000	1700000	1200000

(Food) Category 4			Vegetables									
(Food) Type 4			Green beans									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
3880-3884	Green beans	1	6900	6700	4800	7500	4600	9100	9100	6000	7800	11000
3895-3899	Green beans	1	5100	6500	6200	4800	5800	6800	6800	6000	6800	11000
3885-3889	Green beans	2	48000	65000	53000	62000	44000	110000	150000	120000	68000	45000
3900-3904	Green beans	2	55000	64000	48000	57000	54000	78000	150000	78000	82000	60000
3890-3894	Green beans	3	1900000	2000000	1900000	1700000	2000000	1700000	3700000	3700000	2500000	4900000
3905-3909	Green beans	3	1900000	3600000	1700000	1900000	1600000	2500000	3000000	2100000	1700000	2100000

(Food) Category 6			Pet food									
(Food) Type 6			Pâté for dog									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1524-1528	Pâté for dog	1	740	470	660	660	660	1100	730	1300	1300	1900
1529-1533	Pâté for dog	1	630	970	580	570	670	830	850	930	1100	950
900-904	Pâté for dog	2	18000	27000	23000	23000	20000	20000	15000	19000	24000	26000
915-919	Pâté for dog	2	20000	26000	25000	25000	19000	22000	34000	17000	60000	24000
905-909	Pâté for dog	3	2100000	2200000	2200000	2000000	1800000	3700000	2100000	3700000	530000	1700000
920-924	Pâté for dog	3	2200000	2300000	2300000	2800000	2100000	2100000	1700000	2500000	3700000	1700000

Incubation time: 48 h

(Food) Category 1			Raw meat									
(Food) Type 1			Ground beef									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1470-1474	Ground beef	1	580	1500	560	930	570	210	1000	220	520	210
1256-1260	Ground beef	1	8900	8300	9900	12000	7700	6800	12000	9100	15000	6800
1475-1479	Ground beef	2	88000	75000	41000	71000	42000	150000	93000	44000	81000	73000
1261-1265	Ground beef	2	560000	650000	560000	350000	820000	1200000	1200000	2100000	780000	910000
1480-1484	Ground beef	3	280000	260000	560000	440000	500000	390000	480000	1500000	480000	330000
1266-1270	Ground beef	3	7400000	6300000	5500000	6000000	2900000	7800000	12000000	9100000	12000000	3100000

(Food) Category 3			Dairy									
(Food) Type 3			Dairy dessert									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
2311-2315	Dairy dessert	1	160	140	80	160	130	150	460	59	120	170
2326-2330	Dairy dessert	1	120	130	130	120	220	250	190	110	140	120
2316-2320	Dairy dessert	2	5100	6000	4500	5100	8500	7100	11000	6300	7100	12000
2331-2335	Dairy dessert	2	4800	8100	5600	3500	5800	7300	9300	5300	4400	6400
2321-2325	Dairy dessert	3	300000	300000	360000	370000	240000	500000	370000	500000	680000	280000
2336-2340	Dairy dessert	3	250000	340000	480000	350000	270000	550000	600000	500000	520000	200000

(Food) Category 5			Seafood									
(Food) Type 5			Seafood terrine									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1514-1518	Seafood terrine	1	310	300	150	170	220	260	170	220	140	200
1519-1523	Seafood terrine	1	80	210	150	240	120	190	160	120	190	480
795-799	Seafood terrine	2	4700	4000	2700	3400	2900	4800	6200	4000	4800	4900
810-814	Seafood terrine	2	3600	4500	3900	3100	3500	4000	5700	5600	5700	5300
800-804	Seafood terrine	3	320000	270000	400000	380000	420000	450000	440000	480000	370000	600000
815-819	Seafood terrine	3	310000	320000	470000	330000	300000	400000	370000	450000	370000	910000

(Food) Category 7			Production environmental samples									
(Food) Type 7			Rinse water									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1629-1633	Rinse water	1	230	250	310	220	330	240	430	260	300	260
1644-1648	Rinse water	1	300	230	280	260	260	200	290	280	190	710
1634-1638	Rinse water	2	8600	5800	8500	6800	6900	14000	11000	7000	17000	10000
1649-1653	Rinse water	2	7600	7900	7700	6400	7000	17000	12000	11000	18000	9500
1639-1643	Rinse water	3	810000	850000	750000	550000	1000000	910000	1700000	530000	1100000	1200000
1657-1658	Rinse water	3	720000	550000	660000	660000	750000	910000	1500000	680000	680000	780000

(Food) Category 2			RTE									
(Food) Type 2			Liver pâté									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
366-370	Liver pâté	1	340	380	360	340	340	330	280	360	220	440
381-385	Liver pâté	1	530	350	350	430	430	530	330	330	440	300
371-375	Liver pâté	2	19000	10000	8300	15000	10000	9500	19000	11000	14000	20000
386-390	Liver pâté	2	13000	14000	12000	7700	9600	19000	14000	7600	12000	12000
376-380	Liver pâté	3	1600000	1100000	1100000	1400000	1700000	1500000	2100000	2100000	2500000	1300000
391-395	Liver pâté	3	920000	750000	1100000	1000000	1100000	910000	1100000	1700000	1700000	1200000

(Food) Category 4			Vegetables									
(Food) Type 4			Green beans									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
3880-3884	Green beans	1	6900	6700	4800	7500	4600	9100	9100	6000	7800	11000
3895-3899	Green beans	1	5100	6500	6200	4800	5800	6800	6800	6000	6800	11000
3885-3889	Green beans	2	48000	65000	53000	62000	44000	110000	150000	120000	68000	49000
3900-3904	Green beans	2	55000	64000	48000	57000	54000	78000	150000	78000	82000	60000
3890-3894	Green beans	3	1900000	2000000	1900000	1700000	2000000	1700000	3700000	3700000	2500000	4900000
3905-3909	Green beans	3	1900000	3600000	1700000	1900000	1600000	2500000	3000000	2100000	1700000	2100000

(Food) Category 6			Pet food									
(Food) Type 6			Pâté for dog									
			Reference method result					Alternative method result				
Sample Name	(Food) item	Level	rep 1	rep 2	rep 3	rep 4	rep 5	rep 1	rep 2	rep 3	rep 4	rep 5
1524-1528	Pâté for dog	1	740	470	660	660	660	1100	730	1300	1300	1900
1529-1533	Pâté for dog	1	630	970	580	570	670	830	850	930	1100	950
900-904	Pâté for dog	2	18000	27000	23000	23000	20000	20000	15000	19000	24000	26000
915-919	Pâté for dog	2	20000	26000	25000	25000	19000	22000	34000	17000	60000	24000
905-909	Pâté for dog	3	2100000	2200000	2200000	2000000	1800000	3700000	2100000	3700000	530000	1700000
920-924	Pâté for dog	3	2200000	2300000	2300000	2800000	2100000	2100000	1700000	2500000	3700000	1700000

Appendix 5 – Quantification limits (LOQ): raw data

Sample N°	Matrix	Alternative method: Tempo AC					
		Observed value	Value for calculation	Yi	$\bar{y}$	So	LOQ
1485	Beef meat	<10	10	1	1	0	0
1486		<10	10	1			
1487		<10	10	1			
1488		<10	10	1			
1489		<10	10	1			
1490		<10	10	1			
1491		<10	10	1			
1492		<10	10	1			
1493		<10	10	1			
1494		<10	10	1			
396	Liver pâté	<10	10	1	1	0	0
397		<10	10	1			
398		<10	10	1			
399		<10	10	1			
400		<10	10	1			
401		<10	10	1			
402		<10	10	1			
403		<10	10	1			
404		<10	10	1			
405		<10	10	1			
2341	Dairy dessert	10	10	1	1	0	0
2342		10	10	1			
2343		10	10	1			
2344		<10	10	1			
2345		<10	10	1			
2346		<10	10	1			
2347		<10	10	1			
2348		<10	10	1			
2349		<10	10	1			
2350		<10	10	1			
630	Green beans	<10	10	1	1	0	0
631		<10	10	1			
632		<10	10	1			
633		<10	10	1			
634		<10	10	1			
635		<10	10	1			
636		<10	10	1			
637		<10	10	1			
638		<10	10	1			
639		<10	10	1			
820	Seafood terrine	<10	10	1	1	0	0
821		<10	10	1			
822		<10	10	1			
823		<10	10	1			
824		<10	10	1			
825		<10	10	1			
826		<10	10	1			
827		<10	10	1			
828		<10	10	1			
829		21	21	1.32			

Sample N°	Matrix	Alternative method: Tempo AC					
		Observed value	Value for calculation	Yi	$\bar{y}$	So	LOQ
1554	Pet food	<10	10	1	1	0	0
1555		<10	10	1			
1556		<10	10	1			
1557		<10	10	1			
1558		<10	10	1			
1559		<10	10	1			
1560		<10	10	1			
1561		<10	10	1			
1562		<10	10	1			
1563		<10	10	1			
1659	Rinse water	<10	10	1	1	0	0
1660		<10	10	1			
1661		<10	10	1			
1662		<10	10	1			
1663		<10	10	1			
1664		<10	10	1			
1665		<10	10	1			
1666		<10	10	1			
1667		<10	10	1			
1668		<10	10	1			

Appendix 6 – Results obtained by each collaborator laboratory and the expert laboratory

Lab	Sample n°	Reference method (ISO 4833-1)				Alternative method (TEMPO AC)			
		Dilution	cfu/plate a	cfu/ml	log cfu/ml	D 1/40	D1/400	log cfu/ml (1/40)	log cfu/ml (1/400)
A	A3	10	15	160	2.20	43	<100	1.63	<2
		100	3						
	A8	10	3	<40	<1.60	10	<100	1.00	<2
		100	0						
	A1	10	63	660	2.82	750	690	2.88	2.84
		100	9						
	A5	10	89	960	2.98	630	860	2.80	2.93
		100	17						
	A2	100	76	7600	3.88	11000	7300	4.04	3.86
		1000	8						
	A4	100	56	5800	3.76	5000	9500	3.70	3.98
		1000	8						
	A6	1000	67	67000	4.83	>49000	91000	>4.69	4.96
		10000	7						
B	B3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	B8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	B1	10	45	460	2.66	580	730	2.76	2.86
		100	5						
	B5	10	55	570	2.76	570	450	2.76	2.65
		100	8						
	B2	100	66	6800	3.83	11000	8100	4.04	3.91
		1000	9						
	B4	100	57	5500	3.74	7800	5700	3.89	3.76
		1000	3						
	B6	1000	84	85000	4.93	49000	68000	4.69	4.83
		10000	10						
	B7	1000	105	110000	5.04	>49000	47000	>4.69	4.67
		10000	14						

Lab	Sample n°	Reference method (ISO 4833-1)				Alternative method (TEMPO AC)			
		Dilution	cfu/plate a	cfu/ml	log cfu/ml	D 1/40	D1/400	log cfu/ml (1/40)	log cfu/ml (1/400)
C	C3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	C8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	C1	10	46	460	2.66	830	330	2.92	2.52
		100	4						
	C5	10	43	430	2.63	570	590	2.76	2.77
		100	4						
	C2	100	60	5800	3.76	5200	5100	3.72	3.71
		1000	4						
	C4	100	44	4500	3.65	5500	4200	3.74	3.62
		1000	6						
	C6	1000	51	49000	4.69	>49000	45000	>4.69	4.65
		10000	3						
D	D3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	D8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	D1	10	75	750	2.88	1300	710	3.11	2.85
		100	7						
	D5	10	62	620	2.79	500	990	2.70	3.00
		100	6						
	D2	100	66	6500	3.81	11000	14000	4.04	4.15
		1000	6						
	D4	100	87	8400	3.92	5300	4400	3.72	3.64
		1000	5						
	D6	1000	73	74000	4.87	49000	48000	4.69	4.68
		10000	8						
	D7	1000	57	55000	4.74	49000	60000	4.69	4.78
		10000	3						

Lab	Sample n°	Reference method (ISO 4833-1)				Alternative method (TEMPO AC)			
		Dilution	cfu/plate a	cfu/ml	log cfu/ml	D 1/40	D1/400	log cfu/ml (1/40)	log cfu/ml (1/400)
E	E3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	E8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	E1	10	31	330	2.52	1200	590	3.08	2.77
		100	5						
	E5	10	34	380	2.58	530	450	2.72	2.65
		100	8						
	E2	100	35	3700	3.57	6000	4600	3.78	3.66
		1000	6						
	E4	100	46	5400	3.73	4500	8300	3.65	3.92
		1000	13						
	E6	1000	34	34000	4.53	>49000	91000	>4.69	4.96
		10000	3						
	E7	1000	29	31000	4.49	>49000	68000	>4.69	4.83
		10000	5						
F	F3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	F8	100	28	2800	3.45	3400	21000	3.53	4.32
		1000	3						
	F1	10	57	570	2.76	530	590	2.72	2.77
		100	6						
	F5	10	47	510	2.71	2400	5700	3.38	3.76
		100	9						
	F2	100	35	3500	3.54	10000	8100	4.00	3.91
		1000	3						
	F4	100	25	2500	3.40	5500	4600	3.74	3.66
		1000	3						
	F6	1000	31	32000	4.51	37000	60000	4.57	4.78
		10000	4						
	F7	1000	35	35000	4.54	49000	60000	4.69	4.78
		10000	3						

Lab	Sample n°	Reference method (ISO 4833-1)				Alternative method (TEMPO AC)			
		Dilution	cfu/plate a	cfu/ml	log cfu/ml	D 1/40	D1/400	log cfu/ml (1/40)	log cfu/ml (1/400)
G	G3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	G8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	G1	10	43	460	2.66	490	440	2.69	2.64
		100	8						
	G5	10	90	860	2.93	830	540	2.92	2.73
		100	5						
	G2	100	60	5900	3.77	7800	8100	3.89	3.91
		1000	5						
	G4	100	50	5200	3.72	6000	4400	3.78	3.64
		1000	7						
	G6	1000	39	39000	4.59	37000	50000	4.57	4.70
		10000	4						
H	H3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	H8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	H1	10	51	520	2.72	620	450	2.79	2.65
		100	6						
	H5	10	49	460	2.66	610	450	2.79	2.65
		100	2						
	H2	100	41	4200	3.62	6700	6400	3.83	3.81
		1000	5						
	H4	100	58	5800	3.76	5500	5100	3.74	3.71
		1000	6						
	H6	1000	45	43000	4.63	>49000	78000	>4.69	4.89
		10000	2						
	H7	1000	56	55000	4.74	49000	50000	4.69	4.70
		10000	4						

Lab	Sample n°	Reference method (ISO 4833-1)				Alternative method (TEMPO AC)			
		Dilution	cfu/plate a	cfu/ml	log cfu/ml	D 1/40	D1/400	log cfu/ml (1/40)	log cfu/ml (1/400)
I	I3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	I8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	I1	10	61	680	2.83	700	330	2.85	2.52
		100	14						
	I5	10	43	470	2.67	510	330	2.71	2.52
		100	9						
	I2	100	45	4200	3.62	6000	5100	3.78	3.71
		1000	1						
	I4	100	40	3900	3.59	5500	10000	3.74	4.00
		1000	3						
	I6	1000	51	50000	4.70	>49000	210000	>4.69	5.32
		10000	4						
	I7	1000	28	27000	4.43	49000	55000	4.69	4.74
		10000	2						
J	J3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	J8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	J1	10	58	590	2.77	1200	570	3.08	2.76
		100	7						
	J5	10	40	400	2.60	240	450	2.38	2.65
		100	4						
	J2	100	43	3900	3.59	6000	3000	3.78	3.48
		1000	0						
	J4	100	38	3600	3.56	6000	6400	3.78	3.81
		1000	2						
	J6	1000	42	41000	4.61	>49000	37000	>4.69	4.57
		10000	3						
	J7	1000	50	47000	4.67	49000	67000	4.69	4.83
		10000	2						

Lab	Sample n°	Reference method (ISO 4833-1)				Alternative method (TEMPO AC)			
		Dilution	cfu/plate a	cfu/ml	log cfu/ml	D 1/40	D1/400	log cfu/ml (1/40)	log cfu/ml (1/400)
K	K3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	K8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	K1	10	50	500	2.70	520	100	2.72	2.00
		100	5						
	K5	10	44	430	2.63	1100	210	3.04	2.32
		100	3						
	K2	100	54	5600	3.75	15000	5700	4.18	3.76
		1000	8						
	K4	100	43	4500	3.65	6000	4300	3.78	3.63
		1000	6						
	K6	1000	43	45000	4.65	>49000	68000	>4.69	4.83
		10000	7						
	K7	1000	47	47000	4.67	>49000	50000	>4.69	4.70
		10000	5						
L	L3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	L8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	L1	10	72	690	2.84	730	210	2.86	2.32
		100	4						
	L5	10	55	530	2.72	480	730	2.68	2.86
		100	3						
	L2	100	70	6900	3.84	6800	13000	3.83	4.11
		1000	6						
	L4	100	52	5200	3.72	6800	6300	3.83	3.80
		1000	5						
	L6	1000	48	47000	4.67	>49000	47000	>4.69	4.67
		10000	4						
	L7	1000	43	43000	4.63	>49000	53000	>4.69	4.72
		10000	4						

Lab	Sample n°	Reference method (ISO 4833-1)				Alternative method (TEMPO AC)			
		Dilution	cfu/plate a	cfu/ml	log cfu/ml	D 1/40	D1/400	log cfu/ml (1/40)	log cfu/ml (1/400)
M	M3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	M8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	M1	10	47	470	2.67	710	450	2.85	2.65
		100	5						
	M5	10	41	410	2.61	810	990	2.91	3.00
		100	4						
	M2	100	45	4500	3.65	6800	6400	3.83	3.81
		1000	5						
	M4	100	52	5100	3.71	4500	9500	3.65	3.98
		1000	4						
	M6	1000	62	64000	4.81	49000	110000	4.69	5.04
		10000	8						
N	N3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	N8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	N1	10	70	690	2.84	640	520	2.81	2.72
		100	6						
	N5	10	51	500	2.70	640	590	2.81	2.77
		100	4						
	N2	100	49	4900	3.69	6000	5200	3.78	3.72
		1000	5						
	N4	100	57	5700	3.76	6000	7100	3.78	3.85
		1000	6						
	N6	1000	58	58000	4.76	49000	60000	4.69	4.78
		10000	6						
	N7	1000	48	48000	4.68	49000	53000	4.69	4.72
		10000	5						

Lab	Sample n°	Reference method (ISO 4833-1)				Alternative method (TEMPO AC)			
		Dilution	cfu/plate a	cfu/ml	log cfu/ml	D 1/40	D1/400	log cfu/ml (1/40)	log cfu/ml (1/400)
O	O3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	O8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	O1	10	46	440	2.64	350	1200	2.54	3.08
		100	2						
	O5	10	45	490	2.69	930	730	2.97	2.86
		100	9						
	O2	100	43	4500	3.65	7400	11000	3.87	4.04
		1000	6						
	O4	100	50	5000	3.70	6800	11000	3.83	4.04
		1000	5						
	O6	1000	48	48000	4.68	>49000	150000	>4.69	5.18
		10000	5						
P	P3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	P8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	P1	10	51	530	2.72	480	590	2.68	2.77
		100	7						
	P5	10	45	460	2.66	500	570	2.70	2.76
		100	6						
	P2	100	52	5400	3.73	6800	4600	3.83	3.66
		1000	7						
	P4	100	55	5500	3.74	9100	8800	3.96	3.94
		1000	5						
	P6	1000	49	45000	4.65	49000	60000	4.69	4.78
		10000	1						
	P7	1000	40	42000	4.62	49000	74000	4.69	4.87
		10000	6						

Lab	Sample n°	Reference method (ISO 4833-1) ♦				Alternative method (TEMPO AC)			
		Dilution	cfu/plate a	cfu/ml	log cfu/ml	D 1/40	D1/400	log cfu/ml (1/40)	log cfu/ml (1/400)
ADRIA	Q3	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	Q8	10	0	<10	<1	<10	<100	<1	<2
		100	0						
	Q1	10	63	660	2.82	360	450	2.56	2.65
		100	9						
	Q5	10	52	510	2.71	480	730	2.68	2.86
		100	4						
	Q2	100	53	5500	3.74	12000	8100	4.08	3.91
		1000	8						
	Q4	100	46	4500	3.65	9100	7100	3.96	3.85
		1000	3						
	Q6	1000	40	42000	4.62	49000	82000	4.69	4.91
		10000	6						
	Q7	1000	50	48000	4.68	37000	68000	4.57	4.83
		10000	3						

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

Appendix 7 - Inter-laboratory study: accuracy profile calculation (statistical calculations)

Accuracy profile			
Study Name	TEMPO AC		
Date	2013		
Coordinator	ADRIA		
Tolerance probability (beta)	80%	80%	80%
Acceptability limit in log (lambda)	0.50	0.50	0.50

Application of clause 6.2.3

Step 8: If any of the values for the β -ETI fall outside the acceptability limits, calculate the pooled average reproducibility standard deviation of the reference method.

Step 9: Calculate new acceptability limits as a function of this standard deviation.

	Alternative method				Reference method		
Levels	Low	Medium	High		Low	Medium	High
Target value	2.720	3.701	4.688				
Number of participants (K)	16	16	16		16	16	16
Average for alternative method	2.824	3.829	4.824		2.720	3.701	4.688
Repeatability standard deviation (sr)	0.227	0.131	0.148		0.084	0.069	0.071
Between-labs standard deviation (sL)	0.000	0.000	0.066		0.061	0.084	0.114
Reproducibility standard deviation (sR)	0.227	0.131	0.162		0.104	0.109	0.134
Corrected number of dof	30.968	30.968	29.833		27.188	22.271	19.808
Coverage factor	1.330	1.330	1.334				
Interpolated Student t	1.309	1.309	1.311				
Tolerance interval standard deviation	0.2301	0.1335	0.1650				
Lower TI limit	2.522	3.654	4.607				
Upper TI limit	3.125	4.004	5.040				
Bias	0.104	0.128	0.135				
Relative Lower TI limit (beta = 80%)	-0.198	-0.047	-0.081				
Relative Upper TI limit (beta = 80%)	0.405	0.303	0.352				
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	0.116
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