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

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

Quantitative method

REBECCA base & REBECCA+EB
Certificate # AES 10/06-01/08
for the enumeration of β-glucuronidase positive *Escherichia coli* in food and feed products

Expert Laboratory: Laboratoire MICROSEPT
ZA de la Sablonnière
15 rue Denis Papin
49220 LE LION D'ANGERS
FRANCE

For: bioMérieux
Chemin de l'Orme
69280 MARCY L'ETOILE
FRANCE

This report contains 85 pages, including 47 pages of appendices.
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Version 0 December 18th, 2023

Preamble

- **Protocols of validation :**

- **EN ISO 16140-1 and NF EN ISO 16140-2 (September 2016): Microbiology of the food chain — Method validation**
  Part 1: Vocabulary.
  Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method.

- **Requirements regarding comparison and interlaboratory studies for implementation of the standard EN ISO 16140-2 (project version 7).**

- **Reference method:**

- **NF ISO 16649-2 (July 2001):** horizontal method for the enumeration of β-glucuronidase positive *Escherichia coli*– Colony count technique at 44°C using 5-bromo-4-chloro-3-indolyl β-glucuronate

- **Application scope:**

- **All human food products** by a validation testing of a broad range of foods, including:
  - meat products,
  - dairy and egg products,
  - seafood products,
  - vegetal products,
  - ready-to-eat and ready-to-reheat products,
- **Feeds.**

- **Certification body:**

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

Definitions

- **Method comparison study**

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

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

- **Relative trueness study**

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

- **Accuracy profile study**

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

- **Inclusivity and exclusivity study**

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

- **Interlaboratory study**

The interlaboratory study is a study performed by multiple laboratories testing identical samples at the same time, the results of which are used to estimate alternative-method performance parameters.
The aim of an interlaboratory study is to determine the variability of the results obtained in different laboratories using identical samples.

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Appendix B: Protocol of the reference method
Appendix C: Artificial contaminations
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Appendix E: Relative trueness study - Statistical calculations
Appendix F: Accuracy profile study - Raw results
Appendix G: Selectivity - Raw results
Appendix H: Interlaboratory study - Raw results

1. Introduction

REBECCA™ Base and REBECCA™ + EB methods are validated by AFNOR Certification under the NF VALIDATION mark with the certification number AES 10/06-01/08 according to the standard ISO 16140/A1:2011. The method is intended for all human food products and feed products since its initial validation.

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

Table 1: Steps of the validation AFNOR certification

Study	Date	Standard	Expert Laboratory	Observation
Initial validation	2008	ISO 16140:2003	Institut Scientifique d'hygiène et d'Analyse	/
First renewal	October 2011	ISO 16140/A1:2011	Institut Scientifique d'hygiène et d'Analyse	/
Second renewal	October 2015	ISO 16140/A1:2011	Institut Scientifique d'hygiène et d'Analyse	/
Third renewal	November 2019	ISO 16140-2:2016	Microsept	Additional tests to fulfill the updated validation standard and reinterpretation
Project of fourth renewal	December 2023	ISO 16140-2:2016	Microsept	/

This summary report introduces all the validation steps results for the AFNOR Certification validation of the REBECCA™ Base and REBECCA™ + EB methods according to the standard ISO 16140-2:2016 for a broad range of foods and for feeds.
A part of the results set out in this report were produced during validation tests carried out by Institut Scientifique d'hygiène et d'Analyse as part of NF Validation, in accordance with prevailing requirements.

The remaining part of the results is constituted by the analyses performed by the Laboratory Microsept as part of the requirements of the updated validation standard.

2. Protocols of the methods

2.1. Alternative method

2.1.1. Principle of the method

REBECCA is a selective medium for the enumeration of β-D-glucuronidase-positive *Escherichia coli* and Enterobacteriaceae (non-*E. coli*) in food products.
This medium is a chromogenic medium for the direct enumeration without confirmation in products for human and animal consumptions of:

- β-D-glucuronidase-positive *E. coli*,
- β-D-glucuronidase-positive *E. coli* and Enterobacteriaceae (non-*E. coli*).

The enumeration of *E. coli* is done by the detection of β-D-glucuronidase coloring the colonies in blue with or without a blue halo.
The screening of other Enterobacteriaceae (non-*E. coli*) is done by the addition to REBECCA™ base of a specific supplement that colors the colonies in pink to red.

The mixture of selective agents inhibits the growth of the interfering flora.

2.1.2. Protocol of the method

The diagram summarizing the method is shown in appendix A.

From an initial suspension realized according to the prescriptions of the ISO 6887 standard, or directly from a liquid sample, REBECCA plates are inoculated as described below:

- For surface inoculation: inoculate by spreading 0.1 mL of the primary dilution and of its decimal dilutions onto the surface of a 90 mm REBECCA™ plate dried beforehand in an incubator. In the case of the estimation of small numbers, it is possible to spread 1 mL of inoculum either onto the surface of a 140 mm Petri plate or onto the surface of three 90 mm Petri plates.
- For inoculation by pour-plate: place 1 mL of initial suspension or decimal dilutions in a Petri dish. Use one plate per dilution. Add approximately 15 mL of molten REBECCA™ medium (maintained at +44 to +47°C). Mix well and leave to cool and set on a flat horizontal surface.

The inoculated plates are incubated at 37±1°C for 24±2 h.

After incubation, observe the microbial growth and the appearance of the colonies:

- β-D-glucuronidase-positive *E. coli* grow as blue colonies with or without halo.
- Enterobacteriaceae (non-*E. coli*) grow as pink to red colonies.

Following the period of incubation, count the number of typical colonies for each dish containing, if possible, more than 10 and less than 150 typical colonies, but no more than 300 colonies (typical or atypical).

2.1.3. Restrictions

There are no restrictions on use for the REBECCA method.

2.2. Reference method

The ISO 16649-2:2001 standard, Horizontal method for the enumeration of β-glucuronidase positive *Escherichia coli*– Colony count technique at 44°C using 5 bromo-4-chloro-3-indolyl β-glucuronate, was used for the initial validation study, for the first and the second renewal studies and for the present renewal study.

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

3. Methods comparison study

3.1. Relative trueness study

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

3.1.1. Number and nature of the samples

Considering all the steps of the validation:

- 90 samples were analyzed during the initial validation study,
- 102 samples were analyzed during the third renewal study.

Overall, 192 samples were analyzed giving:

- 104 exploitable results for the REBECCA method with the surface spreading technique modality,
- 105 exploitable results for the REBECCA method with for the pour plate modality,
- 100 exploitable results for the REBECCA+EB method with the surface spreading technique modality,
- 105 exploitable results for the REBECCA+EB method with for the pour plate modality.

The distribution of the samples per category, type and inoculation technique is given in table 2.

Table 2: number and nature of the samples analyzed for the relative trueness study (IVS: initial validation study, TRS: third renewal study)

Category		Type	REBECCA								REBECCA+EB							
			Surface spreading				Pour plates				Surface spreading				Pour plates			
			Analyzed		Kept for the statistical analysis		Analyzed		Kept for the statistical analysis		Analyzed		Kept for the statistical analysis		Analyzed		Kept for the statistical analysis	
			IVS	TRS	IVS	TRS	IVS	TRS	IVS	TRS	IVS	TRS	IVS	TRS	IVS	TRS	IVS	TRS
Meats products	a	Raw products	11	5	2	5	11	5	2	5	11	5	0	5	11	5	2	5
	b	Ready-to-reheat products	3	5	1	4	3	5	3	4	3	5	2	4	3	5	3	4
	c	Smoked and cured products	5	8	3	2	5	8	3	2	5	8	3	2	5	8	3	2
	Total		**19**	**18**	**6**	**11**	**19**	**18**	**8**	**11**	**19**	**18**	**5**	**11**	**19**	**18**	**8**	**11**
Dairy & egg products	a	Pasteurized and dehydrated products	3	8	2	4	3	8	1	4	3	8	1	4	3	8	1	4
	b	Raw milk products	12	7	8	3	12	7	9	3	12	7	8	3	12	7	9	3
	c	Desserts and egg products	0	9	0	5	0	9	0	5	0	9	0	5	0	9	0	5
	Total		**15**	**24**	**10**	**12**	**15**	**24**	**10**	**12**	**15**	**24**	**9**	**12**	**15**	**24**	**10**	**12**
Seafood products	a	Raw products	3	6	2	3	3	6	2	3	3	6	2	3	3	6	2	3
	b	Marinated and smoked products	2	4	1	4	2	4	1	4	2	4	1	4	2	4	1	4
	c	Ready-to-reheat products	14	0	6	0	14	0	7	0	14	0	0	6	14	0	0	6
	Total		**19**	**10**	**9**	**7**	**19**	**10**	**10**	**7**	**19**	**10**	**3**	**13**	**19**	**10**	**3**	**13**
Vegetal products	a	Raw products	2	14	0	5	2	14	0	5	2	14	0	5	2	14	0	5
	b	Pre-cut and pre-cooked products	3	8	3	3	3	8	2	3	3	8	3	3	3	8	3	3
	c	Processed products	13	0	5	0	13	0	5	0	13	0	5	0	13	0	0	5
	Total		**18**	**22**	**8**	**8**	**18**	**22**	**7**	**8**	**18**	**22**	**8**	**8**	**18**	**22**	**3**	**13**
Feed products	a	Pet food	9	0	5	0	9	0	5	0	9	0	5	0	9	0	5	0
	b	Livestock food	0	7	0	5	0	7	0	5	0	7	0	5	0	7	0	5
	c	Ingredients	10	2	4	2	10	2	5	1	10	2	4	1	10	2	5	1
	Total		**19**	**9**	**9**	**7**	**19**	**9**	**10**	**6**	**19**	**9**	**9**	**6**	**19**	**9**	**10**	**6**
Ready-to-eat & ready-to-reheat products	a	Ready-to-eat products	0	7	0	6	0	7	0	6	0	7	0	6	0	7	0	6
	b	Ready-to-reheat products	0	7	0	6	0	7	0	5	0	7	0	5	0	7	0	5
	c	Smoked and marinated products	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5
	Total		**0**	**19**	**0**	**17**	**0**	**19**	**0**	**16**	**0**	**19**	**0**	**16**	**0**	**19**	**0**	**16**
Total			**90**	**102**	**42**	**62**	**90**	**102**	**45**	**60**	**90**	**102**	**34**	**66**	**90**	**102**	**34**	**71**
			192		**104**		**192**		**105**		**192**		**100**		**192**		**105**	

3.1.2. Artificial contaminations

Artificial contaminations were performed using spiking and seeding protocols. The strains used, and the contamination protocols are presented in Appendix C.
Not inoculated samples were also used: 130 of them were analyzed that led to the obtention of 47 interpretable results. Naturally contaminated samples represent thus 44.8% of the results.

3.1.3. Protocols used during the study

The two modalities of enumeration of the alternative method were tested: surface spreading and pour plates. The minimum incubation times of the Petri dishes was applied, namely 22 hours at 37±1°C.

3.1.4. Results

Samples were analyzed by the reference and the alternative method so as to obtain at least 15 interpretable results per category and at least 5 per type.
As results were available in duplicates concerning the initial validation study, only the first replicate was considered as part of the calculations of the EN ISO 16140-2:2016 standard.

Raw results are shown in appendix D.

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

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

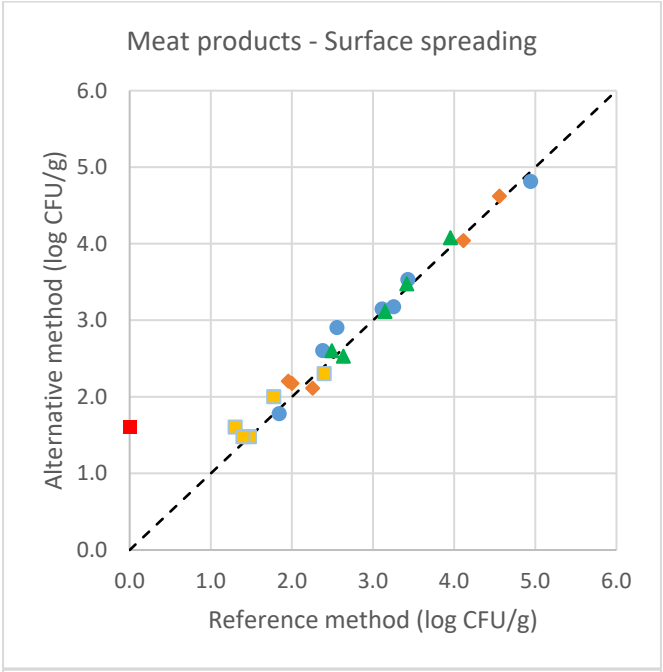
All results are presented in scatter plots per category and modality of inoculation in figures below:

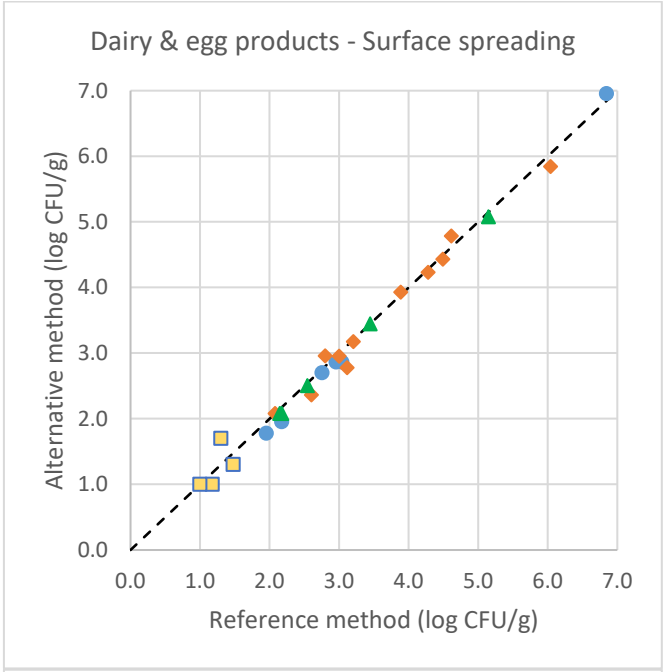
- Figures 1 to 4: scatter plots for the REBECCA method:
    - Figure 1: surface spreading technique plots for each category,
    - Figure 2: pour plates method for each category,
    - Figures 3 and 4: scatter plots for all categories per plating technique.
- Figures 5 and 8: scatter plots for the REBECCA+EB method:
    - Figure 5: surface spreading technique plots for each category,
    - Figure 6: pour plates method for each category,
    - Figures 7 and 8: scatter plots for all categories per plating technique.

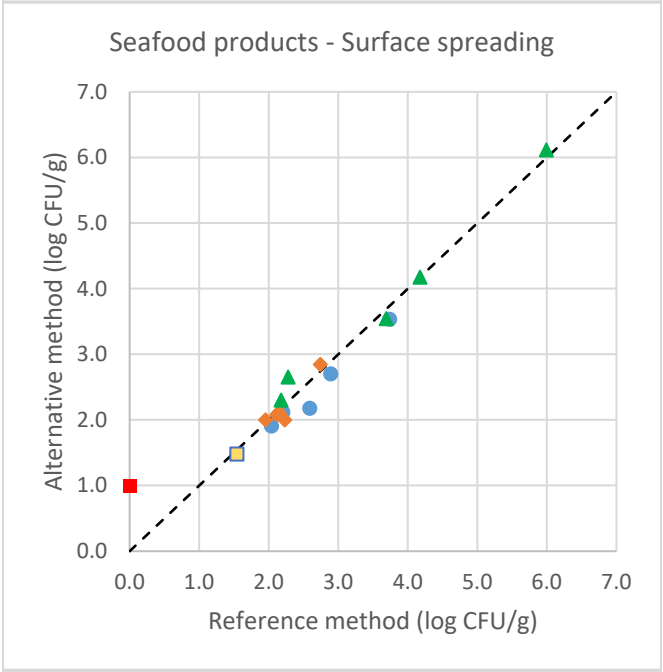
On scatter plots:

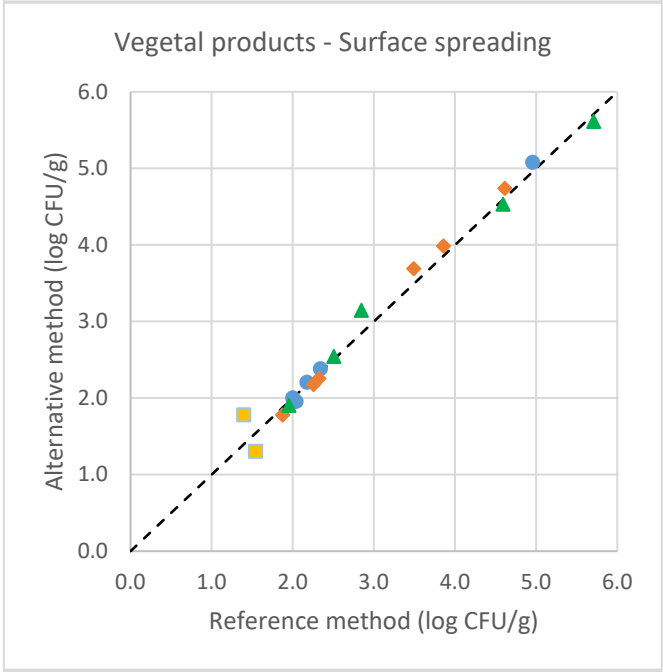
- Each type of food is differentiated per type on individual category scatter plots: blue circle: type a / orange diamond: type b / green triangle: type c
- Results expressed with less than 4 colonies per Petri dish for at least one method are indicated by a yellow square,
- Results lower or higher than the quantification limits for one method are indicated by a red square. The value of these results is corrected according to the EN ISO 16140-2:2016 requirements.

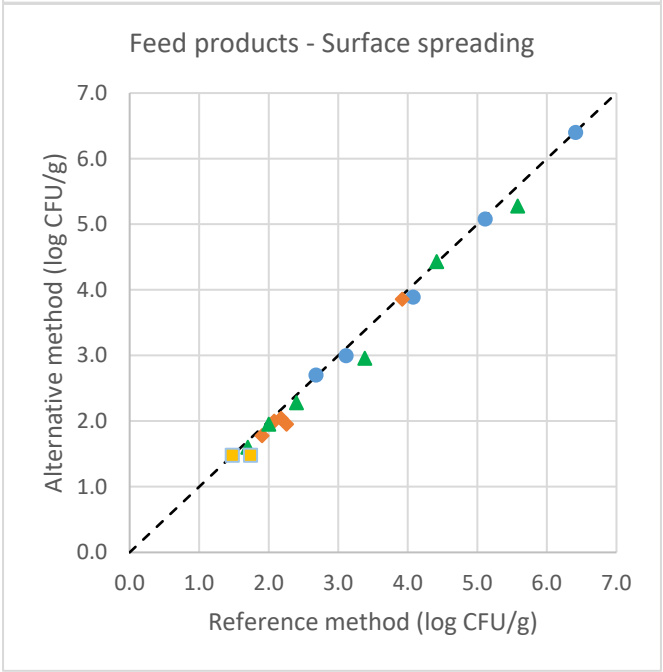
Figure 1: Two-dimensional plots per category, using the surface spreading inoculation for REBECCA











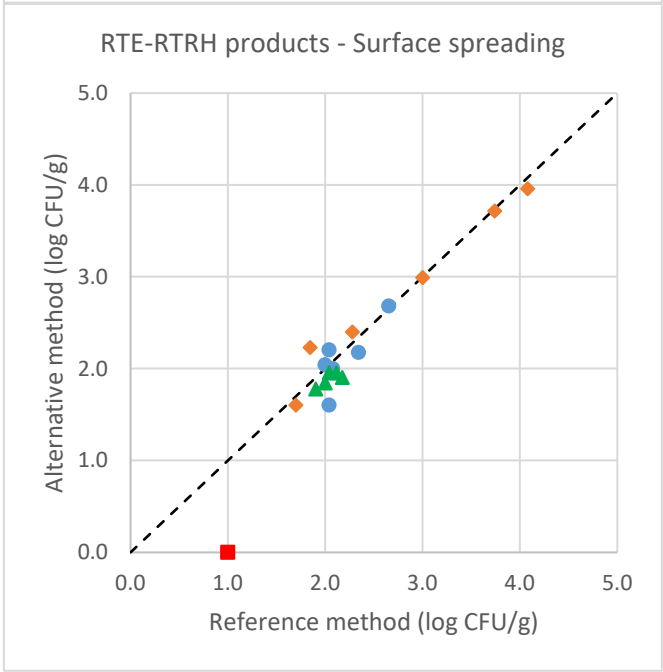


Figure 2: Two-dimensional plots per category, using the pour plate inoculation for REBECCA

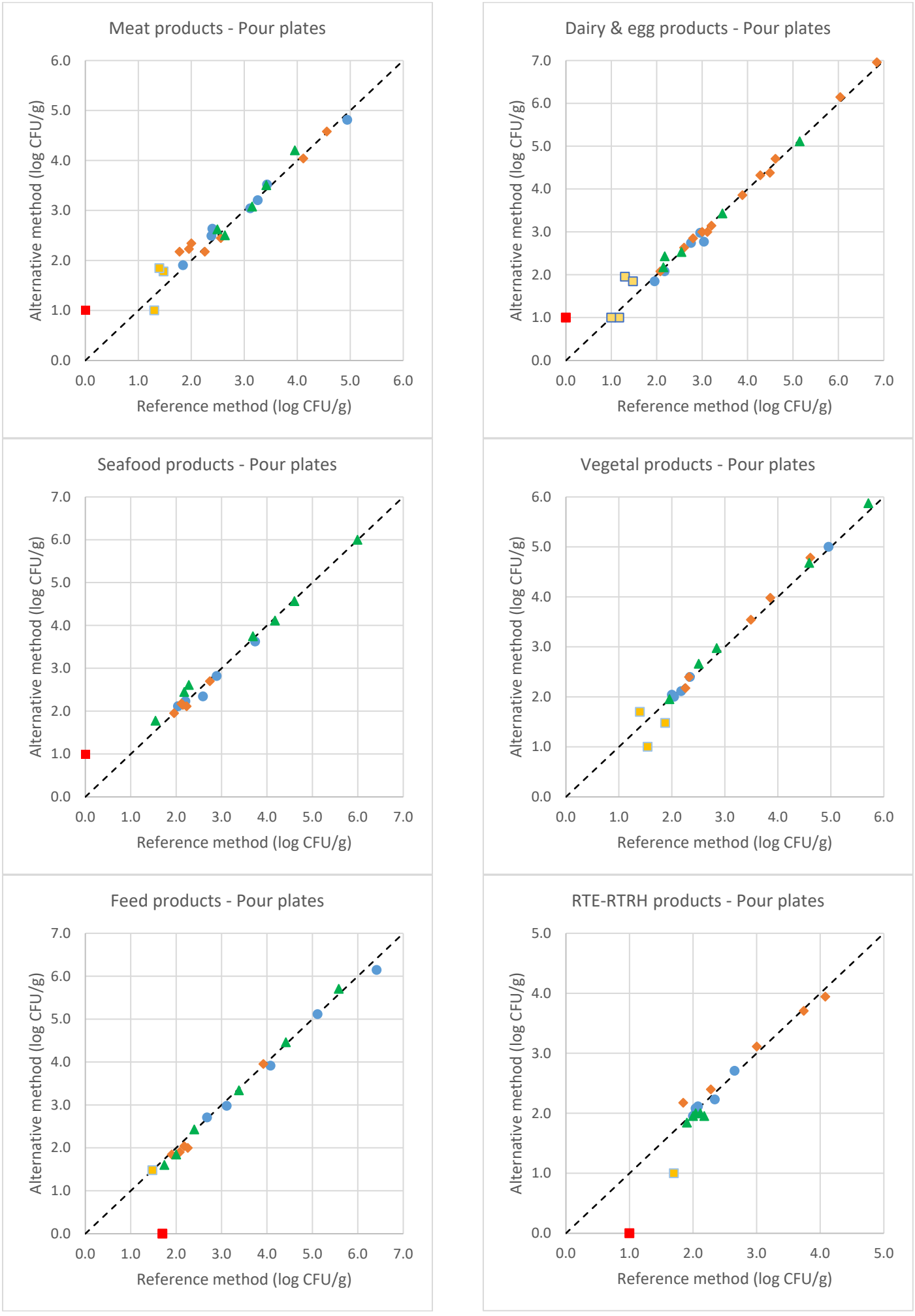


Figure 3: Two-dimensional plots for all categories using the surface spreading inoculation for REBECCA

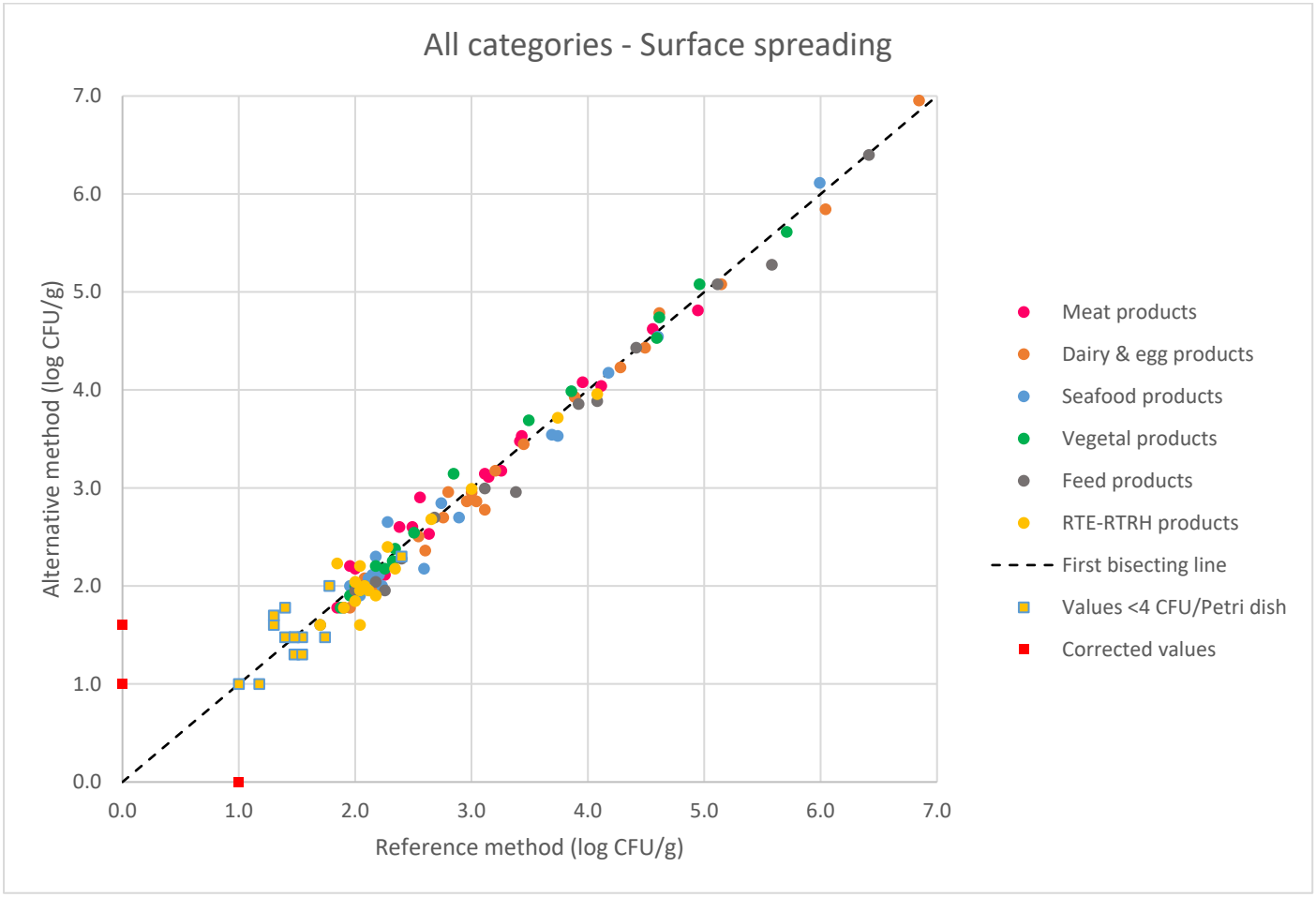


Figure 4: Two-dimensional plots for all categories using the pour plate inoculation for REBECCA

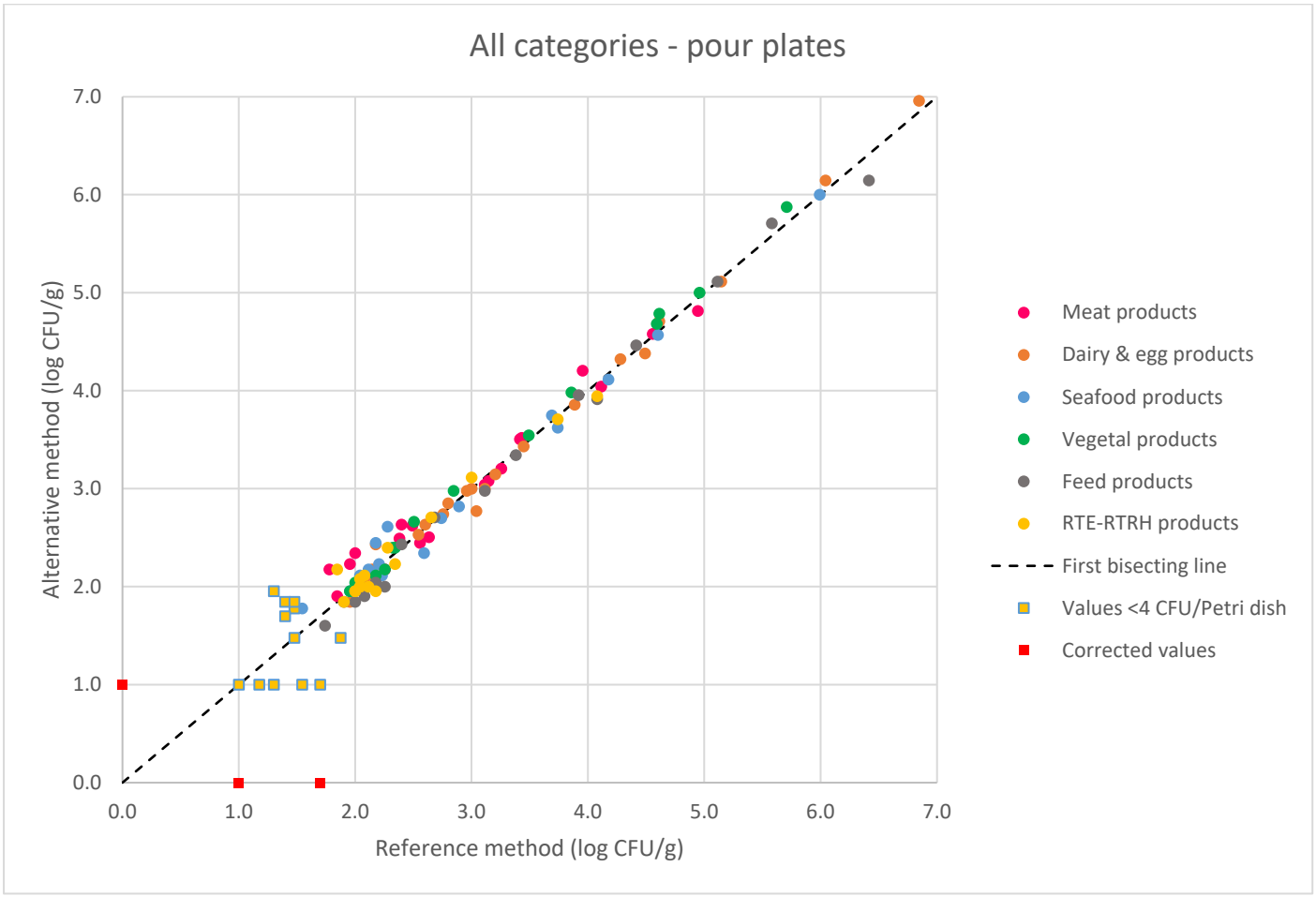
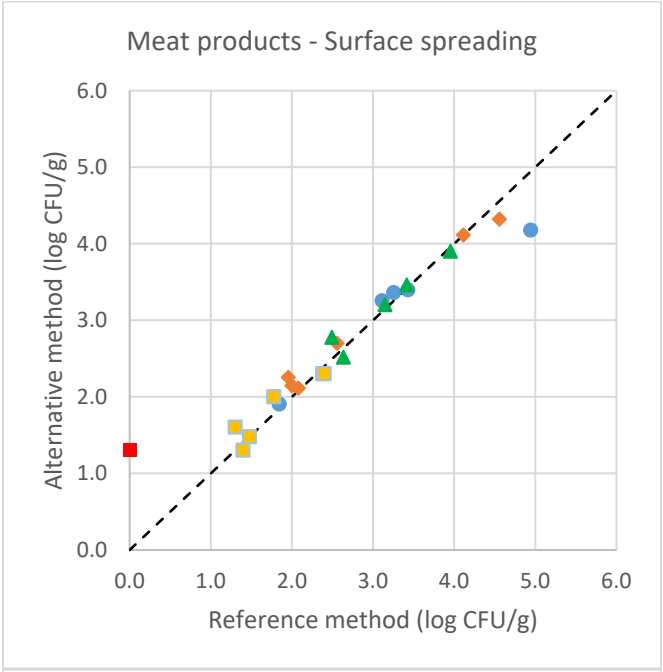
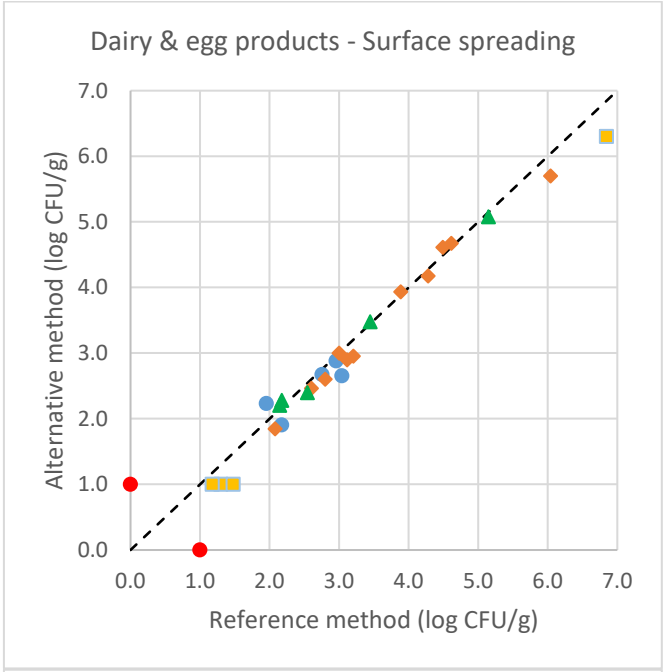
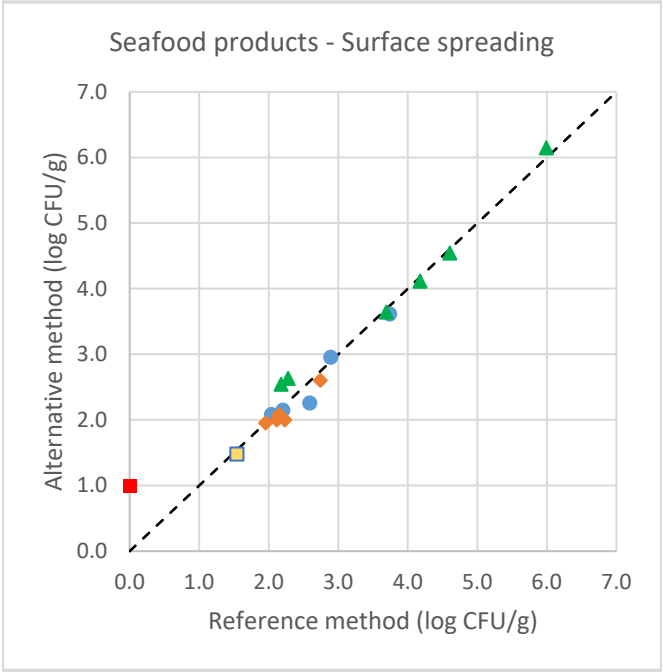
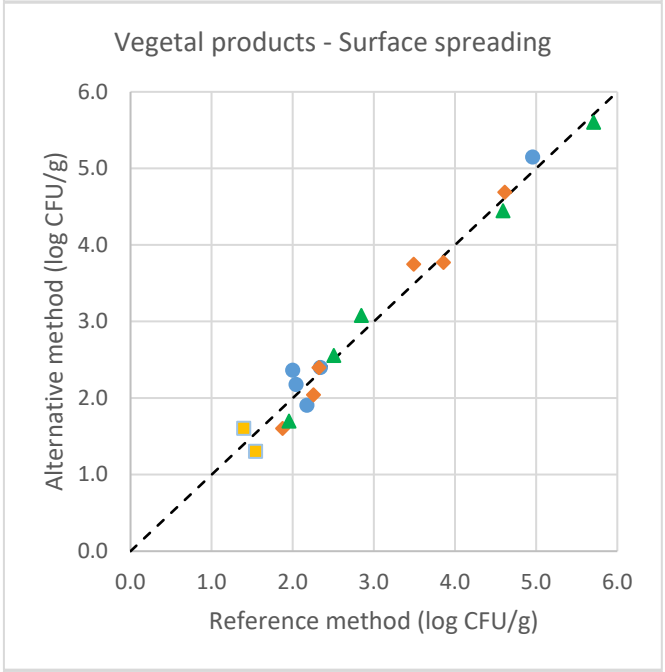


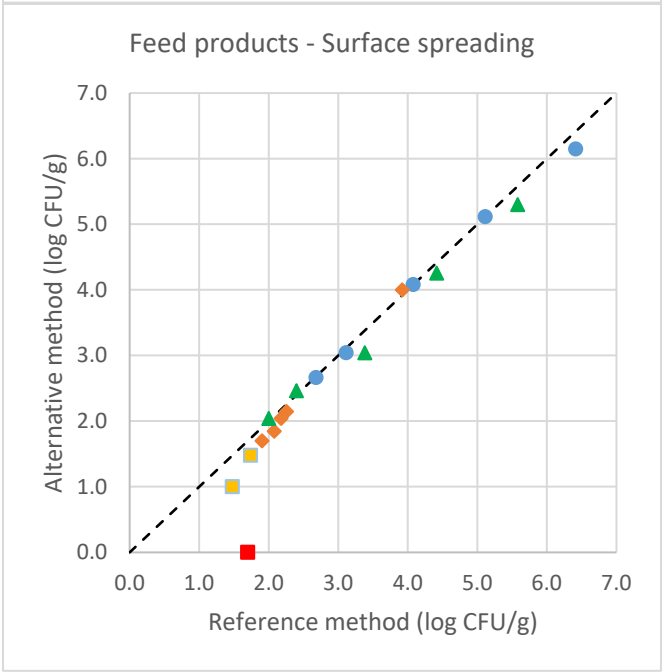
Figure 5: Two-dimensional plots per category, using the surface spreading inoculation for REBECCA+EB











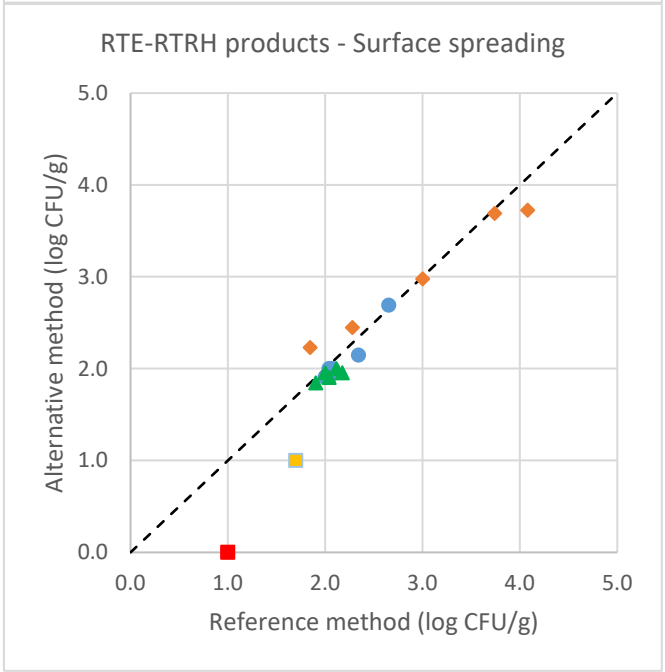


Figure 6: Two-dimensional plots per category, using the pour plate inoculation for REBECCA+EB

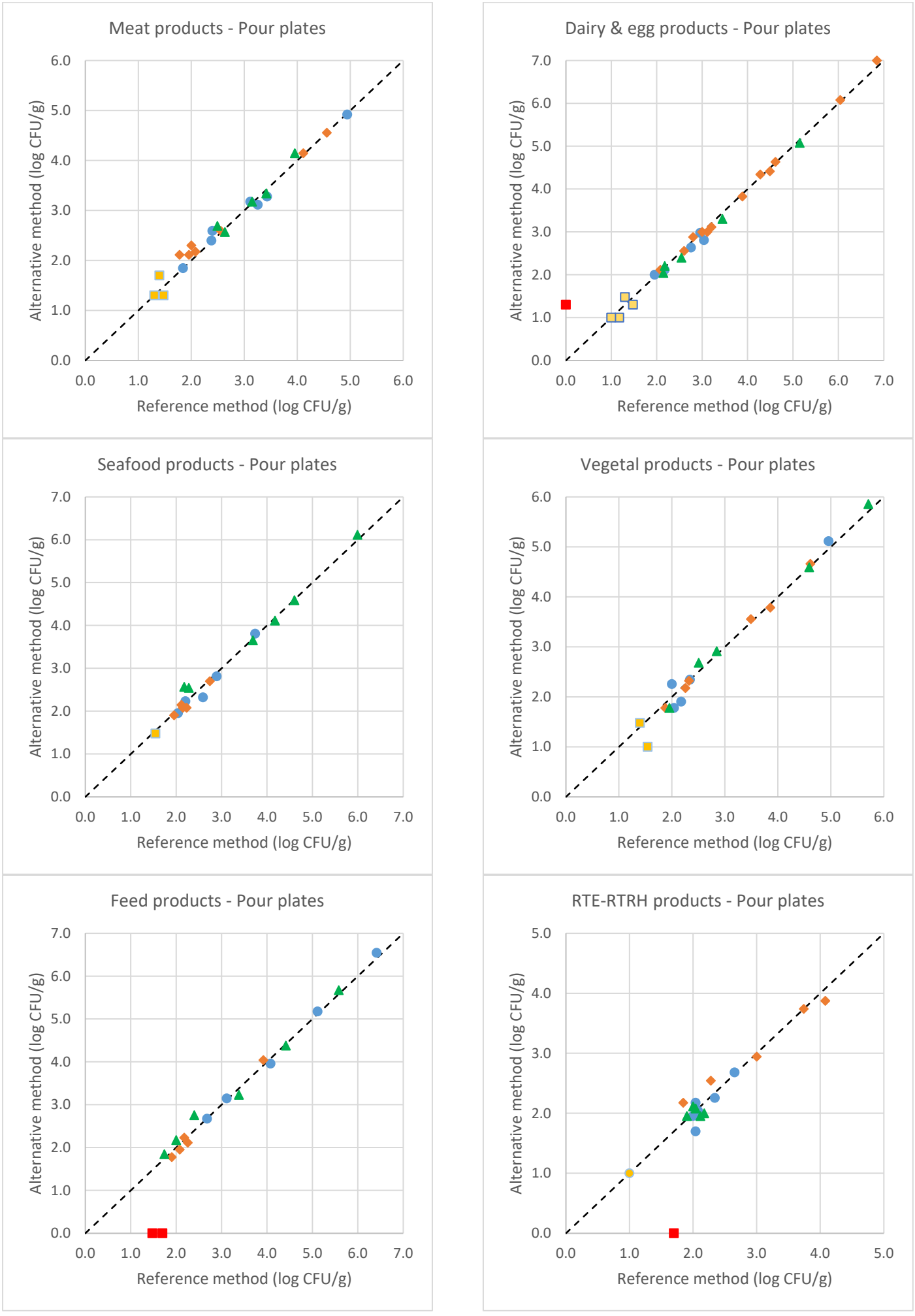


Figure 7: Two-dimensional plots for all categories using the surface spreading inoculation for REBECCA+EB

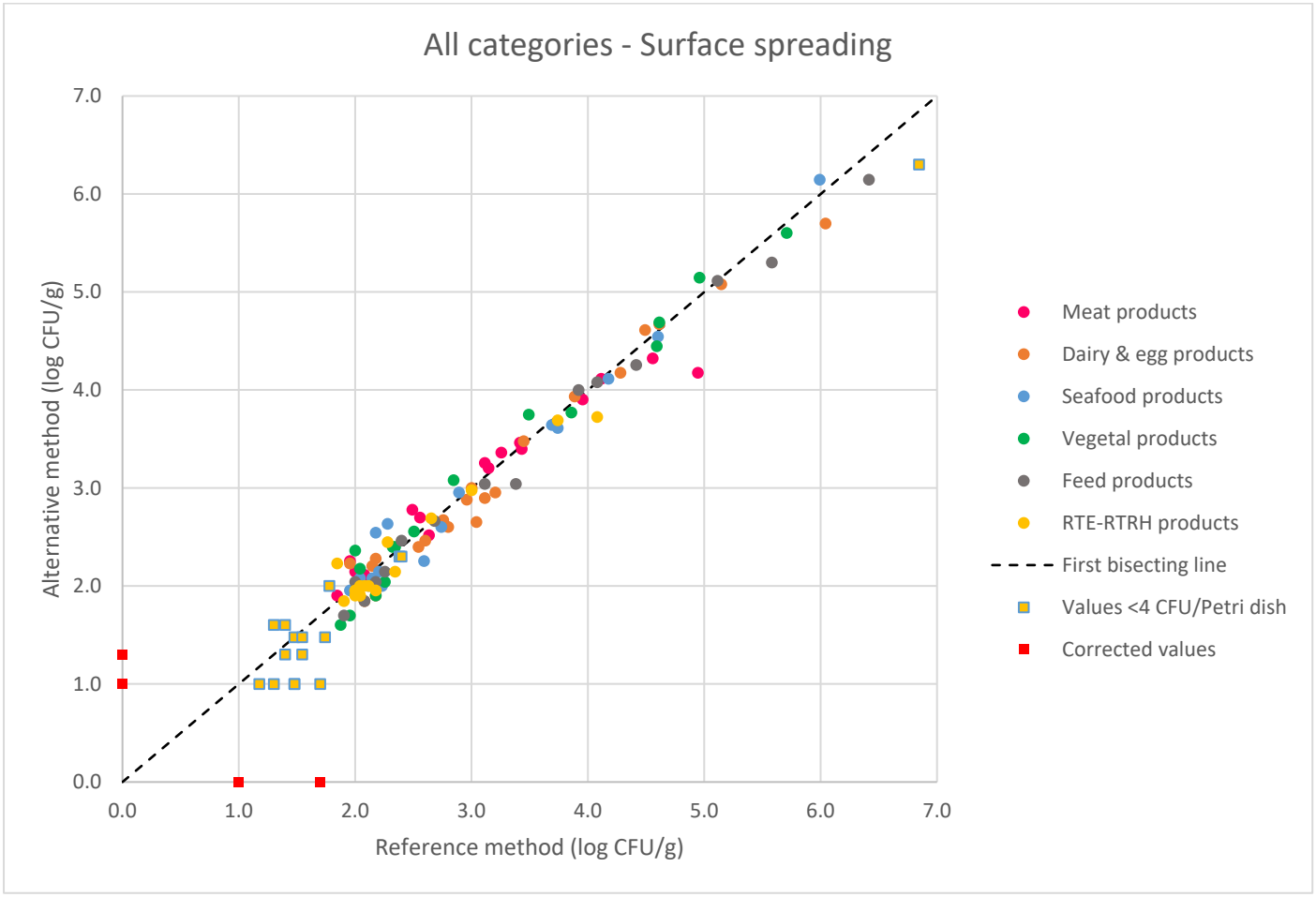
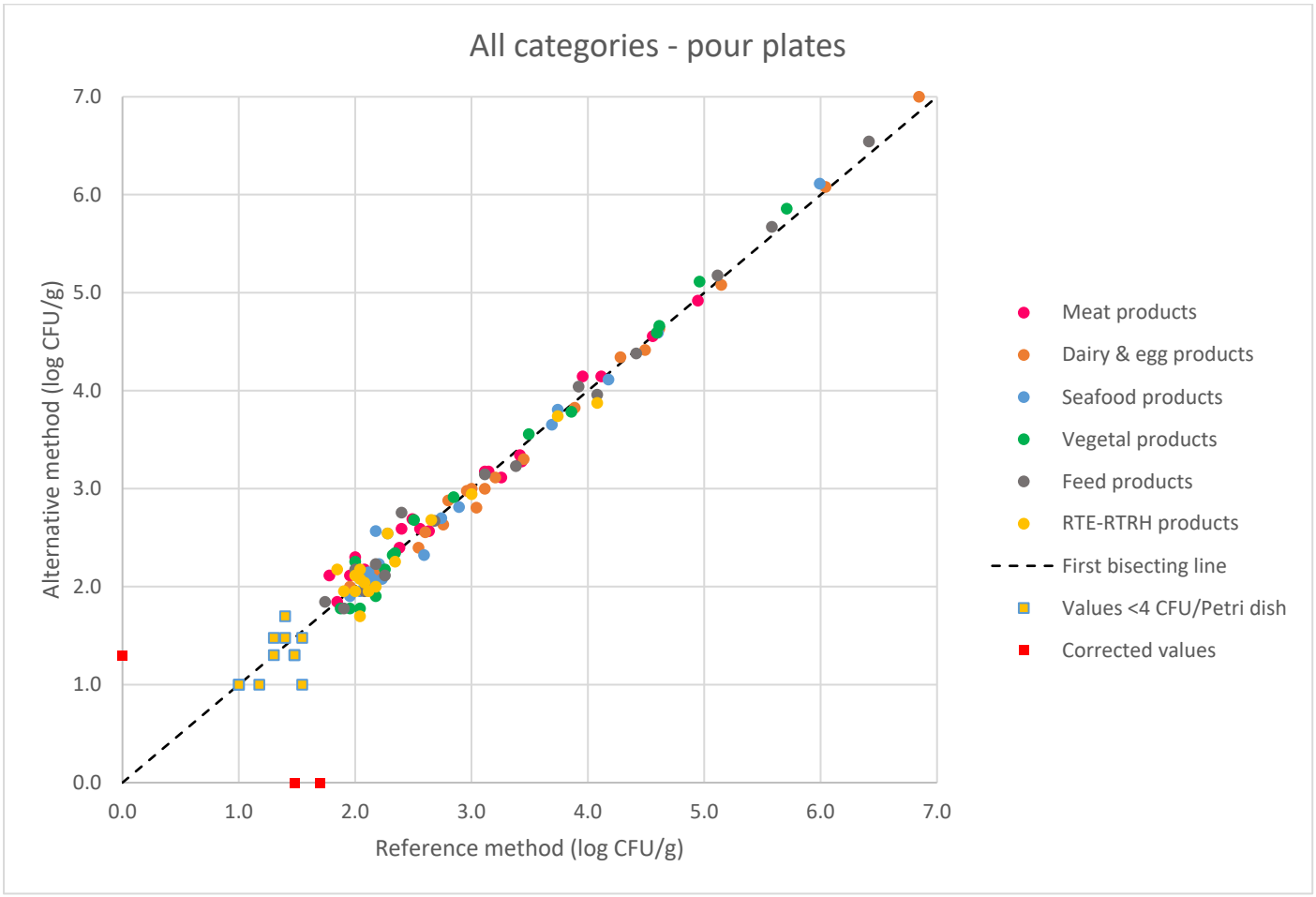


Figure 8: Two-dimensional plots for all categories using the pour plate inoculation for REBECCA+EB



3.1.5. Calculation and interpretation of relative trueness study

The results obtained are analyzed using the Bland-Altman method.
Statistical calculations are presented in Appendix E, as well as the results excluded from the statistical analysis per category, type and modality of inoculation.

Table 3 presents the summary of the average differences and standard deviation differences per method, category and for all categories.

Table 3: values for the Bland-Altman difference plot

Method	Inoculation	Cate-gory	n	Average difference	Standard deviation differences	Bias	Lower Confi-dence Limit	Upper Confi-dence Limit
REBECCA	**Surface spreading**	MP	17	0.05	0.14	/	/	/
		DP	22	-0.07	0.13	/	/	/
		SP	16	-0.05	0.18	/	/	/
		VP	16	0.03	0.12	/	/	/
		FP	16	-0.13	0.12	/	/	/
		RTE	17	-0.06	0.18	/	/	/
		All cat.	**104**	**-0.04**	**0.18**	**-0.04**	**-0.35**	**0.27**
	Pour plate	MP	19	0.07	0.17	/	/	/
		DP	22	-0.01	0.10	/	/	/
		SP	17	0.02	0.15	/	/	/
		VP	15	0.06	0.08	/	/	/
		FP	16	-0.08	0.12	/	/	/
		RTE	16	-0.01	0.13	/	/	/
		All cat.	**105**	**0.01**	**0.13**	**0.01**	**-0.26**	**0.28**
REBECCA+EB	**Surface spreading**	MP	16	0.01	0.25	/	/	/
		DP	21	-0.09	0.17	/	/	/
		SP	16	-0.02	0.19	/	/	/
		VP	16	-0.01	0.20	/	/	/
		FP	15	-0.11	0.14	/	/	/
		RTE	16	-0.06	0.17	/	/	/
		All cat.	**100**	**-0.04**	**0.19**	**-0.04**	**-0.42**	**0.33**
	Pour plate	MP	19	0.06	0.14	/	/	/
		DP	22	-0.04	0.09	/	/	/
		SP	16	0.00	0.16	/	/	/
		VP	16	0.00	0.15	/	/	/
		FP	16	0.03	0.14	/	/	/
		RTE	16	-0.01	0.17	/	/	/
		All cat.	**105**	**0.01**	**0.14**	**0.01**	**-0.28**	**0.29**

Overall, the average difference is equal to -0,04 (surface spreading method for REBECCA and REBECCA+EB) and 0,01 (pour plate method for REBECCA and REBECCA+EB), showing no bias between the REBECCA methods and the reference method.
The average difference varies from:

- REBECCA: -0.13 log CFU/g (feed products) to 0.05 CFU/g (meat products) for the surface spreading method and from -0.08 log CFU/g (feed products) to 0.07 log CFU/g (meat products) for the pour plate technique,
- REBECCA+EB: -0.11 log CFU/g (feed products) to 0.01 CFU/g (meat products) for the surface spreading method and from -0.04 log CFU/g (dairy and egg products) to 0.06 log CFU/g (meat products) for the pour plate technique.

Upper and lower 95% confidence interval limits are lower than 0.5 log showing a good correlation between the two methods.

The Bland-Altman difference plots are presented for all categories in figures 9 and 10 for the REBECCA method and in figures 11 and 12 for the REBECCA+EB method.

As on scatter plots:
- Each category is differentiated by a specific colour,
- Results expressed with less than 4 colonies per Petri dish for at least one method are indicated by a yellow square,
- Results lower or higher than the quantification limits for one method are indicated by a red square. The value of these results is corrected according to the EN ISO 16140-2:2016 requirements.

Figure 9: Bland-Altman difference plot for REBECCA for all categories with the surface spreading method

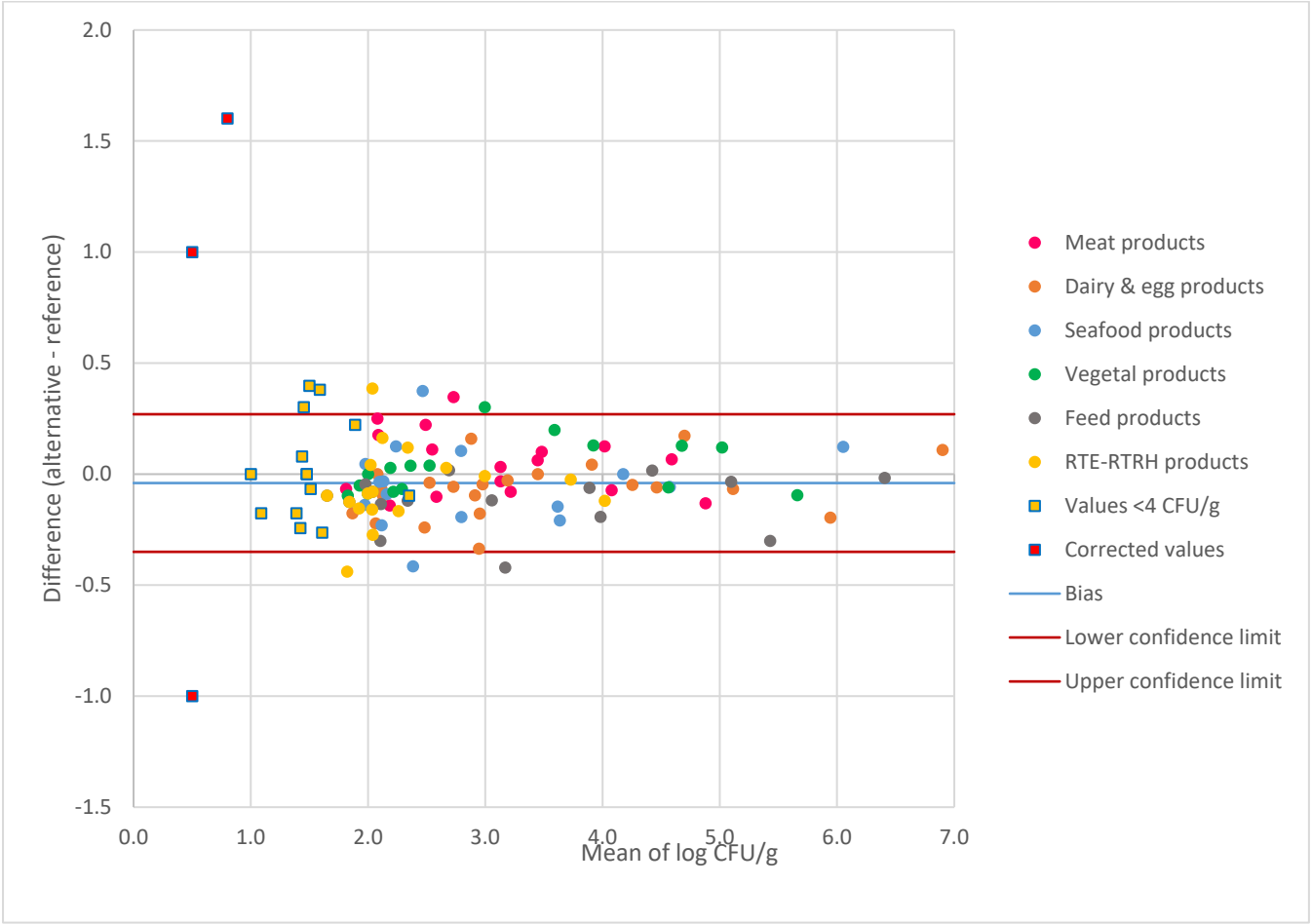


Figure 10: Bland-Altman difference plot for REBECCA for all categories with the pour plate technique

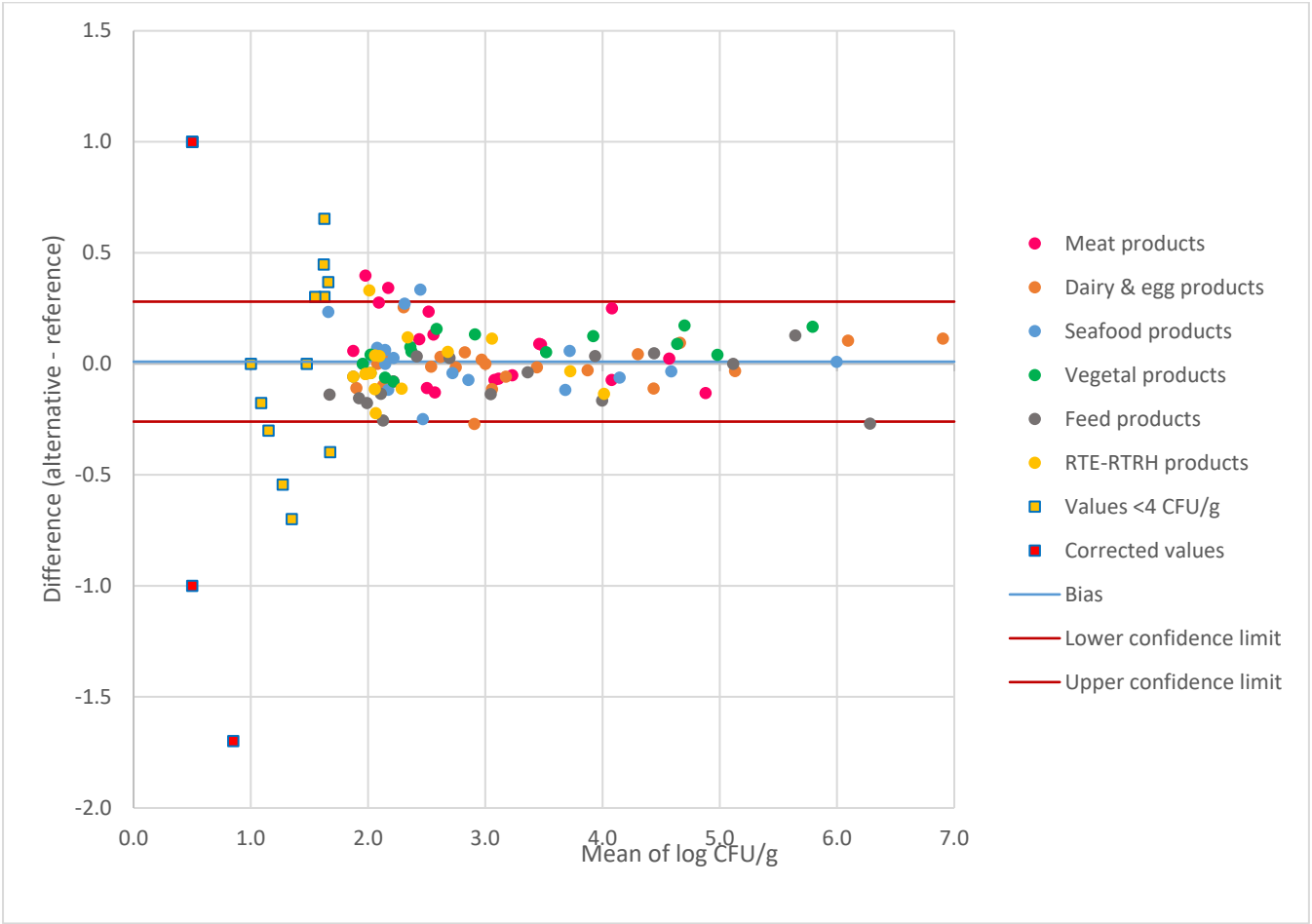


Figure 11: Bland-Altman difference plot for REBECCA+EB for all categories with the surface spreading method

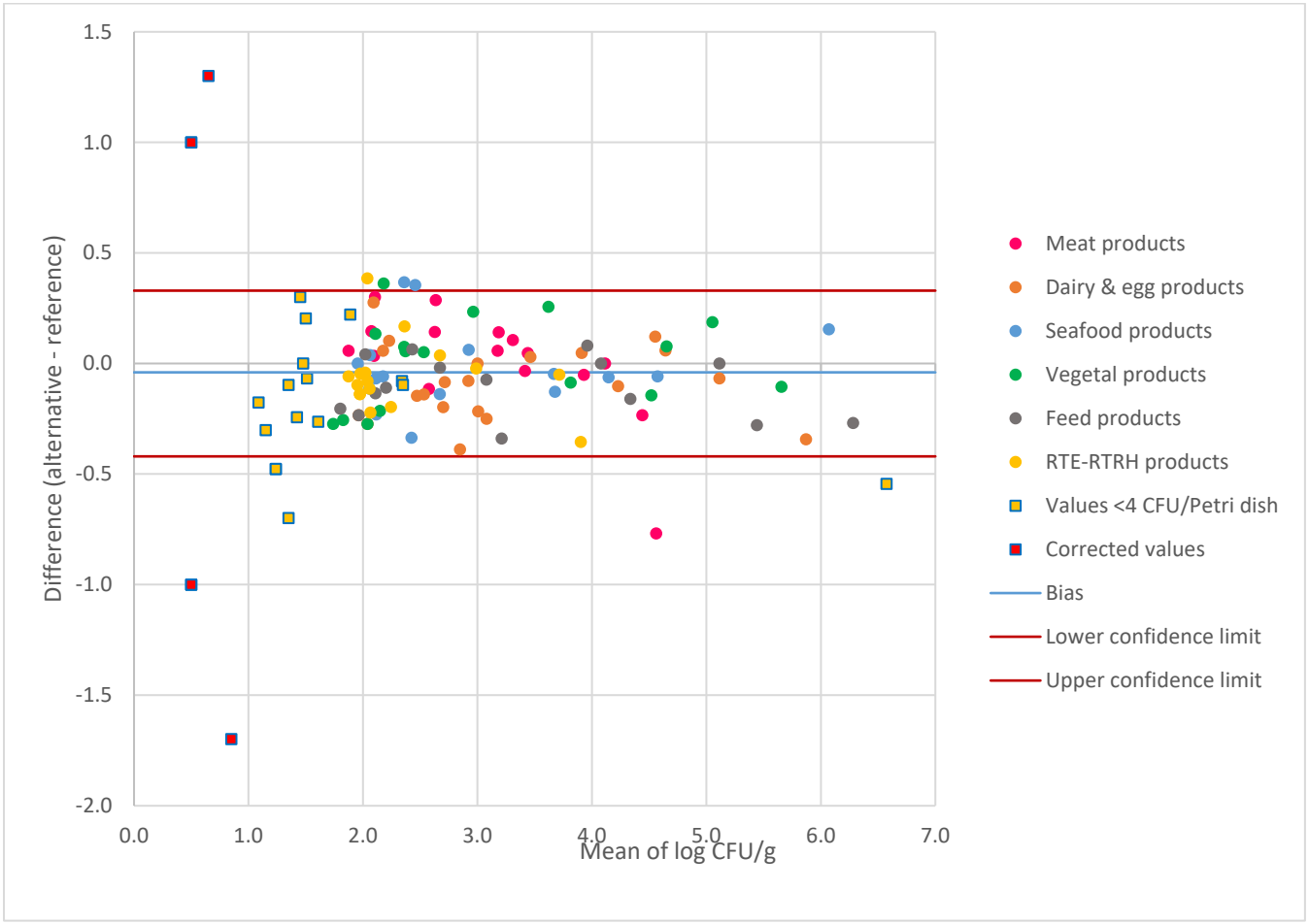
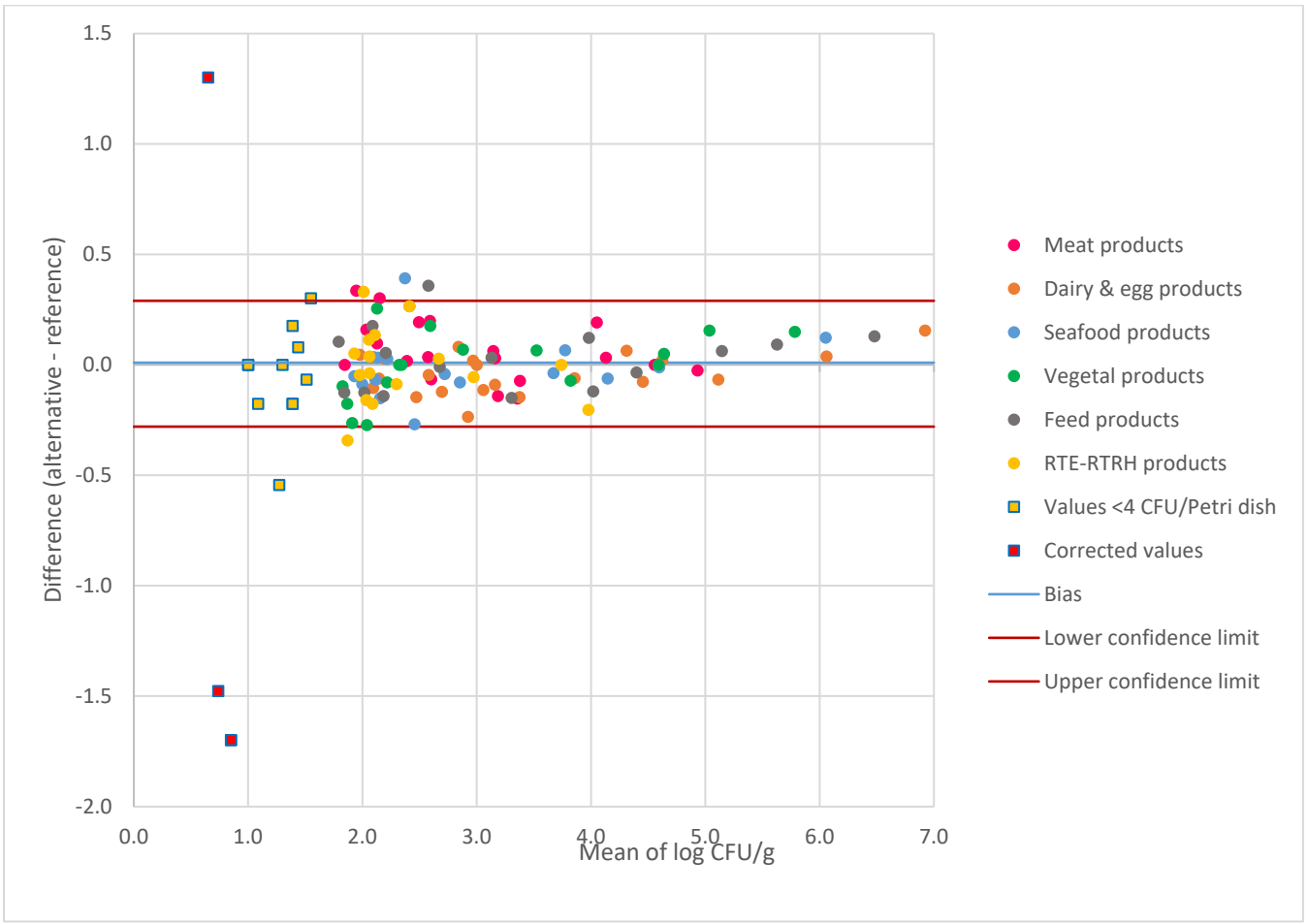


Figure 12: Bland-Altman difference plot for REBECCA+EB for all categories with the pour plate technique



- Observations:

Samples for which the average difference is lower or higher than the confidence limits are listed in table 4 for the REBECCA method and in table 5 for the REBECCA+EB method.

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

Inoculation	Category	Type	Sample #	Reference Method value (log)	Alternative Method value (log)	Mean	Difference
Surface spreading: LCL: -0,35 UCL: +0,27	MP	a	VI 320	2,56	2,90	2,73	0,35
		b	1692051	1,30	1,60	1,45	0,30
		c	1692065	0,00	1,60	0,80	1,60
	DP	a	1692054	1,30	1,70	1,50	0,40
	SP	a	CI 141	2,59	2,18	2,38	-0,41
		c	MV 2921	2,28	2,65	2,47	0,37
		a	1691995	0,00	1,00	0,50	1,00
	VP	c	VR 4497	2,85	3,15	3,00	0,30
		c	DJ 3361	1,40	1,78	1,59	0,38
	FP	c	RD 1429	3,38	2,96	3,17	-0,42
	RTE	a	1692053	2,04	1,60	1,82	-0,44
		b	1698413	1,85	2,23	2,04	0,39
		a	1692050	1,00	0,00	0,50	-1,00
Pour plate: LCL: -0,26 UCL: +0,28	MP	b	VR 5152	1,78	2,18	1,98	0,40
		b	1698415	2,00	2,34	2,17	0,34
		a	VR 4754	1,48	1,78	1,63	0,30
		b	1692051	1,30	1,00	1,15	-0,30
		c	MV 1916	1,40	1,85	1,62	0,45
		c	1692065	0,00	1,00	0,50	1,00
	DP	a	1691977	3,04	2,77	2,91	-0,27
		a	1692054	1,30	1,95	1,63	0,65
		a	1692055	1,48	1,85	1,66	0,37
		b	1691989	0,00	1,00	0,50	1,00
	SP	c	MV 2921	2,28	2,61	2,45	0,33
		a	1691999	0,00	1,00	0,50	1,00
	VP	b	DJ 3849	1,88	1,48	1,68	-0,40
		c	DJ 3361	1,40	1,70	1,55	0,30
		c	DJ 3510	1,54	1,00	1,27	-0,54
		c	1692066	1,70	0,00	0,85	-1,70
	FP	a	RD 1434	6,41	6,15	6,28	-0,27
	RTE	b	1698413	1,85	2,18	2,01	0,33
		b	1692052	1,70	1,00	1,35	-0,70
		a	1692050	1,00	0,00	0,50	-1,00

Table 5: values outside the confidence limits on the Bland-Altman difference plot for the REBECCA+EB method (green cases: values <4 CFU/Petri dish, yellow cases: values lower and higher than the quantification limits, blue: values higher than the confidence limits, red: values lower than the quantification limits)

Inoculation	Category	Type	Sample #	Reference Method value (log)	Alternative Method value (log)	Mean	Difference
Surface spreading: **LCL: -0,42** **UCL: +0,33**	MP	a	1692012	4,94	4,18	4,56	-0,77
		c	1692065	0,00	1,30	0,65	1,30
	DP	a	1692055	1,48	1,00	1,24	-0,48
		b	R 36889	6,85	6,30	6,57	-0,54
		b	1691989	0,00	1,00	0,50	1,00
		b	1692008	1,00	0,00	0,50	-1,00
	SP	c	MV 2921	2,28	2,63	2,46	0,35
		c	Q 2235	2,18	2,54	2,36	0,37
		a	1691999	0,00	1,00	0,50	1,00
	VP	a	1698420	2,00	2,36	2,18	0,36
	FP	b	1691988	1,48	1,00	1,24	-0,48
		c	1692066	1,70	0,00	0,85	-1,70
	RTE	b	1698413	1,85	2,23	2,04	0,39
	RTE	b	1692052	1,70	1,00	1,35	-0,70
		a	1692050	1,00	0,00	0,50	-1,00
Pour plate: **LCL: -0,28** **UCL: +0,29**	MP	b	VR 5152	1,78	2,11	1,95	0,34
		b	1698415	2,00	2,30	2,15	0,30
		c	MV 1916	1,40	1,70	1,55	0,30
	DP	b	1691989	0,00	1,30	0,65	1,30
	SP	c	Q 2235	2,18	2,57	2,37	0,39
	VP	c	DJ 3510	1,54	1,00	1,27	-0,54
	FP	c	RD 1428	2,40	2,76	2,58	0,36
		b	1691988	1,48	0,00	0,74	-1,48
		c	1692066	1,70	0,00	0,85	-1,70
	RTE	a	1692053	2,04	1,70	1,87	-0,34
		b	1698413	1,85	2,18	2,01	0,33
		b	1692052	1,70	0,00	0,85	-1,70

- **REBECCA method:**
  - Surface spreading method

    Thirteen samples are outside the confidence limits: 6 concern corrected values or samples with less than 4 CFU/Petri dish, 4 are higher than the upper confidence limit and 3 are lower than the lower confidence limit.
  - Pour plate technique:

    Twenty samples are outside the confidence limits: 14 concern corrected values or samples with less than 4 CFU/Petri dish, 4 are higher than the upper confidence limit and 2 are lower than the lower confidence limit.

- **REBECCA+EB method:**
  - Surface spreading method

    Fifteen samples are outside the confidence limits: 10 concern corrected values or samples with less than 4 CFU/Petri dish, 4 are higher than the upper confidence limit and 1 is lower than the lower confidence limit.
  - Pour plate technique:

    Twelve samples are outside the confidence limits: 6 concern corrected values or samples with less than 4 CFU/Petri dish, 5 are higher than the upper confidence limit and 1 is lower than the lower confidence limit.

3.1.6. Conclusion

The relative trueness study of the alternative method is satisfactory.

3.2. Accuracy profile study

3.2.1. Protocols

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

The matrix-strain couples are presented in table 6.

Table 6: matrix-strain couples for the RLoD study

Category	Matrix	Strain	Strain code	Origin of the strain	Target Contamination level (CFU/g)
Meat products	Ground beef	*E. coli*	EZN508	Ground beef	100
Dairy and egg products	Raw milk cheese	*E. coli*	TDW583	Raw milk cheese	
Seafood products	Raw fish fillet	*E. coli*	AZD018	Surimi, bell pepper, pasta salad	3000
Vegetal products	Frozen vegetables pan	*E. coli*	BCF262	Ao nori seaweed	
Feed products	Cat kibbles	*E. coli*	EAR487	Raw tongues	100000
Ready-to-eat and ready-to-reheat products	Quiche lorraine	*E. coli*	UBS981	Ham croissant	

3.2.2. Results

Raw data are provided in appendix F.

The statistical data and the accuracy profiles are shown:

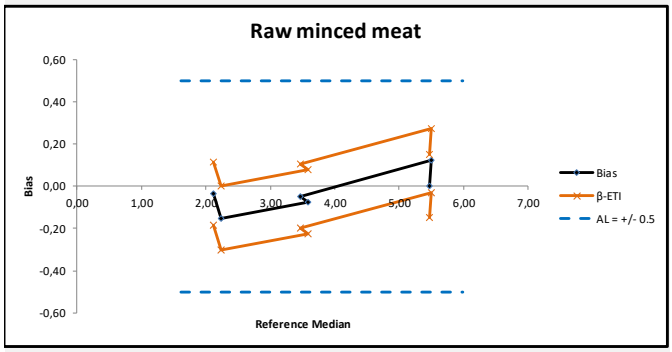
- in figures 13 and 14 for the REBECCA method (surface spreading and pour plate),
- In figures 15 and 16 for the REBECCA+EB method (surface spreading and pour plate).

Statistical calculations were done according to the Excel spreadsheet named AP calculation tool MCS (clause 6-1-3-3 Calculation and interpretation of accuracy profile study) ver 27-01-2015.xlsx available at http://standards.iso.org/iso/16140.

The probability for the tolerance interval is set at 80% and the central value is the median.
The acceptability limit is set at AL = 0.5 $\log_{10}$ CFU/g or ml.

Figure 13: Accuracy profiles per category, using the surface spreading inoculation for REBECCA

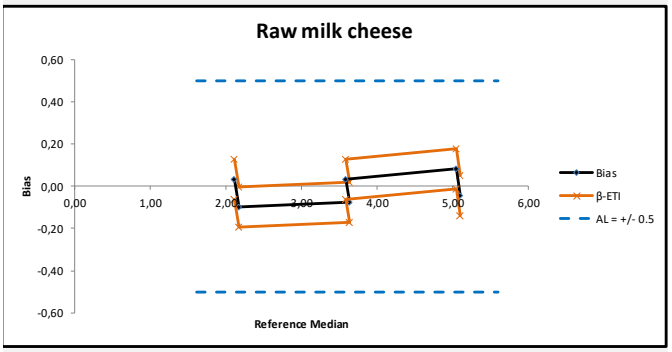
(Food) Category	Meat products
(Food) Type	Raw minced meat



Sample Name	Reference central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1632399-1622503	2,11	-0,035	-0,185	0,115	YES	YES
1632504-1632508	2,23	-0,151	-0,301	-0,001	YES	YES
1632509-1632513	3,58	-0,075	-0,225	0,076	YES	YES
1632514-1632518	3,46	-0,047	-0,198	0,103	YES	YES
1632519-1632523	5,49	0,121	-0,029	0,272	YES	YES
1632524-1632528	5,46	0,000	-0,150	0,150	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,104	YES	+/- 0,500

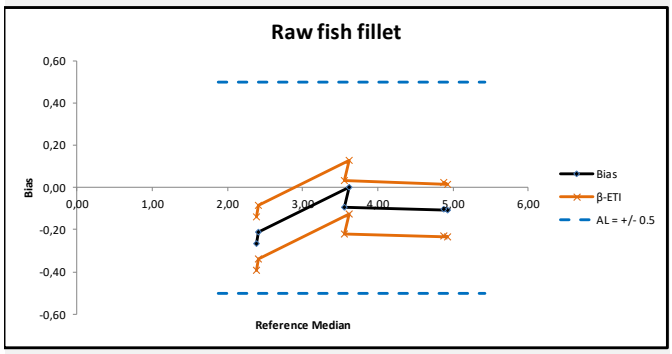
(Food) Category	Dairy products
(Food) Type	Raw milk cheese



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1630000-1630004	2,11	0,032	-0,063	0,127	YES	YES
1630005-1630009	2,18	-0,097	-0,192	-0,002	YES	YES
1630010-1630014	3,63	-0,077	-0,172	0,018	YES	YES
1630015-1630019	3,59	0,032	-0,063	0,127	YES	YES
1630020-1630024	5,05	0,084	-0,011	0,180	YES	YES
1630025-1630029	5,10	-0,043	-0,139	0,052	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,066	YES	+/- 0,500

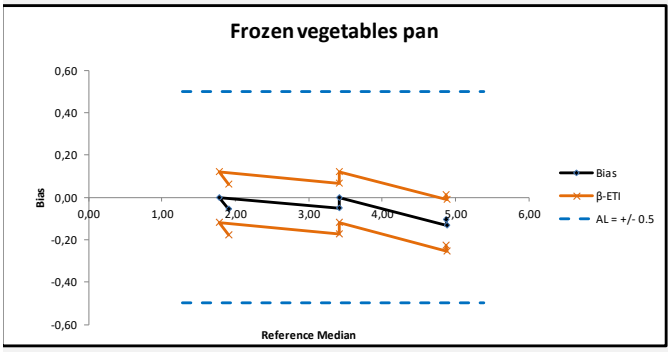
(Food) Category	Seafood products
(Food) Type	Raw fish fillet



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1644538-1644542	2,38	-0,266	-0,392	-0,141	YES	YES
1644543-1644547	2,41	-0,211	-0,336	-0,085	YES	YES
1632449-1632453	3,61	0,000	-0,126	0,126	YES	YES
1632454-1632458	3,56	-0,094	-0,219	0,032	YES	YES
1632459-1632463	4,93	-0,110	-0,235	0,016	YES	YES
1632464-1632468	4,88	-0,103	-0,228	0,023	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,072	0,087	YES	+/- 0,500

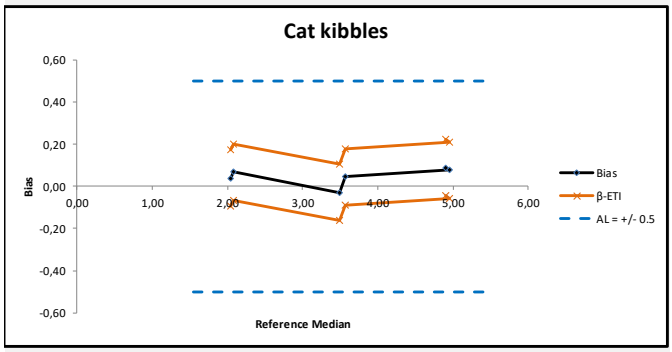
(Food) Category	Vegetables
(Food) Type	Frozen vegetables pan



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1629970-1629974	1,90	-0,058	-0,178	0,062	YES	YES
1629975-1629979	1,78	0,000	-0,120	0,120	YES	YES
1629980-1629984	3,41	-0,053	-0,173	0,067	YES	YES
1629985-1629989	3,41	0,000	-0,120	0,120	YES	YES
1629990-1629994	4,88	-0,133	-0,252	-0,013	YES	YES
1629995-1629999	4,87	-0,106	-0,226	0,014	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,083	YES	+/- 0,500

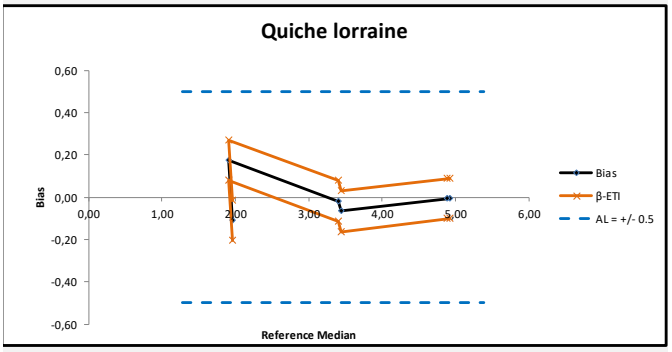
(Food) Category	Animal feed
(Food) Type	Cat kibbles



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1632469-1632473	2,04	0,038	-0,095	0,171	YES	YES
1632474-1632478	2,08	0,067	-0,066	0,200	YES	YES
1632479-1632483	3,49	-0,029	-0,162	0,104	YES	YES
1632484-1632488	3,57	0,045	-0,088	0,177	YES	YES
1632489-1632493	4,95	0,076	-0,057	0,209	YES	YES
1632494-1632498	4,90	0,088	-0,045	0,221	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,083	0,092	YES	+/- 0,500

(Food) Category	Ready to eat and reheat
(Food) Type	Quiche lorraine

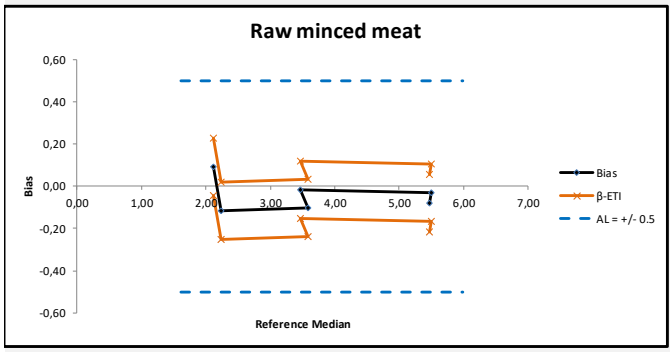


Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1644508-1644512	1,95	-0,109	-0,204	-0,014	YES	YES
1644513-1644517	1,90	0,176	0,081	0,271	YES	YES
1644518-1644522	3,40	-0,018	-0,113	0,078	YES	YES
1644523-1644527	3,45	-0,067	-0,162	0,028	YES	YES
1644528-1654532	4,92	-0,005	-0,101	0,090	YES	YES
1644533-1644537	4,89	-0,006	-0,101	0,090	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,103	0,066	YES	+/- 0,500

Figure 14: Accuracy profiles per category, using the pour plate inoculation for REBECCA

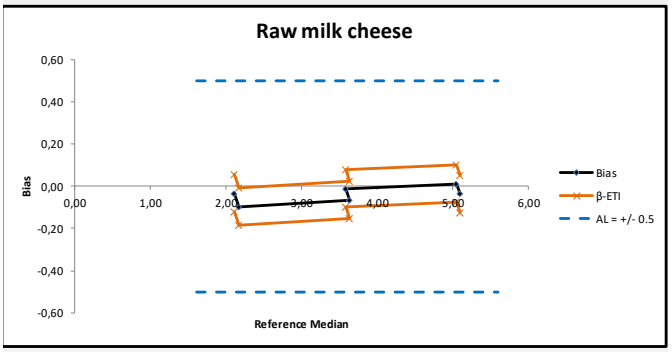
(Food) Category	Meat products
(Food) Type	Raw minced meat



Sample Name	Reference central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1632399-1622503	2,11	0,090	-0,046	0,226	YES	YES
1632504-1632508	2,23	-0,117	-0,252	0,019	YES	YES
1632509-1632513	3,58	-0,103	-0,238	0,033	YES	YES
1632514-1632518	3,46	-0,015	-0,151	0,120	YES	YES
1632519-1632523	5,49	-0,029	-0,165	0,107	YES	YES
1632524-1632528	5,46	-0,082	-0,218	0,054	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,094	YES	+/- 0,500

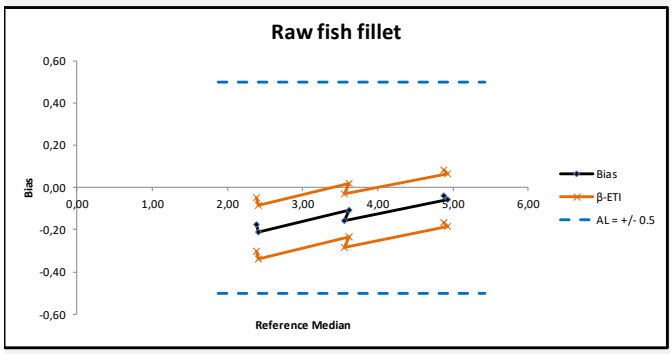
(Food) Category	Dairy products
(Food) Type	Raw milk cheese



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1630000-1630004	2,11	-0,035	-0,123	0,053	YES	YES
1630005-1630009	2,18	-0,097	-0,185	-0,009	YES	YES
1630010-1630014	3,63	-0,065	-0,153	0,023	YES	YES
1630015-1630019	3,59	-0,011	-0,099	0,077	YES	YES
1630020-1630024	5,05	0,011	-0,077	0,100	YES	YES
1630025-1630029	5,10	-0,036	-0,124	0,052	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,061	YES	+/- 0,500

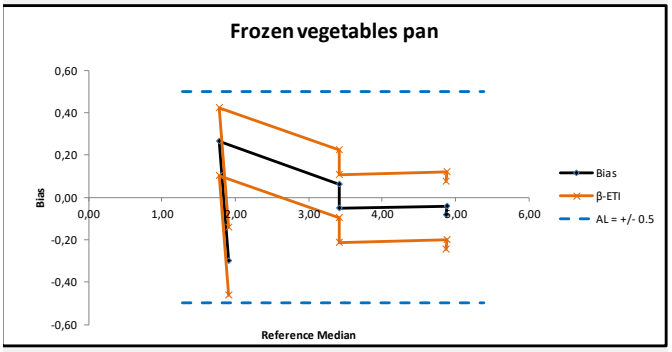
(Food) Category	Seafood products
(Food) Type	Raw fish fillet



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1644538-1644542	2,38	-0,176	-0,302	-0,050	YES	YES
1644543-1644547	2,41	-0,211	-0,336	-0,085	YES	YES
1632449-1632453	3,61	-0,108	-0,233	0,018	YES	YES
1632454-1632458	3,56	-0,158	-0,284	-0,033	YES	YES
1632459-1632463	4,93	-0,060	-0,186	0,065	YES	YES
1632464-1632468	4,88	-0,042	-0,168	0,084	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,072	0,087	YES	+/- 0,500

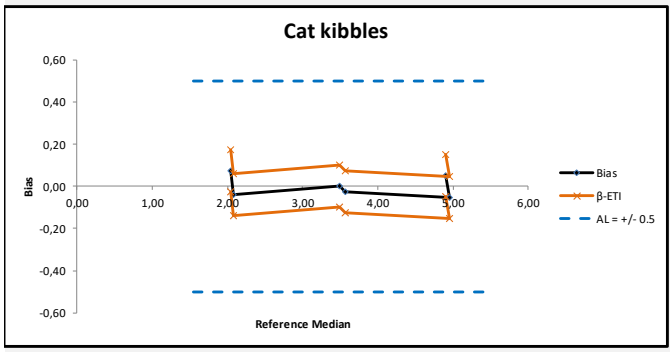
(Food) Category	Vegetables
(Food) Type	Frozen vegetables pan



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1629970-1629974	1,90	-0,301	-0,461	-0,141	YES	YES
1629975-1629979	1,78	0,263	0,103	0,423	YES	YES
1629980-1629984	3,41	0,062	-0,098	0,222	YES	YES
1629985-1629989	3,41	-0,053	-0,213	0,107	YES	YES
1629990-1929994	4,88	-0,042	-0,202	0,118	YES	YES
1629995-1629999	4,87	-0,084	-0,244	0,076	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,111	YES	+/- 0,500

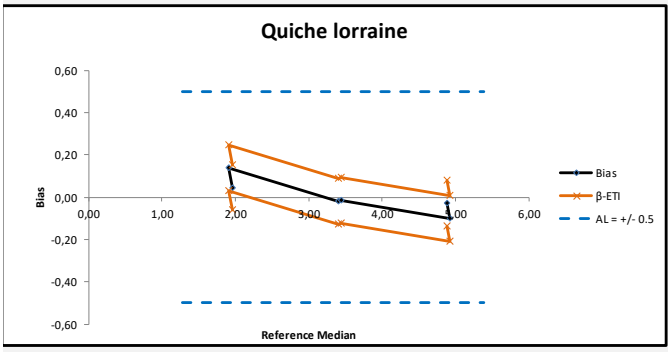
(Food) Category	Animal feed
(Food) Type	Cat kibbles



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1632469-1632473	2,04	0,073	-0,027	0,172	YES	YES
1632474-1632478	2,08	-0,038	-0,137	0,062	YES	YES
1632479-1632483	3,49	0,000	-0,100	0,100	YES	YES
1632484-1632488	3,57	-0,024	-0,124	0,075	YES	YES
1632489-1632493	4,95	-0,052	-0,151	0,048	YES	YES
1632494-1632498	4,90	0,051	-0,048	0,151	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,083	0,069	YES	+/- 0,500

(Food) Category	Ready to eat and reheat
(Food) Type	Quiche lorraine

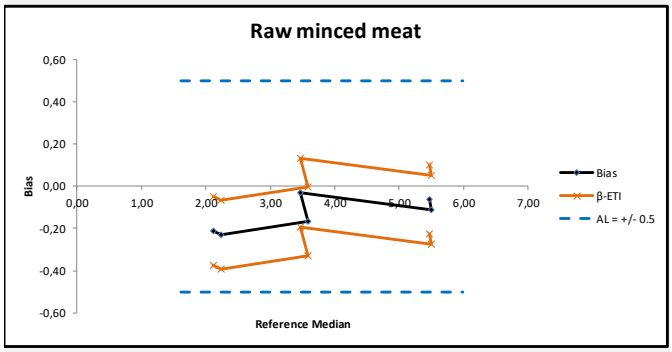


Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1644508-1644512	1,95	0,046	-0,063	0,154	YES	YES
1644513-1644517	1,90	0,138	0,030	0,247	YES	YES
1644518-1644522	3,40	-0,018	-0,126	0,091	YES	YES
1644523-1644527	3,45	-0,016	-0,124	0,092	YES	YES
1644528-1654532	4,92	-0,100	-0,208	0,009	YES	YES
1644533-1644537	4,89	-0,029	-0,137	0,079	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,103	0,075	YES	+/- 0,500

Figure 15: Accuracy profiles per category, using the surface spreading inoculation for REBECCA+EB

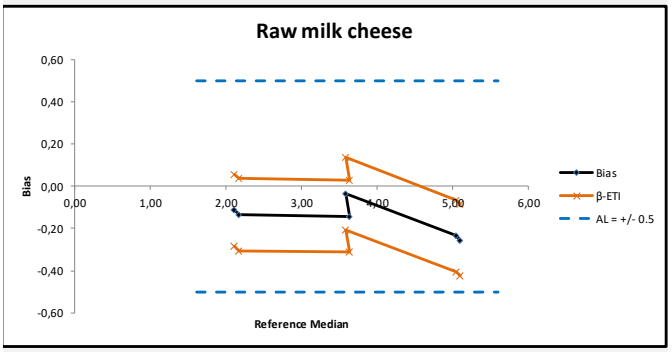
(Food) Category	Meat products
(Food) Type	Raw minced meat



Sample Name	Reference central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1632399-1622503	2,11	-0,211	-0,374	-0,048	YES	YES
1632504-1632508	2,23	-0,230	-0,394	-0,067	YES	YES
1632509-1632513	3,58	-0,165	-0,328	-0,002	YES	YES
1632514-1632518	3,46	-0,031	-0,194	0,132	YES	YES
1632519-1632523	5,49	-0,111	-0,274	0,052	YES	YES
1632524-1632528	5,46	-0,064	-0,228	0,099	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,113	YES	+/- 0,500

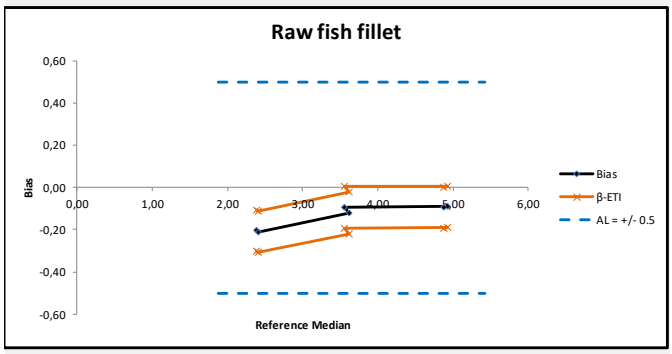
(Food) Category	Dairy products
(Food) Type	Raw milk cheese



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1630000-1630004	2,11	-0,114	-0,284	0,056	YES	YES
1630005-1630009	2,18	-0,135	-0,305	0,036	YES	YES
1630010-1630014	3,63	-0,142	-0,312	0,028	YES	YES
1630015-1630019	3,59	-0,035	-0,205	0,136	YES	YES
1630020-1630024	5,05	-0,236	-0,407	-0,066	YES	YES
1630025-1630029	5,10	-0,255	-0,426	-0,085	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,118	YES	+/- 0,500

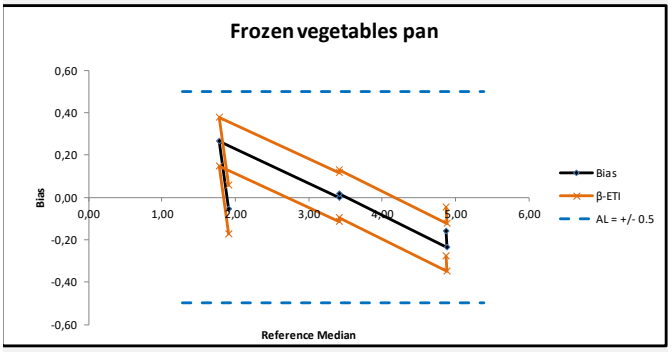
(Food) Category	Seafood products
(Food) Type	Raw fish fillet



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1644538-1644542	2,38	-0,204	-0,302	-0,106	YES	YES
1644543-1644547	2,41	-0,211	-0,309	-0,113	YES	YES
1632449-1632453	3,61	-0,121	-0,220	-0,023	YES	YES
1632454-1632458	3,56	-0,094	-0,192	0,004	YES	YES
1632459-1632463	4,93	-0,091	-0,189	0,008	YES	YES
1632464-1632468	4,88	-0,095	-0,194	0,003	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,072	0,068	YES	+/- 0,500

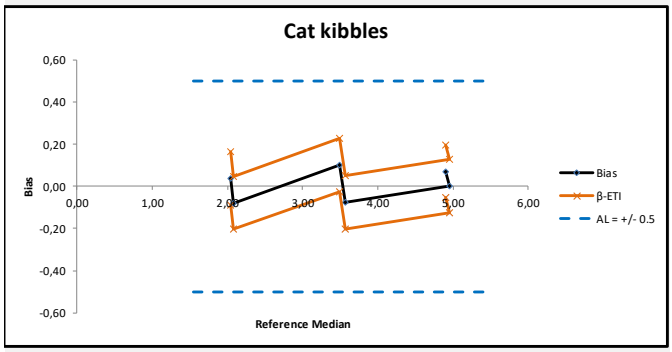
(Food) Category	Vegetables
(Food) Type	Frozen vegetables pan



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1629970-1629974	1,90	-0,058	-0,172	0,056	YES	YES
1629975-1629979	1,78	0,263	0,149	0,377	YES	YES
1629980-1629984	3,41	0,000	-0,114	0,114	YES	YES
1629985-1629989	3,41	0,016	-0,098	0,130	YES	YES
1629990-1929994	4,88	-0,237	-0,351	-0,123	YES	YES
1629995-1629999	4,87	-0,162	-0,276	-0,048	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,079	YES	+/- 0,500

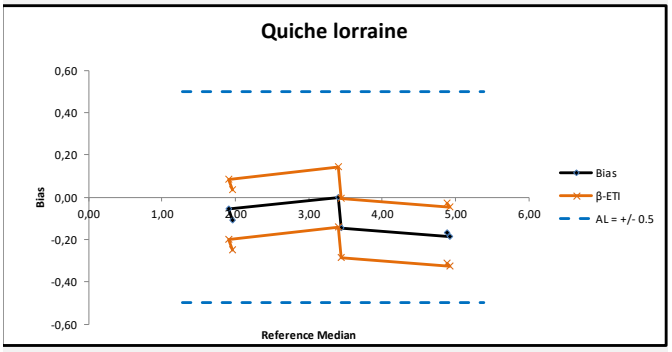
(Food) Category	Animal feed
(Food) Type	Cat kibbles



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1632469-1632473	2,04	0,038	-0,088	0,163	YES	YES
1632474-1632478	2,08	-0,079	-0,205	0,046	YES	YES
1632479-1632483	3,49	0,100	-0,026	0,225	YES	YES
1632484-1632488	3,57	-0,077	-0,202	0,049	YES	YES
1632489-1632493	4,95	0,000	-0,126	0,126	YES	YES
1632494-1632498	4,90	0,070	-0,056	0,196	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,083	0,087	YES	+/- 0,500

(Food) Category	Ready to eat and reheat
(Food) Type	Quiche lorraine

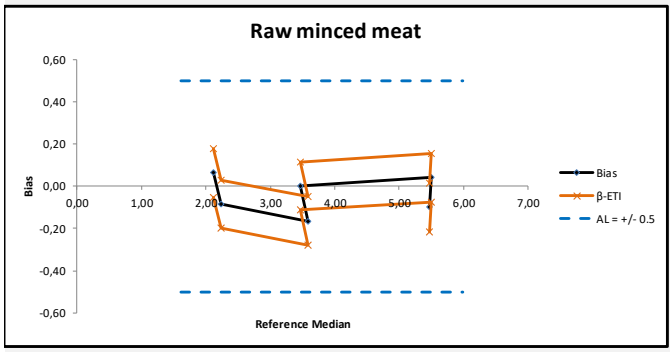


Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1644508-1644512	1,95	-0,109	-0,251	0,032	YES	YES
1644513-1644517	1,90	-0,058	-0,199	0,083	YES	YES
1644518-1644522	3,40	0,000	-0,141	0,141	YES	YES
1644523-1644527	3,45	-0,146	-0,288	-0,005	YES	YES
1644528-1654532	4,92	-0,187	-0,328	-0,045	YES	YES
1644533-1644537	4,89	-0,170	-0,312	-0,029	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,103	0,098	YES	+/- 0,500

Figure 16: Accuracy profiles per category, using the pour plate inoculation for REBECCA+EB

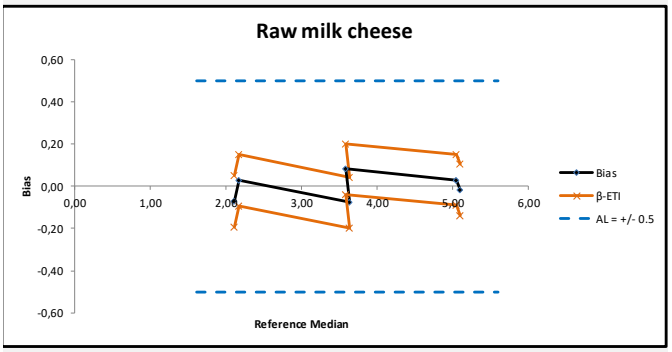
(Food) Category	Meat products
(Food) Type	Raw minced meat



Sample Name	Reference central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1632399-1622503	2,11	0,062	-0,052	0,176	YES	YES
1632504-1632508	2,23	-0,084	-0,198	0,030	YES	YES
1632509-1632513	3,58	-0,165	-0,279	-0,051	YES	YES
1632514-1632518	3,46	0,000	-0,114	0,114	YES	YES
1632519-1632523	5,49	0,040	-0,074	0,154	YES	YES
1632524-1632528	5,46	-0,101	-0,215	0,013	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,079	YES	+/- 0,500

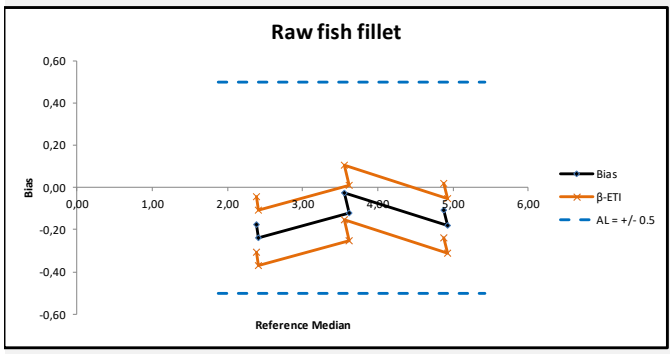
(Food) Category	Dairy products
(Food) Type	Raw milk cheese



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1630000-1630004	2,11	-0,073	-0,194	0,049	YES	YES
1630005-1630009	2,18	0,028	-0,093	0,149	YES	YES
1630010-1630014	3,63	-0,077	-0,198	0,044	YES	YES
1630015-1630019	3,59	0,081	-0,040	0,202	YES	YES
1630020-1630024	5,05	0,030	-0,091	0,151	YES	YES
1630025-1630029	5,10	-0,018	-0,139	0,104	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,084	YES	+/- 0,500

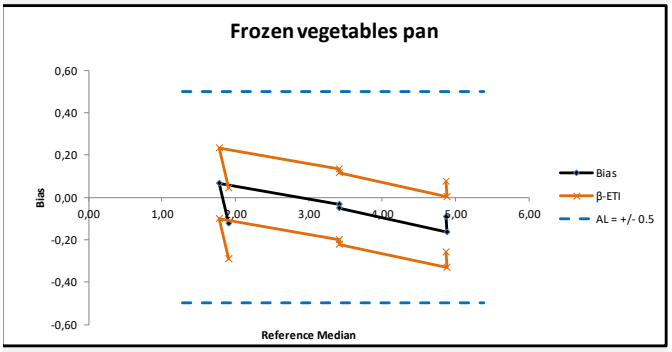
(Food) Category	Seafood products
(Food) Type	Raw fish fillet



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1644538-1644542	2,38	-0,176	-0,306	-0,046	YES	YES
1644543-1644547	2,41	-0,239	-0,369	-0,109	YES	YES
1632449-1632453	3,61	-0,121	-0,251	0,009	YES	YES
1632454-1632458	3,56	-0,025	-0,155	0,105	YES	YES
1632459-1632463	4,93	-0,181	-0,311	-0,051	YES	YES
1632464-1632468	4,88	-0,110	-0,240	0,020	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,072	0,090	YES	+/- 0,500

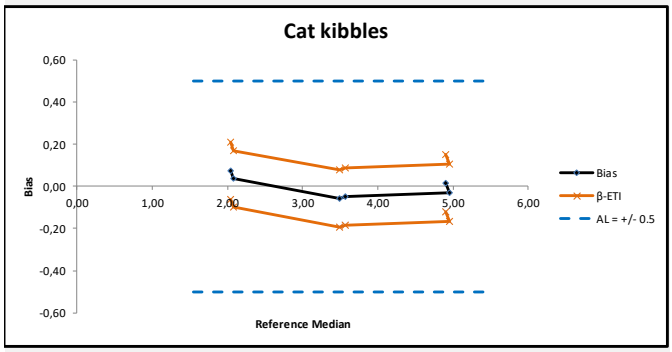
(Food) Category	Vegetables
(Food) Type	Frozen vegetables pan



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1629970-1629974	1,90	-0,125	-0,292	0,043	YES	YES
1629975-1629979	1,78	0,067	-0,101	0,234	YES	YES
1629980-1629984	3,41	-0,035	-0,202	0,133	YES	YES
1629985-1629989	3,41	-0,053	-0,221	0,114	YES	YES
1629990-1929994	4,88	-0,165	-0,332	0,003	YES	YES
1629995-1629999	4,87	-0,091	-0,259	0,076	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,096	0,116	YES	+/- 0,500

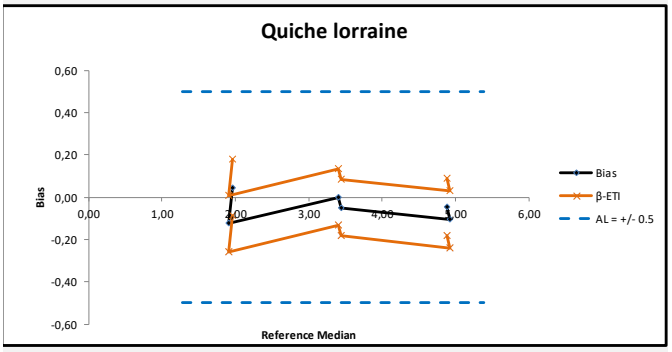
(Food) Category	Animal feed
(Food) Type	Cat kibbles



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1632469-1632473	2,04	0,073	-0,063	0,208	YES	YES
1632474-1632478	2,08	0,035	-0,101	0,170	YES	YES
1632479-1632483	3,49	-0,060	-0,196	0,076	YES	YES
1632484-1632488	3,57	-0,050	-0,185	0,086	YES	YES
1632489-1632493	4,95	-0,030	-0,166	0,105	YES	YES
1632494-1632498	4,90	0,016	-0,120	0,152	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,083	0,094	YES	+/- 0,500

(Food) Category	Ready to eat and reheat
(Food) Type	Quiche lorraine



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1644508-1644512	1,95	0,046	-0,088	0,180	YES	YES
1644513-1644517	1,90	-0,125	-0,259	0,009	YES	YES
1644518-1644522	3,40	0,000	-0,134	0,134	YES	YES
1644523-1644527	3,45	-0,049	-0,183	0,085	YES	YES
1644528-1654532	4,92	-0,106	-0,240	0,028	YES	YES
1644533-1644537	4,89	-0,048	-0,182	0,087	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0,103	0,093	YES	+/- 0,500

The tolerance intervals fall into the acceptability limits for all categories with the two modalities of inoculation for the REBECCA method, as well as for the REBECCA+EB method.

3.2.3. Conclusion

The alternative method is accepted as being equivalent to the reference method.

3.3. Specificity / selectivity

The aim of this study is to check that all the strains of *Escherichia coli* are detected, and that no cross-reaction exists with other Enterobacteriaceae or with strains from other genera.
The inclusivity and the exclusivity of the method are defined by analysis, respectively of 50 positive strains and 30 negative strains.

3.3.1. Protocols

3.3.1.1. Initial validation study

The strains were tested in duplicate according to two types of inoculation of REBECCA agar media: spreading or inclusion method.
Fifty (50) target strains and twenty-two (22) non-target strains were tested.

The raw data are provided in Appendix G.

3.3.1.2. Second renewal study

Eight additional non-target strains were tested.

Tests for non-target microorganisms were performed once with the alternative method (by spreading and pour plate) and the reference method. Pure cultures were grown on a non-selective broth for 24 hours and diluted at an appropriate level before testing. Eight (8) non-target strains were tested. A pure culture of the strains in Brain Heart Infusion Broth was performed at the optimal growth temperature of the strains then enumerated to obtain a countable number of colonies on Petri dishes.

3.3.2. Results

3.3.2.1. Initial validation study

- **Target strains**

The fifty strains of *Escherichia coli* gave typical colonies on REBECCA and REBECCA+EB: blue to blue violet with or without a blue halo.

- **Non-target strains**

The twenty-two non-target strains did not give characteristic aspect onto the REBECCA medium:

- No growth for 21 strains,
- Growth on REBECCA and REBECCA+EB agar media with typical colonies for 1 strain of *Shigella sonnei* R80 (ATCC 9290). However, the scientific literature mentions that some *Shigella* strains, and especially *S. sonnei,* possess a β-D-glucuronidase activity, that can explain the presence of typical colonies

3.3.2.2. Second renewal study

Seven (7) non-target strains did not grow on the REBECCA and on the REBECCA+EB agar media. One strain of *Acinetobacter baumanii* gave atypical white colonies on REBECCA plates, very small atypical pink colonies on REBECCA+EB pour plates and atypical pink colonies on REBECCA+EB surface plates.

3.3.3. Conclusion

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

3.4. Practicability

Practicability is studied as a function of the four criteria defined by the Technical Board in comparing the reference method ISO 16649-2:2001) with the REBECCA method.
The criteria defined are informed below:

Packaging **Volume of reagents**	· AEB520020: pack of 20 plates of Ø 90 mm, · AEB620027: 6 vials of 200 ml base medium · AEB184135: EB supplement qsp 1.2 l · AEB184135/10: EB supplement qsp 1.2 l x 10 · AEB150022: dehydrated REBECCA agar base, flask of 500 g
Storage conditions and kit	The plates of pre-poured complete medium and Kit REBECCA base must be kept between +2°C and +8°C. The expiry date is shown on each plate and each vial.
Use after opening of the kit	The pre-poured complete medium plates must be stored at 2-8°C in their package until the expiry date. The plates poured from flasks can be kept up to 15 days at 2-8°C. After rehydration, the REBECCA enrichment supplement can be stored 24 hours between 2 and 8°C, or up to 7 days if frozen (only one freezing/thawing cycle). AEB184135 – AEB184135/10 – AEB520020 must be stored away from light.
Reagents	Supplements have to be kept protected from light. For the medium in flask, liquefy the medium in a water bath at 100°C and cool to 44-47°C. Per flask of 200 ml of REBECCA medium, add aseptically 1 ml of EB supplement. Homogenize slightly the agar base and the supplement.

Time to result		
Step	**Time required (Day)** REBECCA method	**Time required (Day)** ISO 16649-2 standard
Realization of first dilution and decimal dilutions Media inoculation Plates reading, interpretation and calculation	D0 D0 D1	D0 D0 D1
Obtaining negative or positive results if no characteristic colonv)	**D1**	**D1**
Common step with reference method	Preparation of initial suspension and decimal dilutions.	

3.5. General conclusion for the methods comparison study

The relative trueness study shows a good correlation between the alternative method and the reference method.

The accuracy profile study illustrates that the performances of the alternative method are comparable to those of the reference method.

The alternative method is specific and selective.

Time-to-result is equivalent to that of the reference method (one day), and the alternative method does not require confirmations.

4. Interlaboratory study

The aim of the interlaboratory study, as described in ISO 16140/A1:2011 standard, was to determine the variability of the results obtained in different laboratories using identical samples and to compare these results with those obtained during the methods comparison study.

4.1. Study organization

Twelve (12) collaborators took part in the interlaboratory study. Pasteurized milk was inoculated with an *Escherichia coli* strain coded I69, isolated from a camembert cheese. Only the REBECCA agar media (namely without the EB supplement) was tested.
Eight samples were prepared per collaborator, representing 4 levels of contamination with 2 samples per level. Collaborators and Expert Laboratory carried out the analyses with the reference method and the alternative method.

4.2. Control of experimental parameters

4.2.1. Contamination levels obtained after artificial contamination

The four contamination levels are detailed in the following table.

Table 7: Contamination levels of inoculated samples

Level	Sample	Targeted level (CFU/ml)	Real level (CFU/ml)
Level 0 (L_0)	2 and 8	0	0
Level 1 (L_1)	4 and 7	10-100	24
Level 2 (L_2)	5 and 6	100 - 1000	390
Level 3 (L_3)	1 and 3	1000 - 10 000	4900

4.2.2. Strain stability during shipping

In order to evaluate the *Escherichia coli* strain variability during shipping, bacterial counts of inoculated milk at different levels were checked at different times, during storage at 4°C. Enumeration results (CFU/ml) are reported in table 8.

Table 8: Stability of the Escherichia coli strain at 4°C

Day	*Escherichia coli*					
	Level 1		Level 2		Level 3	
	R1	R2	R1	R2	R1	R2
J0	65	30	380	410	4200	3100
J1	65	50	450	530	4000	4000
J2	30	60	450	430	4700	4500

The results showed a stability of the strain in the shipping conditions.

4.2.3. Shipping conditions

Temperatures registered by the temperature probe during shipping were between 0.9°C and 2.6°C. The temperatures at reception are recorded in the following table.

Table 9: temperatures at reception

Collaborator	Temperature (°C)	State of the samples	Probe temperature (°C)	
			Mean	Standard deviation
A	2,4	Correct	1,8	0,9
B	4,0	Correct	1,8	0,7
C	5,4	Correct	0,9	1,5
D	5,9	Correct	1,6	0,8
E	4,3	Correct	2,3	0,8
F	3,5	Correct	2,6	1,1
G	4,5	Correct	2,1	1,2
H	3,1	Correct	2,4	1,4
I	5,4	Correct	1,1	1,4
J	6,6	Correct	1,5	1,2
K	4,9	Correct	2,2	0,8
L	2,1	Correct	/	/

All collaborators received the packages and the reagents in one day, except:

- Collaborator E which received a part of the reagents one day after the samples,
- Collaborators K and L which received their packages in two days.

The data from collaborators E, K and L were excluded from the final analysis of the results.

4.2.4. Conclusion

The results of 9 collaborators were exploited.

4.3. Results

4.3.1. Expert laboratory

Results obtained for the Expert Laboratory are presented in the table 10.

Table 10: Results of the Expert Laboratory (in CFU/ml)

Level	Reference method		Alternative method	
	Duplicate 1	Duplicate 2	Duplicate 1	Duplicate 2
L_0	<10	<10	<10	<10
L_1	25	60	20	40
L_2	370	350	420	410
L_3	2100	3900	3700	3200

Results according to the ISO 16649-2 standard and according to the alternative method were in agreement.

4.3.2. Results obtained by the collaborators

Detailed results of the 9 laboratories which realized the analysis are presented in Appendix H.

The results are summarized in the table 11 for the low level L_1, intermediate level L_2 and high level L_3.

Table 11: Results in CFU/ml of the collaborators per level of contamination (RM: reference method, AM: alternative method, D: duplicate)

Collaborator	L_1				L_2				L_3			
	RM		AM		RM		AM		RM		AM	
	D1	D2	D1	D2	D1	D2	D1	D2	D1	D2	D1	D2
A	15	20	20	70	340	320	440	370	4800	4500	2900	5100
B	25	55	10	10	410	420	380	300	3800	3900	4100	3600
C	40	45	30	50	460	390	350	280	4100	4300	3100	4500
D	40	35	50	40	360	370	460	430	4500	4900	4200	4500
F	40	30	40	50	420	370	220	290	4000	5400	4700	3900
G	40	25	40	40	460	430	300	360	5000	5100	4800	3700
H	55	65	100	30	420	370	340	420	5700	4500	4700	4500
I	65	75	40	40	390	420	310	400	4500	4500	4500	4500
J	35	25	10	40	450	350	370	400	5000	3400	4000	3500

It's important to note that a part of the results of the level L_1 do not fulfill the requirements of the standard EN ISO 7218/A1:2013 for the low counts of colonies (§ 10.3.2.4.1). Because of the low levels of *E. coli* inoculated, some results are expressed despite of their concentration inferior to 40 CFU/g (less than 4 colonies on Petri dishes for the enumeration of the initial suspension) while they should be noted: "Microorganisms are present but less than 40 per ml".

Eight results of the reference method and six results of the alternative method are concerned.

After the presentation of the project of renewal study of the method in July 2019, the Technical Board agreed with the proposition of the Expert Laboratory to still interpret all the data of the level L_1.

4.3.3. Conclusion

Results of 9 laboratories were finally statistically exploited.

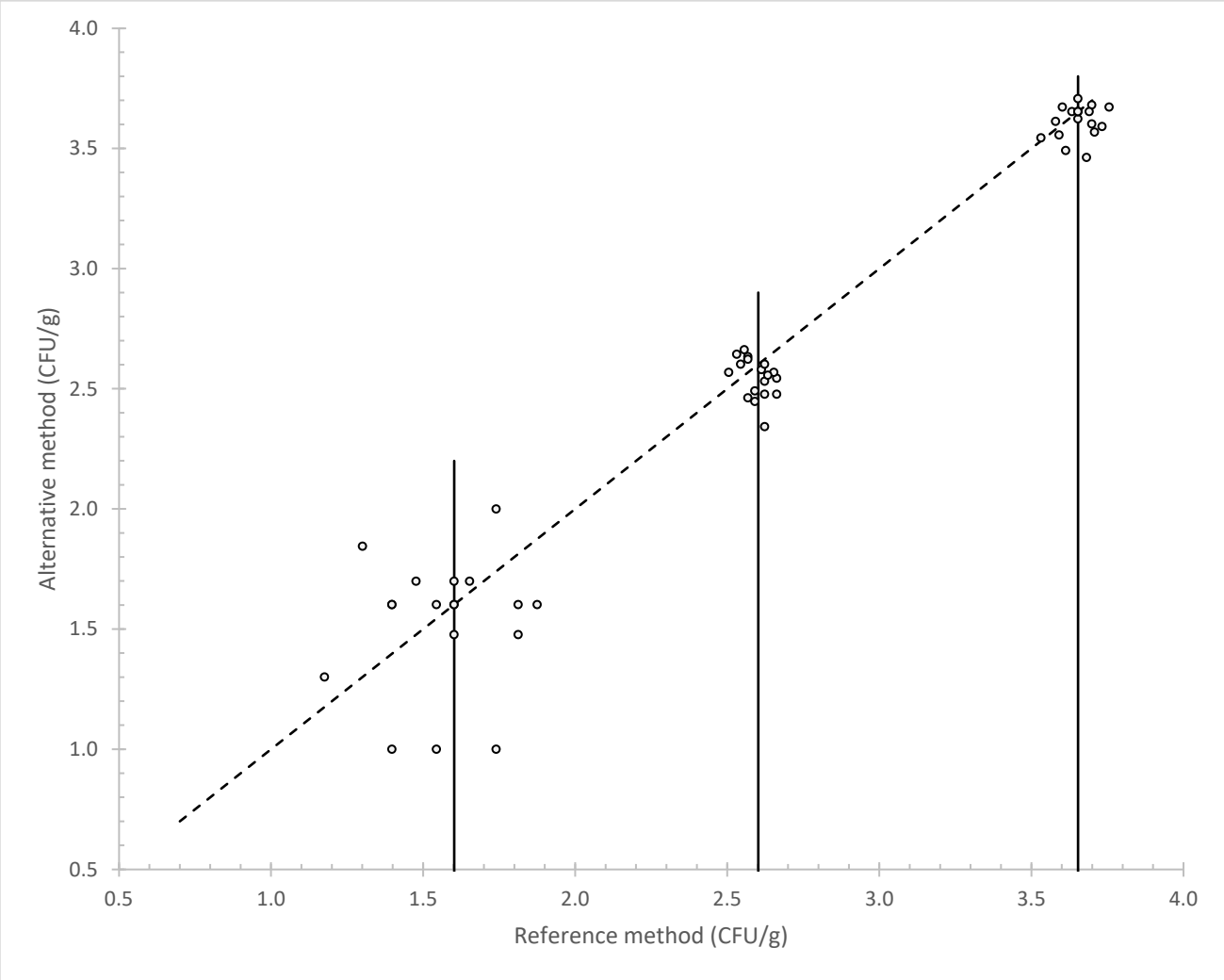
The results obtained by the collaborators were in agreement with those of the Expert Laboratory.

4.4. Statistical interpretations and calculations

4.4.1. Visual linearity checking

After the log10 transformation of all test results, data are plotted with the results of the reference method on the x-axis and the results of the alternative method on the y-axis (figure 17).

Figure 17: Scatter plot of reference-method versus alternative-method results for the interlaboratory study (dotted line: first bisecting line, vertical lines: medians of the measurements obtained with the reference method)



Data are well balanced around the median values of the reference method for each level, but a very slight negative bias is observed for the alternative method at all levels of contamination.

4.4.2. Calculation of the accuracy profile and interpretation

An accuracy profile is drawn according to the calculations provided in the Excel spreadsheet named AP calculation tool ILS (clause 6-2-3 Calculations summary and interpretation of data) ver 14-03-2016.xlsx, available at: http://standards.iso.org/iso/16140/-2/ed-1/en.

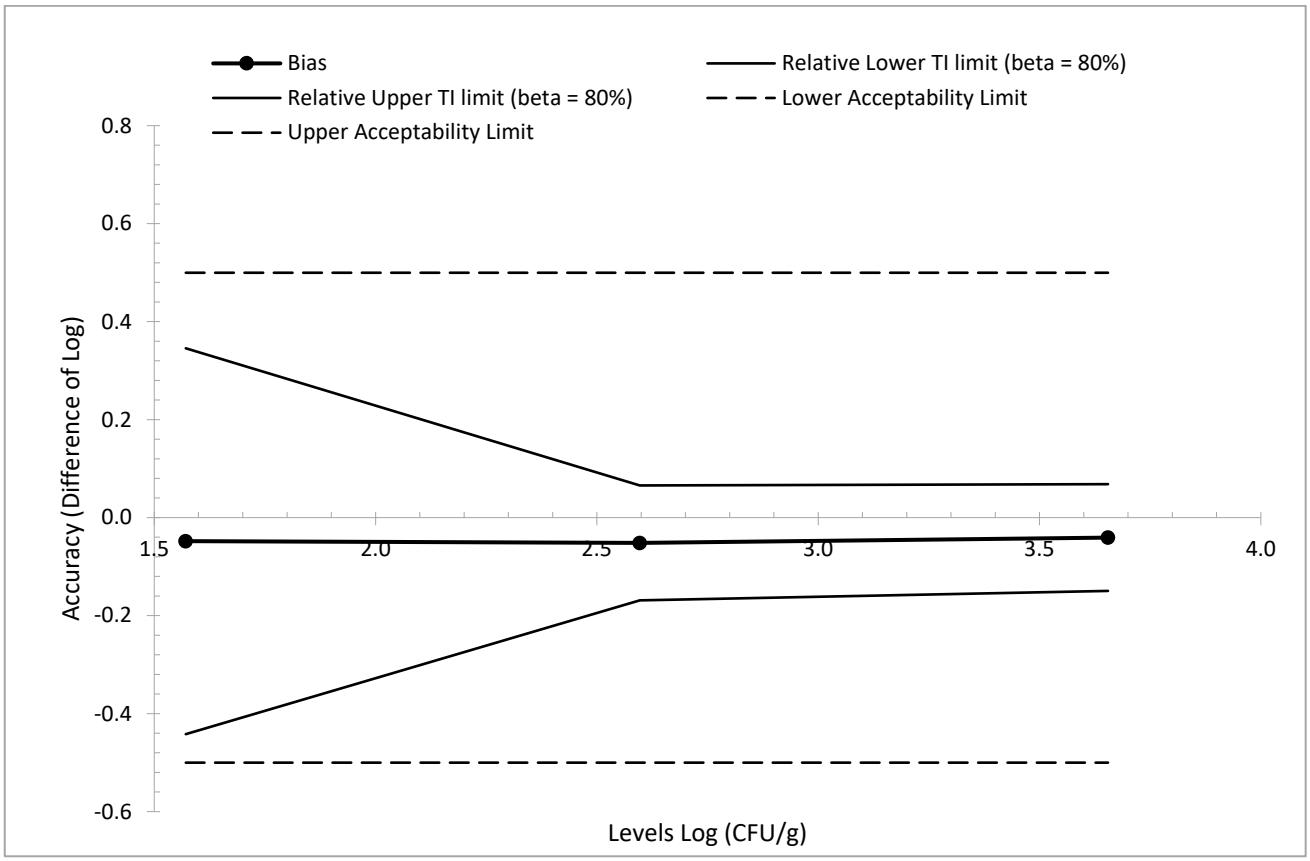
The results of the calculations are provided in table 12.

The graphical representation of the accuracy profile lies in figure 18.

Table 12: Summary of the accuracy profile calculations (AL: acceptability limit, TI: tolerance interval, SD: standard deviation)

Tolerance probability (beta)	80%	80%	80%			
Acceptability limit in log (lambda)	0.50	0.50	0.50			
	Alternative method			**Reference method**		
Levels	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**
Target value	**1.571**	**2.597**	**3.655**			
Number of participants (K)	9	9	9	9	9	9
Average for alternative method	1.523	2.545	3.614	1.571	2.597	3.655
Repeatability standard deviation (sr)	0.236	0.062	0.079	0.112	0.038	0.057
Between-labs standard deviation (sL)	0.158	0.056	0.000	0.157	0.027	0.000
Reproducibility standard deviation (sR)	0.284	0.084	0.079	0.193	0.046	0.057
Corrected number of dof	14.967	13.446	16.941	11.187	14.757	16.941
Coverage factor	1.389	1.401	1.370			
Interpolated Student t	1.341	1.348	1.334			
Tolerance interval standard deviation	0.2937	0.0871	0.0816			
Lower TI limit	1.129	2.428	3.505			
Upper TI limit	1.917	2.663	3.723			
Bias	**-0.048**	**-0.052**	**-0.041**			
Relative Lower TI limit (beta = 80%)	**-0.442**	**-0.169**	**-0.149**			
Relative Upper TI limit (beta = 80%)	**0.346**	**0.066**	**0.068**			
Lower Acceptability Limit	**-0.50**	**-0.50**	**-0.50**			
Upper Acceptability Limit	**0.50**	**0.50**	**0.50**			
Pooled repro standard dev of reference	0.119					

Figure 18: Accuracy profile of the alternative method using β = 80% and λ = 0,50 log_{10} unit



The AL is met for all the contamination levels: the tolerance interval limits of the alternative method are within the acceptability limits of 0.5 log CFU/g

4.5. General conclusion for the interlaboratory study

The tolerance intervals of all levels of contamination fall within the default acceptability limits (±0.5 log CFU/ml).

Despite the very slight bias observed for all levels of contamination (from -0.052 to -0.041 log CFU/ml), the alternative method is regarded as being equivalent to the reference method.

The data and the interpretation of the methods comparison study and of the interlaboratory study fulfilled the requirements of the EN ISO 16140-2:2016 standard. The REBECCA method is considered as equivalent to the reference method described in the ISO 16649-2:2001 standard.

5. General conclusion

The data and their interpretation produced in this summary report fulfill the requirements of both the EN ISO 16140-2:2016 standard and the version 7 of the requirements regarding comparison and interlaboratory studies for implementation of the standard EN ISO 16140-2. The REBECCA method is considered as equivalent to the reference method described in ISO 16649-2:2001 standard.

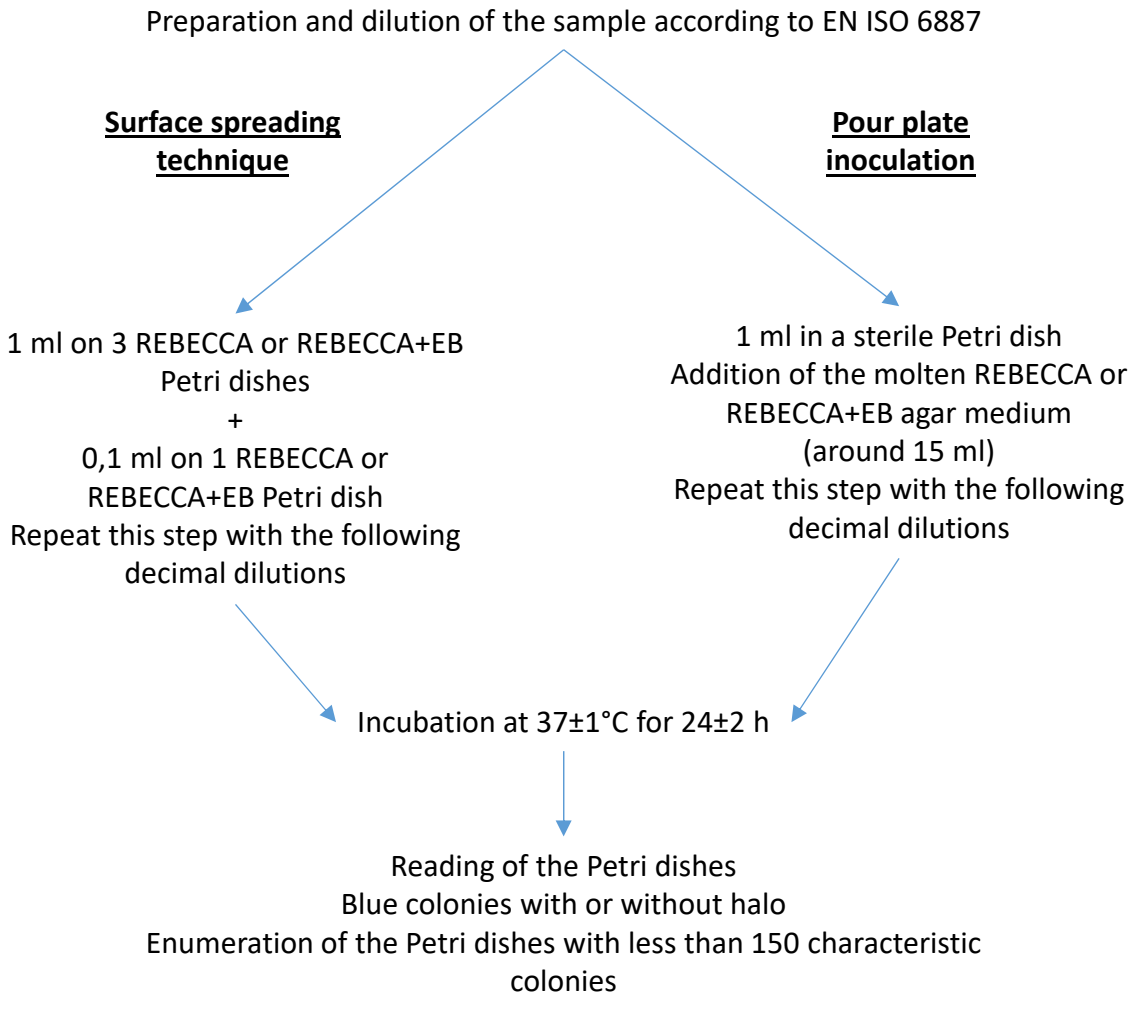
Le Lion d'Angers, December 18th, 2023
François Le Nestour
Head of the Microbiology Department

APPENDICES

APPENDIX A

REBECCA BASE OR REBECCA+EB METHOD

TECHNICAL PROCEDURE



APPENDIX B

ISO 16649-2
TECHNICAL PROCEDURE

Preparation and dilution of the sample according to EN ISO 6887

1 ml in a sterile Petri dish
Addition of the molten TBX agar medium (around 15 ml)
Repeat this step with the following decimal dilutions

Incubation at 44±1°C for 21±3 h
If the presence of stressed cells is suspected, incubation for an initial period of 4 h at 37°C and then incubation at 44°C for 18 to 24 h

Reading
Blue colonies
Enumeration of the Petri dishes with less than 150 characteristic colonies and less than 300 colonies in total

APPENDIX C - Artificial contaminations

Study	Strain	Code	Origin	Stress type	Treatment and intensity	Samples	Number of uses
Initial validation study	*Escherichia coli*	I58	Beef pellets	Spiking	20 min. at 56°C (0.8)	RD 1430 /1431	2
	Escherichia coli	I72	Raw shrimps	Spiking	20 min. at 56°C (0.8)	RD 1427 / 1428 / 1429	3
	Escherichia coli	I63	Minced pork	Spiking	2 weeks at -20°C (0.8)	RD 1435, RD 1436	2
	Escherichia coli	I79	Raw shelled shrimps	Spiking	2 weeks at -20°C (0.6)	RD 1432 /1433 / 1434	3
Renewal study	*Escherichia coli*	EAR487	Beef tongue	Seeding	48 to 72 h at 5°C	1698402 - 1698403 - 1698404 - 1698405 -1698406 - 1698407	6
	Escherichia coli	FBV114	Environment dairy products	Seeding	48 to 72 h at 5°C	1698408 - 1698409 - 1698410 - 1698411	4
	Escherichia coli	GAR051	Raw tongues	Seeding	48 to 72 h at 5°C	1698412 - 1698413 - 1698414 - 1698415	4
	Escherichia coli	BCF262	Aa nori seaweed	Seeding	48 to 72 h at 5°C	1698416 - 1698417 - 1698418 - 1698419 - 1698420	5
	Escherichia coli	GBL293	Chocolate biscuit	Seeding	48 to 72 h at 5°C	1698421 - 1698422	2
	Escherichia coli	EZN508	Chopped steak	Seeding	48 to 72 h at 5°C	1692050 - 1692051 - 1692052 - 1692065 - 1692066	5
	Escherichia coli	TDW583	Raw milk cheese	Seeding	48 to 72 h at 5°C	1692053 - 1692054 - 1692055	3
	Escherichia coli	XBB696	Fish stew	Seeding	48 to 72 h at 5°C	1714588 - 1714589 - 1714590 - 1714591 - 1714592 -1714593	6
	Escherichia coli	VUR867	Hoki with sauce	Seeding	48 to 72 h at 5°C	1714594 - 1714595 - 1714596 - 1714597 - 1714598 - 1714599	6
	Escherichia coli	DMX101	Seafood galette	Seeding	48 to 72 h at 5°C	1714600 - 1729341	2
	Escherichia coli	UBS981	Ham croissant	Seeding	48 to 72 h at 5°C	1714601 - 1714602 - 1714603 - 1714604	4
	Escherichia coli	UVS777	Minced beef	Seeding	48 to 72 h at 5°C	1729339 - 1729340	2
	Escherichia coli	TZP821	Hummus and beets	Spiking	15 min at 56°C/cold water (0.9)	1729342	1
	Escherichia coli	UDD835	Spinach, potatoes and bechamel sauce	Seeding	48 to 72 h at 5°C	1729344 - 1729345	2

APPENDIX D

Trueness study raw results

Key:

replicate analyzed during the initial validation study,
not considered as part of the renewal study ac. EN ISO 16140-2:2016

not realized: only one replicate analyzed during the renewal study
ac. EN ISO 16140-2:2016

Results are expressed in CFU/g or ml

nc:	not countable
	Estimated number
	Microorganisms are present but less than 40 per g or ml
	Results not countable or inferior to the limit of quantification

IVS: Initial validation study
RS: Renewal study

Meat products

Study	Sample code	Sample name	AC	Type	EN ISO 16649-2 (■ for the renewal study)						REBECCA										REBECCA+EB									
											Surface spreading					Pour plate					Surface spreading					Pour plate				
					Dil.	R1		R2		R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2
						CFU/ plate 1	CFU/ plate 2	CFU/ plate 1	CFU/ plate 2	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result
IVS	HA 4187	Raw sausage with herbs	No	c	-1	39	27	34	22	310	280	-2	4	6	400	600	-1	43	36	420	360	-2	6	3	600	300	-1	48	22	490	240
					-2	2	1	3	2			-3	1	0			-2	3	4			-3	0	0			-2	6	5		
IVS	MV 1916	Merguez	No	c	-1	2	3	3	4	25	35	-1	3	3	30	30	-1	7	4	70	40	-1	2	3	20	30	-1	5	3	50	30
					-2	0	0	0	0			-2	0	0			-2	0	0			-2	0	0			-2	0	0		
IVS	HA 4490	Rack of lamb	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RG 3028	Raw duck filet	No	a	-1	24	24	15	25	240	230	-2	4	3	400	300	-1	31	31	310	320	-2	2	3	200	300	-1	26	33	250	340
					-2	4	0	8	3			-3	0	0			-2	3	4			-3	0	0			-2	2	4		
IVS	V 7798	Pork cheeks	No	a	-1	0	0	0	0	<10	<10	-1	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-2	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	Q 2272	Stuffing	No	c	-1	>150	>150	>150	>150	2600	2150	-2	33	48	3000	4600	-1	>150	>150	3200	3300	-2	29	35	2900	3500	-1	>150	>150	2200	3600
					-2	27	25	23	20			-3	0	2			-2	32	33			-3	3	3			-2	22	36		
IVS	VR 4755	Veal merguez	No	c	-3	8	10	7	5	9000	6000	-3	12	11	12000	11000	-3	16	9	16000	9000	-3	8	13	8000	13000	-3	13	16	14000	16000
					-4	2	0	0	0			-4	1	0			-4	2	0			-4	2	3			-4	2	1		
IVS	VI 320	Turkey, veal, chicken mix	No	b	-1	36	32	36	38	360	370	-2	8	7	800	700	-1	26	44	280	445	-2	5	6	500	600	-1	35	40	390	464
					-2	6	5	4	3			-3	1	0			-2	5	5			-3	0	1			-2	8	11		
IVS	VR 4768	Ground beef	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	VI 585	Beef tartare	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	VR 4754	Raw chicken filet	No	a	-1	3	3	3	5	30	40	-1	3	4	30	40	-1	6	3	60	30	-1	3	3	30	30	-1	2	3	20	30
					-2	0	0	0	0			-2	0	0			-2	0	0			-2	0	0			-2	0	0		
IVS	VI 717	Poultry livers	No	b	-1	>150	>150	>150	>150	13000	11850	-2	116	140	11000	14000	-1	>150	>150	11000	11700	-2	126	110	13000	11000	-1	>150	>150	14000	13300
					-2	121	137	116	115			-3	10	12			-2	114	117			-3	13	11			-2	140	133		
IVS	DJ 3712	Meat	No	a	-1	22	26	21	35	250	255	-2	2	3	200	300	-1	42	40	430	410	-2	2	3	200	300	-1	36	27	390	282
					-2	7	0	0	0			-3	1	1			-2	5	5			-3	1	0			-2	7	4		
IVS	VR 5168	Chicken	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	HA 4696	Beef steak	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	VI 946	Chicken	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	HA 4940	Chipolatas	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	VI 1051	Marinated chicken	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	VR 5152	Kebab	No	b	-1	6	6	8	5	60	65	-2	1	1	100	100	-1	15	10	150	100	-2	1	1	100	100	-1	13	7	130	70
					-2	0	0	2	0			-3	0	0			-2	2	0			-3	0	0			-2	1	1		
RS	1698415	Cooked pork shank	Yes	b	-1	10				100		-1	16		150		-1	23		220		-1	14		140		-1	21		200	
					-2	1						-2	1				-2	1				-2	1				-2	1			
RS	1691982	Mechanically separated meat	No	a	-2	27				2700		-2	34		3400		-2	33		3300		-2	25		2500		-2	20		1900	
					-3	3						-3	3				-3	3				-3	3				-3	1			
RS	1691981	Turkey filet	No	a	-2	19				1800		-2	15		1500		-2	16		1600		-2	23		2300		-2	13		1300	
					-3	1						-3	1				-3	2				-3	2				-3	1			
RS	1691980	Mechanically separated meat	No	a	-1	119				1300		-1	145		1400		-1	116		1100		-1	nc		1800		-1	nc		1500	
					-2	19						-2	10				-2	6				-2	18				-2	15			
RS	1692012	Turkey thighs	No	a	-2	nc				88000		-2	nc		65000		-2	nc		65000		-2	>150		15000		-2	nc		83000	
					-3	88						-3	65				-3	65				-3	15				-3	83			

Meat products

Study	Sample code	Sample name	AC	Type	Dil.	EN ISO 16649-2 (■ for the renewal study)						REBECCA										REBECCA+EB									
												Surface spreading					Pour plate					Surface spreading					Pour plate				
						R1		R2		R1	R2																				
						CFU/ plate 1	CFU/ plate 2	CFU/ plate 1	CFU/ plate 2	Result	Result	Dil.	CFU	CFU	Result	Result	Dil.	CFU	CFU	Result	Result	Dil.	CFU	CFU	Result	Result	Dil.	CFU	CFU	Result	Result
RS	1692019	Sausage with herbs	No	c	-1	nc				1400		-1	nc		1300		-1	nc		1200		-1	nc		1600		-1	nc		1500	
					-2	14						-2	13				-2	12				-2	16				-2	15			
RS	1692021	Merguez	No	c	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692046	Slices of smoked duck	No	c	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692047	Nature lardons	No	c	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692048	Salami	No	c	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692049	Bacon	No	c	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692065	Slices of smoked duck	Yes	c	-1	0				<10		-1	4		40		-1	1		10		-1	2		20		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692051	Beef parmentier	Yes	b	-1	2				20		-1	4		40		-1	1		10		-1	4		40		-1	2		20	
					-2	0						-2	1				-2	0				-2	0				-2	0			
RS	1698407	Cooked chicken fingers	Yes	b	-3	36				36000		-3	42		42000		-3	38		38000		-3	21		21000		-3	36		36000	
					-4	4						-4	4				-4	4				-4	2				-4	4			
RS	1698412	Quiche lorraine	Yes	b	-1	9				90		-1	16		160		-1	17		170		-1	16		180		-1	10		130	
					-2	1						-2	2				-2	2				-2	4				-2	4			
RS	1726643	Cured ham	No	c	-1	40				430		-1	33		340		-1	32		320		-1	35		330		-1	37		370	
					-2	7						-2	4				-2	3				-2	1				-2	4			
RS	1729339	Bolognese sauce	Yes	b	-1	18				180		-1	13		130		-1	14		150		-1	13		130		-1	14		150	
					-2	2						-2	1				-2	2				-2	1				-2	2			
RS	1729340	Ground veal	Yes	a	-1	7				70		-1	6		60		-1	8		80		-1	8		80		-1	7		70	
					-2	0						-2	0				-2	0				-2	0				-2	0			

Dairy and egg products

Study	Sample code	Sample name	AC	Type	Dil.	EN ISO 16649-2 (■ for the renewal study)						REBECCA												REBECCA+EB											
						R1		R2		R1	R2	Surface spreading					Pour plate							Surface spreading					Pour plate						
												Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2			Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2		
						CFU/ plate 1	CFU/ plate 2	CFU/ plate 1	CFU/ plate 2	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result				CFU	CFU	Result	Result		CFU	CFU	Result	Result		
IVS	M 46205	Fluid fresh cream	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10			-2	0	0	<100	<100	-1	0	0	<10	<10		
					-2	0	0	0	0			-3	0	0			-2	0	0					-3	0	0			-2	0	0				
IVS	VI 559	Roquefort cheese	No	b	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10			-2	0	0	<100	<100	-1	0	0	<10	<10		
					-2	0	0	0	0			-3	0	0			-2	0	0					-3	0	0			-2	0	0				
IVS	R 36162	Camembert cheese	No	b	-3	20	16	21	20	19000	19100	-3	18	23	17000	24000	-3	20	20	21000	20000			-3	15	22	15000	20000	-3	23	25	22000	25400		
					-4	3	3	0	1			-4	1	3			-4	3	2					-4	2	0			-4	1	3				
IVS	MV 2444	Cheese	No	a	-1	48	69	54	68	570	610	-1	51	51	500	500	-1	54	51	550	500			-1	51	62	470	600	-1	43	64	430	600		
					-2	4	4	3	4			-2	4	5			-2	7	3					-2	1	4			-2	4	3				
IVS	R 36786	Camembert cheese	No	b	-4	108	110	108	125	1100000	1300000	-4	62	88	700000	9,3E+05	-4	140	110	1400000	1100000			-4	55	51	500000	4,6E+05	-4	127	114	1200000	1,1E+06		
					-5	13	6	12	13			-5	15	14			-5	15	15					-5	4	0			-5	9	11				
IVS	R 36889	Camembert cheese	No	b	-6	9	5	5	7	7000000	6000000	-6	9	3	9000000	300000	-6	10	10	9100000	10000000			-6	2	9	2000000	9000000	-6	11	7	10000000	7000000		
					-7	0	0	0	1			-7	1	1			-7	0	1					-7	1	0			-7	0	1				
IVS	R 37297	Camembert cheese	No	b	-3	36	43	33	22	41000	29000	-3	57	36	61000	40000	-3	51	42	51000	44000			-3	49	39	47000	4,1E+04	-3	42	35	43000	3,6E+04		
					-4	5	6	5	4			-4	10	7			-4	5	6					-4	3	6			-4	5	5				
IVS	RD 1375	Brie cheese	No	b	-1	1	2	2	1	15	15	-1	1	1	10	10	-1	1	3	10	30			-1	1	1	10	10	-1	1	1	10	10		
					-2	0	0	0	0			-2	0	0			-2	0	0					-2	0	0			-2	0	0				
IVS	VR 4896	Caribbean ice-cream	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10			-2	0	0	<100	<100	-1	0	0	<10	<10		
					-2	0	0	0	0			-3	0	0			-2	0	0					-3	0	0			-2	0	0				
IVS	RD 1300	Gaperon cheese	No	b	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10			-2	0	0	<100	<100	-1	0	0	<10	<10		
					-2	0	0	0	0			-3	0	0			-2	0	0					-3	0	0			-2	0	0				
IVS	RD 1376	Camembert cheese	No	b	-1	58	64	41	48	630	460	-2	10	4	910	400	-1	72	59	710	660			-2	4	3	400	300	-1	74	56	760	560		
					-2	9	7	6	7			-3	0	0			-2	6	13					-3	0	0			-2	10	6				
IVS	RD 1368	Reblochon cheese	No	b	-2	91	70	97	85	7700	8900	-2	82	93	8500	8200	-2	71	78	7200	7400			-2	84	72	8600	7400	-2	68	78	6700	7900		
					-3	4	5	9	5			-3	12	7			-3	8	3					-3	11	9			-3	6	9				
IVS	RD 1382	Saint-Nectaire cheese	No	b	-1	99	101	92	102	1000	1000	-1	89	85	900	900	-1	100	100	1000	1000			-1	99	100	1000	1000	-1	100	111	1000	1130		
					-2	17	7	6	16			-2	10	14			-2	12	11					-2	11	10			-2	10	13				
IVS	W 14564	Emmental cheese	No	b	-1	37	44	46	48	400	480	-1	25	46	230	418	-1	46	57	430	580			-1	29	41	290	400	-1	34	32	360	300		
					-2	3	5	6	5			-2	0	0			-2	1	6					-2	3	4			-2	6	2				
IVS	R 36986	Camembert cheese	No	b	-1	149	150	156	147	1600	1600	-2	12	18	1500	1727	-1	133	137	1400	1360			-2	9	15	900	1540	-1	136	108	1300	1050		
					-2	32	24	24	32			-3	5	1			-2	18	13					-3	1	2			-2	8	8				
RS	1691972	Raw milk	No	b	-1	0				<10		-1	0		<10		-1	0		<10				-2	0		<10		-1	0		<10			
					-2	0						-2	0				-2	0						-2	0				-2	0					
RS	1691973	Raw milk	No	b	-1	0				<10		-1	0		<10		-1	0		<10				-1	0		<10		-1	0		<10			
					-2	0						-2	0				-2	0						-2	0				-2	0					
RS	1691974	Pasteurized milk	No	a	-1	0				<10		-1	0		<10		-1	0		<10				-1	0		<10		-1	0		<10			
					-2	0						-2	0				-2	0						-2	0				-2	0					
RS	1691975	Cake dough	No	c	-1	nc				2800		-1	nc		2800		-1	nc		2700				-1	nc		3000		-1	nc		2000			
					-2	28						-2	28				-2	27						-2	30				-2	20					
RS	1691976	Raw milk tomme de Savoie cheese	No	b	-2	nc				31000		-2	nc		27000		-2	nc		24000				-2	nc		41000		-2	nc		26000			
					-3	31						-3	27				-3	24						-3	41				-3	26					
RS	1691977	Camembert cheese	No	a	-1	106				1100		-1	71		730		-1	60		590				-1	48		450		-1	60		640			
					-2	14						-2	9				-2	5						-2	1				-2	10					
RS	1691978	Goat milk yoghurt	No	a	-1	0				<10		-1	0		<10		-1	0		<10				-1	0		<10		-1	0		<10			
					-2	0						-2	0				-2	0						-2	0				-2	0					
RS	1691979	Chocolate cake	No	c	-1	0				<10		-1	0		<10		-1	0		<10				-1	0		<10		-1	0		<10			
					-2	0						-2	0				-2	0						-2	0				-2	0					
RS	1691983	Liquid egg yolk	No	c	-1	0				<10		-1	0		<10		-1	0		<10				-1	0		<10		-1	0		<10			
					-2	0						-2	0				-2	0						-2	0				-2	0					
RS	1691984	Strawberry tiramisu	No	c	-1	0				<10		-1	0		<10		-1	0		<10				-1	0		<10		-1	0		<10			
					-2	0						-2	0				-2	0						-2	0				-2	0					

Dairy and egg products

Study	Sample code	Sample name	AC	Type	EN ISO 16649-2 (■ for the renewal study)						REBECCA										REBECCA+EB									
											Surface spreading					Pour plate					Surface spreading					Pour plate				
					Dil.	R1		R2		R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2
						CFU/ plate 1	CFU/ plate 2	CFU/ plate 1	CFU/ plate 2	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result
RS	1691989	Raw milk	No	b	-1	0				<10		-1	0		<10		-1	1		10		-1	1		10		-1	2		20	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692008	Raw milk Chaource cheese	No	b	-1	1				10		-1	1		10		-1	1		10		-1	0		<10		-1	1		10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692010	Raw milk Langres cheese	No	b	-1	nc				1300		-1	60		600		-1	nc		1000		-1	75		790		-1	nc		1000	
					-2	13						-2	6				-2	10				-2	12				-2	10			
RS	1692014	Pasteurized milk tomme angevine cheese	No	a	-1	94				910		-1	66		730		-1	92		950		-1	73		760		-1	88		950	
					-2	6						-2	14				-2	12				-2	11				-2	16			
RS	1692016	Raw milk Curé nantais cheese	No	b	-1	12				120		-1	12		120		-1	12		120		-1	7		70		-1	14		130	
					-2	1						-2	1				-2	1				-2	1				-2	0			
RS	1692008	Pistachio mousse	No	c	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692054	Fresh cream	Yes	a	-1	2				20		-1	5		50		-1	9		90		-1	1		10		-1	3		30	
					-2	0						-2	0				-2	1				-2	0				-2	0			
RS	1692055	Yoghurt	Yes	a	-1	3				30		-1	2		20		-1	7		70		-1	1		10		-1	2		20	
					-2	0						-2	0				-2	1				-2	0				-2	0			
RS	1698408	Cottage cheese	Yes	a	-1	9				90		-1	6		60		-1	7		70		-1	18		170		-1	10		100	
					-2	1						-2	1				-2	0				-2	1				-2	1			
RS	1698409	Fresh cream	Yes	a	-1	15				150		-1	9		90		-1	11		120		-1	8		80		-1	13		130	
					-2	1						-2	1				-2	2				-2	1				-2	1			
RS	1698411	Rice pudding	Yes	c	-1	37				350		-1	33		320		-1	34		340		-1	22		250		-1	22		250	
					-2	1						-2	2				-2	3				-2	5				-2	5			
RS	1726640	Strawberry macarons	No	c	-1	12				140		-1	12		120		-1	15		150		-1	16		160		-1	10		110	
					-2	3						-2	1				-2	2				-2	2				-2	2			
RS	1726641	Pistachio cream pastry	No	c	-2	>150				140000		-2	>150		120000		-2	>150		130000		-2	>150		120000		-2	>150		120000	
					-3	142						-3	121				-3	126				-3	123				-3	124			
RS	1726642	Chocolate éclair	No	c	-1	14				150		-1	12		120		-1	24		270		-1	18		190		-1	16		160	
					-2	2						-2	1				-2	6				-2	3				-2	2			

Seafood products

Study	Sample code	Sample name	AC	Type	Dil.	EN ISO 16649-2 (■ for the renewal study)						REBECCA										REBECCA+EB									
												Surface spreading					Pour plate					Surface spreading					Pour plate				
						R1		R2		R1	R2		R1	R2	R1	R2		R1	R2	R1	R2		R1	R2	R1	R2		R1	R2	R1	R2
						CFU/ plate 1	CFU/ plate 2	CFU/ plate 1	CFU/ plate 2	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result
IVS	VI 397	Cooked shrimps	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	<1	<1	<10	<10	-2	<1	<1	<100	<100	-1	<1	<1	<10	<10
					-2	0	0	0	0			-3	0	0			-2	<1	<1			-3	<1	<1			-2	<1	<1		
IVS	S 10132	Crayfish salad	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	<1	<1	<10	<10	-2	<1	<1	<100	<100	-1	<1	<1	<10	<10
					-2	0	0	0	0			-3	0	0			-2	<1	<1			-3	<1	<1			-2	<1	<1		
IVS	M 46488	Tarama	No	c	-1	0	0	0	0%	<10	<10	-2	0	0	<100	<100	-1	<1	<1	<10	<10	-2	<1	<1	<100	<100	-1	<1	<1	<10	<10
					-2	0	0	0	0			-3	0	0			-2	<1	<1			-3	<1	<1			-2	<1	<1		
IVS	HA 4520	Gambas	No	a	-1	0	0	0	0%	<10	<10	-2	0	0	<100	<100	-1	<1	<1	<10	<10	-2	<1	<1	<100	<100	-1	<1	<1	<10	<10
					-2	0	0	0	0			-3	0	0			-2	<1	<1			-3	<1	<1			-2	<1	<1		
IVS	HA 4599	Tabbouleh of the sea	No	c	-1	0	0	0	0%	<10	<10	-2	0	0	<100	<100	-1	<1	<1	<10	<10	-2	<1	<1	<100	<100	-1	<1	<1	<10	<10
					-2	0	0	0	0			-3	0	0			-2	<1	<1			-3	<1	<1			-2	<1	<1		
IVS	S 9942	Ocean-style salad	No	c	-1	0	0	0	0%	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RG 3033	Sole fillets	No	c	-1	0	0	0	0%	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	VI 311	Marinated salmon	No	b	-1	0	0	0	0%	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	Q 2271	Shrimps ravioli	No	c	-3	37	44	36	36	40000	3,8E+04	-3	34	45	35000	4,5E+04	-3	38	35	37000	3,4E+04	-3	35	35	35000	3,3E+04	-3	39	34	39000	3,3E+04
					-4	5	2	11	1			-4	4	4			-4	3	2			-4	3	1			-4	4	2		
IVS	C 85	Bass tartare	No	a	-1	78	78	84	77	780	810	-2	5	7	500	700	-1	69	93	660	940	-2	9	10	900	1000	-1	68	76	650	780
					-2	9	6	8	10			-3	2	2			-2	4	10			-3	0	1			-2	4	10		
IVS	MV 2234	Tabbouleh of the sea	No	c	-1	7	0	4	4	35	40	-1	3	4	30	40	-1	6	2	60	20	-1	3	3	30	30	-1	3	3	30	30
					-2	0	0	0	0			-2	0	0			-2	2	1			-2	0	0			-2	2	1		
IVS	DJ 3253	Pork shrimps brioche	No	c	-2	139	142	121	133	15000	13000	-2	148	166	15000	16000	-2	135	136	13000	14000	-2	126	128	13000	13000	-2	130	137	13000	14000
					-3	23	17	17	19			-3	17	12			-3	10	19			-3	14	12			-3	10	15		
IVS	VR 5037	Shrimps bites	No	c	-2	57	34	48	37	4900	4800	-2	33	38	3500	3900	-2	57	44	5600	4545	-2	41	42	4400	3900	-2	48	53	4500	5820
					-3	5	11	10	10			-3	5	5			-3	5	6			-3	7	1			-3	2	11		
IVS	DJ 3789	Beijing-style ravioli	No	c	-4	92	96	107	119	980000	1100000	-4	126	136	1300000	1400000	-4	102	112	1000000	1100000	-4	140	96	1400000	930000	-4	135	135	1300000	1300000
					-5	12	16	10	9			-5	16	16			-5	9	11			-5	16	16			-5	12	10		
IVS	C 118	Mussels	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	MV 2921	Fish stuffing for nems	No	c	-1	26	15	29	24	190	240	-1	49	44	450	400	-1	38	24	410	245	-1	47	42	430	380	-1	33	21	350	255
					-2	1	0	0	0			-2	0	0			-2	7	3			-2	0	0			-2	5	7		
IVS	HA 5284	Smoked herring	No	b	-1	30	80	40	20	550	300	-2	7	6	700	600	-2	5	6	500	600	-2	4	5	400	500	-2	5	8	500	800
					-2	6	6	2	4			-3	1	0			-3	0	1			-3	0	1			-3	0	0		
IVS	Q 2235	Shrimps bites	No	c	-1	12	17	9	10	150	95	-1	22	26	200	240	-1	26	27	280	320	-1	35	44	350	436	-1	35	39	370	409
					-2	1	2	2	0			-2	0	0			-2	5	8			-2	3	4			-2	6	6		
IVS	CI 141	Salmon	No	a	-1	39	40	34	42	390	390	-1	17	23	150	210	-1	19	17	220	210	-1	18	19	180	190	-1	22	17	210	180
					-2	2	4	3	6			-2	0	0			-2	5	6			-2	2	2			-2	1	3		
RS	1691992	Whiting fillet	No	a	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1691995	Cod fillet	No	a	-1	0				<10		-1	1		10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1691999	Salmon fillet	No	a	-1	0				<10		-1	0		<10		-1	1		10		-1	1		10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1714591	Smoked salmon	Yes	b	-1	9				90		-1	10		100		-1	10		90		-1	9		90		-1	8		80	
					-2	0						-2	1				-2	0				-2	0				-2	0			

Seafood products

Study	Sample code	Sample name	AC	Type	Dil.	EN ISO 16649-2 (■ for the renewal study)						REBECCA										REBECCA+EB									
												Surface spreading					Pour plate					Surface spreading					Pour plate				
						R1		R2		R1	R2		R1	R2	R1	R2		R1	R2	R1	R2		R1	R2	R1	R2		R1	R2	R1	R2
						CFU/ plate 1	CFU/ plate 2	CFU/ plate 1	CFU/ plate 2	Result	Result	Dil.	CFU	CFU	Result	Result	Dil.	CFU	CFU	Result	Result	Dil.	CFU	CFU	Result	Result	Dil.	CFU	CFU	Result	Result
RS	1714592	Marinated anchovies	Yes	b	-1	14				140		-1	13		130		-1	15		140		-1	12		120		-1	13		120	
					-2	1						-2	1				-2	0				-2	1				-2	0			
RS	1714593	Smoked herring	Yes	b	-1	13				130		-1	12		120		-1	16		150		-1	11		100		-1	15		140	
					-2	1						-2	1				-2	0				-2	0				-2	0			
RS	1714595	Sardine	Yes	a	-1	12				110		-1	9		80		-1	13		130		-1	12		120		-1	10		90	
					-2	0						-2	0				-2	1				-2	1				-2	0			
RS	1714596	Cod	Yes	a	-1	17				160		-1	13		130		-1	18		170		-1	15		140		-1	18		170	
					-2	1						-2	1				-2	1				-2	0				-2	1			
RS	1714599	Smoked herring with pepper	Yes	b	-1	17				170		-1	10		100		-1	13		130		-1	10		100		-1	13		120	
					-2	2						-2	1				-2	1				-2	1				-2	0			
RS	1729341	Whiting fillet	Yes	a	-2	56				5500		-2	32		3400		-2	43		4200		-2	41		4100		-2	63		6400	
					-3	4						-3	5				-3	3				-3	4				-3	7			

Vegetal products

Study	Sample code	Sample name	AC	Type	Dil.	EN ISO 16649-2 (■ for the renewal study)						REBECCA										REBECCA+EB									
												Surface spreading					Pour plate					Surface spreading					Pour plate				
						R1		R2		R1	R2																				
						CFU/ plate 1	CFU/ plate 2	CFU/ plate 1	CFU/ plate 2	Result	Result	Dil.	R1 CFU	R2 CFU	R1 Result	R2 Result	Dil.	R1 CFU	R2 CFU	R1 Result	R2 Result	Dil.	R1 CFU	R2 CFU	R1 Result	R2 Result	Dil.	R1 CFU	R2 CFU	R1 Result	R2 Result
IVS	Q 2237	Recycled dough offcuts	No	b	-3	44	39	43	47	41000	45000	-3	56	62	55000	61000	-3	62	60	61000	59000	-3	50	48	49000	47000	-3	48	57	46000	54000
					-4	4	4	6	3			-4	5	5			-4	5	5			-4	4	4			-4	3	2		
IVS	S 9937	Mixed salad	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	S9941	Vegetarian salad	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	VI 313	Vegetables tajine	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	VI 279	Cucumbers with sauce	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	VR 4497	Potatoes salad	No	c	-1	71	73	82	65	700	770	-2	13	12	1400	1200	-1	96	97	950	960	-2	12	14	1200	1400	-1	81	116	820	1200
					-2	7	3	9	13			-3	2	3			-2	8	9			-3	1	0			-2	9	15		
IVS	VI 413	Leaf tea	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	DJ 3361	Rice and tomatoes salad	No	c	-1	2	3	2	5	25	35	-1	6	4	60	40	-1	5	7	50	70	-1	4	4	40	40	-1	3	4	30	40
					-2	0	0	0	0			-2	0	0			-2	1	1			-2	0	0			-2	0	0		
IVS	MV 2163	Tomatoes and mozzarella salad	No	c	-1	11	9	14	11	90	125	-1	8	6	80	60	-1	9	9	90	90	-1	5	7	50	70	-1	6	10	60	100
					-2	0	0	0	0			-2	0	0			-2	0	4			-2	0	0			-2	1	2		
IVS	DJ 3510	Tomatoes and corn salad	No	c	-1	3	4	2	1	35	15	-1	2	5	20	50	-1	1	5	10	50	-1	2	5	20	50	-1	1	4	10	40
					-2	0	0	0	0			-2	0	0			-2	0	0			-2	0	0			-2	0	0		
IVS	HA 4680	Raisin bread	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	VI 844	Fresh noodles	No	c	-1	35	27	48	30	320	380	-1	36	43	350	430	-1	45	61	460	580	-1	38	41	360	400	-1	48	42	480	430
					-2	4	4	4	2			-2	3	4			-2	6	3			-2	2	3			-2	5	5		
IVS	DJ 3849	Crunchy salad	No	b	-1	8	7	4	7	75	55	-1	6	5	60	50	-1	3	3	30	30	-1	4	6	40	60	-1	6	6	60	60
					-2	1	1	0	0			-2	0	0			-2	0	0			-2	0	0			-2	1	0		
IVS	MV 2552	Tomato dices	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RD 1460	Vegetables mix	No	c	-3	35	43	43	50	39000	47000	-3	32	30	34000	31000	-3	50	45	48000	45000	-3	30	28	28000	26000	-3	39	64	39000	65000
					-4	3	5	4	6			-4	5	4			-4	3	4			-4	1	1			-4	4	7		
IVS	R 37062	Celery raisin salad	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RD 1461	Fruit salad	No	c	-4	56	49	58	68	510000	63000	-4	42	56	410000	58000	-4	77	51	750000	52000	-4	43	50	400000	51000	-4	76	42	720000	43000
					-5	3	4	6	6			-5	3	8			-5	5	6			-5	1	6			-5	3	5		
IVS	RD 1462	Mélange de crudités	No	b	-2	79	62	67	60	7200	6200	-2	101	106	9700	10000	-2	99	91	9600	9100	-2	63	75	5900	7600	-2	61	58	6100	5600
					-3	10	7	5	4			-3	6	9			-3	7	9			-3	2	9			-3	6	4		
RS	1692037	Raw onions	No	a	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692038	Green bell peppers	No	b	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1691985	Mint	No	a	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1691986	Dill	No	a	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692002	Country-style pan	No	b	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			

Vegetal products

Study	Sample code	Sample name	AC	Type	EN ISO 16649-2 (■ for the renewal study)						REBECCA										REBECCA+EB									
											Surface spreading					Pour plate					Surface spreading					Pour plate				
					Dil.	R1		R2		R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2
						CFU/ plate 1	CFU/ plate 2	CFU/ plate 1	CFU/ plate 2	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result
RS	1692023	Chives	No	a	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692043	Mung beans	No	a	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692034	Lettuce mix	No	b	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692039	Raw carots	No	a	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692004	Vegetables pan	No	b	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692041	Raw shallots	No	a	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692042	Raw leeks	No	a	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1698416	Non-seasoned grated carots	Yes	b	-1	20				210		-1	18		180		-1	25		250		-1	22		250		-1	20		210	
					-2	3						-2	2				-2	2				-2	5				-2	3			
RS	1698417	Fresh mint	Yes	a	-1	21				220		-1	24		240		-1	23		250		-1	25		250		-1	22		220	
					-2	3						-2	2				-2	5				-2	2				-2	2			
RS	1698418	Slices of leeks	Yes	a	-1	11				110		-1	9		90		-1	10		100		-1	15		150		-1	6		60	
					-2	1						-2	1				-2	1				-2	1				-2	0			
RS	1698419	Chives	Yes	a	-1	14				150		-1	17		160		-1	13		130		-1	8		80		-1	8		80	
					-2	3						-2	1				-2	1				-2	1				-2	1			
RS	1698420	Basil	Yes	a	-1	10				100		-1	9		100		-1	10		110		-1	24		230		-1	19		180	
					-2	1						-2	2				-2	2				-2	1				-2	1			
RS	1698421	Lettuce mix	Yes	b	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1698422	Mung beans	Yes	a	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1726645	Fresh fruit mix	No	b	-1	18				180		-1	15		150		-1	16		150		-1	11		110		-1	13		150	
					-2	2						-2	2				-2	1				-2	1				-2	3			
RS	1729344	Lamb's lettuce and beetroot mix	Yes	b	-2	32				3100		-2	46		4900		-2	35		3500		-2	56		5600		-2	37		3600	
					-3	2						-3	8				-3	3				-3	6				-3	3			
RS	1729345	Cauliflower, broccoli, romanesco cabbage mix	Yes	a	-3	91				91000		-3	123		120000		-3	106		100000		-3	145		140000		-3	129		130000	
					-4	9						-4	10				-4	9				-4	14				-4	11			

Feed products

Study	Sample code	Sample name	AC	Type	Dil.	EN ISO 16649-2 (■ for the renewal study)						REBECCA										REBECCA+EB									
												Surface spreading						Pour plate						Surface spreading						Pour plate			
						R1		R2		R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2	Dil.	R1	R2	R1	R2
						CFU/ plate 1	CFU/ plate 2	CFU/ plate 1	CFU/ plate 2	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result		CFU	CFU	Result	Result
IVS	RD1410	Meat for animal feeding	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RD1411	Meat for animal feeding	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RD1412	Meat for animal feeding	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RD1413	Meat for animal feeding	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RD1414	Bone meal	No	c	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RD1415	Wet cat food	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RD1416	Wet cat food	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RD1417	Wet cat food	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RD1418	Wet cat food	No	a	-1	0	0	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10	-2	0	0	<100	<100	-1	0	0	<10	<10
					-2	0	0	0	0			-3	0	0			-2	0	0			-3	0	0			-2	0	0		
IVS	RD 1427	Bone meal	I72	c	-1	6	5	4	2	55	30	-1	3	3	30	30	-1	4	5	40	50	-1	3	2	30	20	-1	7	6	70	60
					-2	0	0	0	0			-2	0	0			-2	0	0			-2	0	0			-2	0	0		
IVS	RD 1428	Farine animale	I72	c	-1	26	22	27	23	250	250	-1	20	26	190	330	-1	25	27	270	320	-1	30	26	290	245	-1	59	42	570	420
					-2	5	3	2	3			-2	1	0			-2	5	6			-2	2	1			-2	4	4		
IVS	RD 1429	Bone meal	I72	c	-2	17	30	20	25	2400	2100	-2	8	9	910	900	-2	21	33	2200	3200	-2	11	6	1100	600	-2	19	24	1700	2400
					-3	1	4	1	1			-3	2	2			-3	3	2			-3	1	2			-3	0	2		
IVS	RD 1430	Bone meal	I58	c	-3	23	28	29	25	26000	28000	-3	26	15	27000	15000	-3	29	38	29000	35000	-3	20	18	18000	17000	-3	25	41	24000	38000
					-4	5	2	6	2			-4	4	1			-4	3	0			-4	0	1			-4	1	1		
IVS	RD 1431	Bone meal	I58	c	-4	42	35	33	36	380000	330000	-4	20	29	190000	260000	-4	47	43	510000	460000	-4	20	23	200000	250000	-4	42	55	470000	550000
					-5	3	3	2	2			-5	1	0			-5	9	8			-5	2	5			-5	10	5		
IVS	RD 1432	Wet dog food	I79	a	-1	46	52	48	60	480	523	-1	50	47	500	445	-1	48	63	510	610	-1	49	58	460	580	-1	45	54	470	530
					-2	4	3	0	7			-2	5	2			-2	8	4			-2	2	6			-2	7	4		
IVS	RD 1433	Wet dog food	I79	a	-1	125	140	131	129	1300	1300	-1	96	90	990	910	-1	94	98	950	990	-1	105	139	1100	1340	-1	140	125	1400	1240
					-2	12	9	11	16			-2	13	10			-2	10	11			-2	14	9			-2	12	11		
IVS	RD 1434	Wet cat food	I79	a	-5	30	25	16	28	2600000	2300000	-5	26	35	2500000	3200000	-5	13	21	1400000	2200000	-5	15	26	1400000	2700000	-5	38	30	3500000	2700000
					-6	0	2	4	2			-6	1	0			-6	2	3			-6	0	4			-6	1	0		
IVS	RD 1435	Wet cat food	I63	a	-2	108	124	90	103	12000	9600	-2	80	94	7700	9100	-2	82	99	8200	9900	-2	114	89	12000	9300	-2	95	139	9100	13800
					-3	15	12	8	10			-3	5	7			-3	8	10			-3	15	13			-3	5	13		
IVS	RD 1436	Kibbles	I63	a	-3	136	140	132	129	130000	130000	-3	121	115	120000	120000	-3	136	147	130000	140000	-3	137	142	130000	140000	-3	153	134	150000	140000
					-4	5	10	13	14			-4	13	14			-4	10	9			-4	10	16			-4	16	20		
RS	1691987	Oat pellets	No	b	-1	0				<10		-1	0		<10		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1691988	Rapeseed oilcake	No	b	-1	3				30		-1	3		30		-1	3		30		-1	1		10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1692066	Meat for animal feeding	Yes	c	-1	5				50		-1	4		40		-1	0		<10		-1	0		<10		-1	0		<10	
					-2	0						-2	0				-2	0				-2	0				-2	0			
RS	1714601	Oat pellets	Yes	b	-1	8				80		-1	6		60		-1	7		70		-1	5		50		-1	6		60	
					-2	0						-2	0				-2	0				-2	0				-2	0			

Feed products

Study	Sample code	Sample name	AC	Type	Dil.	EN ISO 16649-2 (■ for the renewal study)						REBECCA										REBECCA+EB									
												Surface spreading					Pour plate					Surface spreading					Pour plate				
						R1		R2		R1	R2		R1	R2	R1	R2		R1	R2	R1	R2		R1	R2	R1	R2		R1	R2	R1	R2
						CFU/ plate 1	CFU/ plate 2	CFU/ plate 1	CFU/ plate 2	Result	Result	Dil.	CFU	CFU	Result	Result	Dil.	CFU	CFU	Result	Result	Dil.	CFU	CFU	Result	Result	Dil.	CFU	CFU	Result	Result
RS	1714602	Piglet feed	Yes	b	-1	12				120		-1	10		100		-1	8		80		-1	7		70		-1	9		90	
					-2	1						-2	1				-2	0				-2	0				-2	0			
RS	1714603	Pork feed	Yes	b	-1	16				150		-1	12		110		-1	11		110		-1	12		110		-1	17		170	
					-2	1						-2	0				-2	1				-2	0				-2	2			
RS	1714604	Soy	Yes	b	-1	18				180		-1	9		90		-1	10		100		-1	14		140		-1	13		130	
					-2	2						-2	0				-2	1				-2	1				-2	1			
RS	1726644	Poultry scallop offcuts for animal feeding	No	c	-1	10				100		-1	9		90		-1	7		70		-1	11		110		-1	13		150	
					-2	1						-2	1				-2	0				-2	1				-2	3			
RS	1729342	Feed for laying hen	Yes	b	-2	81				8300		-2	70		7200		-2	90		9000		-2	101		10000		-2	108		11000	
					-3	10						-3	9				-3	9				-3	9				-3	11			

Ready-to-eat and ready-to-reheat products

Study	Sample code	Sample name	AC	Type	Dil.	EN ISO 16649-2(■)		REBECCA						REBECCA+EB					
						R1	R1	Surface spreading			Pour plate			Surface spreading			Pour plate		
						CFU	Result	Dil.	CFU	Result	Dil.	CFU	Result	Dil.	CFU	Result	Dil.	CFU	Result
Renewal study	1692050	Charcutière salad	Yes	a	-1	1	10	-1	0	<10	-1	0	<10	-1	0	<10	-1	1	10
					-2	0		-2	0		-2	0		-2	0		-2	0	
	1692053	Nordic-style salade	Yes	a	-1	11	110	-1	4	40	-1	10	120	-1	8	80	-1	5	50
					-2	1		-2	1		-2	3		-2	0		-2	0	
	1698402	Pâté	Yes	a	-1	11	110	-1	15	160	-1	10	100	-1	10	100	-1	16	150
					-2	1		-2	3		-2	1		-2	1		-2	1	
	1692045	Quiche lorraine	No	b	-1	0	<10	-1	0	<10	-1	0	<10	-1	0	<10	-1	0	<10
					-2	0		-2	0		-2	0		-2	0		-2	0	
	1698403	Chicken sandwich	Yes	a	-1	44	450	-1	46	480	-1	48	510	-1	51	490	-1	45	480
					-2	5		-2	7		-2	8		-2	3		-2	8	
	1698404	Country-style galette	Yes	b	-1	99	1000	-1	92	980	-1	129	1300	-1	96	950	-1	84	880
					-2	11		-2	16		-2	13		-2	9		-2	13	
	1698405	Bouchée à la reine	Yes	b	-2	56	5500	-2	53	5200	-2	53	5100	-2	48	4900	-2	55	5500
					-3	5		-3	4		-3	3		-3	6		-3	6	
	1692052	Tomatoes with meat stuffing	Yes	b	-1	5	50	-1	4	40	-1	1	10	-1	1	10	-1	0	<10
					-2	1		-2	1		-2	0		-2	0		-2	0	
	1698406	Veal paupiette	Yes	b	-2	114	12000	-2	88	9100	-2	88	8800	-2	54	5300	-2	75	7500
					-3	16		-3	12		-3	9		-3	4		-3	8	
	1698410	Chocolate éclair	Yes	a	-1	20	220	-1	15	150	-1	18	170	-1	14	140	-1	17	180
					-2	4		-2	2		-2	1		-2	1		-2	3	
	1698413	Lasagna	Yes	b	-1	7	70	-1	17	170	-1	17	150	-1	18	170	-1	16	150
					-2	2		-2	2		-2	0		-2	1		-2	0	
	1698414	Tomatoes with meat stuffing	Yes	b	-1	19	190	-1	24	250	-1	24	250	-1	29	280	-1	36	350
					-2	2		-2	3		-2	3		-2	2		-2	3	
	1714588	Saithe rillettes	Yes	a	-1	12	120	-1	10	100	-1	13	130	-1	10	100	-1	11	110
					-2	1		-2	1		-2	1		-2	1		-2	1	
	1714589	Cold fish meal	Yes	a	-1	10	100	-1	11	110	-1	9	90	-1	8	80	-1	9	90
					-2	1		-2	1		-2	0		-2	0		-2	0	
	1714590	Marinated salmon	Yes	c	-1	11	110	-1	9	90	-1	10	100	-1	8	80	-1	12	120
					-2	1		-2	0		-2	1		-2	0		-2	1	
	1714594	Smoked herring with pepper	Yes	c	-1	15	150	-1	8	80	-1	9	90	-1	9	90	-1	10	100
					-2	1		-2	0		-2	0		-2	0		-2	1	
	1714597	Smoked salmon	Yes	c	-1	8	80	-1	6	60	-1	7	70	-1	7	70	-1	10	90
					-2	0		-2	0		-2	0		-2	0		-2	0	
	1714598	Hareng fumé	Yes	c	-1	11	100	-1	7	70	-1	9	90	-1	9	90	-1	13	130
					-2	0		-2	0		-2	0		-2	0		-2	1	
	1714600	Smoked herring	Yes	c	-1	13	130	-1	10	90	-1	10	100	-1	10	100	-1	9	90
					-2	1		-2	0		-2	1		-2	1		-2	0	

APPENDIX E

Relative trueness study

Statistical calculations

Results summary and statistical calculations

Surface spreading for REBECCA base

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Meat products	a	RG 3028	2,38	2,60	2,49	0,22
		VI 320	2,56	2,90	2,73	0,35
		1691982	3,43	3,53	3,48	0,10
		1691981	3,26	3,18	3,22	-0,08
		1691980	3,11	3,15	3,13	0,03
		1692012	4,94	4,81	4,88	-0,13
		1729340	1,85	1,78	1,81	-0,07
	b	VI 717	4,11	4,04	4,08	-0,07
		1698415	2,00	2,18	2,09	0,18
		1698407	4,56	4,62	4,59	0,07
		1698412	1,95	2,20	2,08	0,25
		1729339	2,26	2,11	2,18	-0,14
	c	HA 4187	2,49	2,60	2,55	0,11
		Q 2272	3,41	3,48	3,45	0,06
		VR 4755	3,95	4,08	4,02	0,12
		1692019	3,15	3,11	3,13	-0,03
		1726643	2,63	2,53	2,58	-0,10
Average difference of the category						**0,05**
Standard deviation of differences						**0,14**
Dairy & egg products	a	MV 2444	2,76	2,70	2,73	-0,06
		R 36889	6,85	6,95	6,90	0,11
		1691977	3,04	2,86	2,95	-0,18
		1692014	2,96	2,86	2,91	-0,10
		1698408	1,95	1,78	1,87	-0,18
		1698409	2,18	1,95	2,07	-0,22
	b	R 36162	4,28	4,23	4,25	-0,05
		R 36786	6,04	5,85	5,94	-0,20
		R 37297	4,61	4,79	4,70	0,17
		RD 1376	2,80	2,96	2,88	0,16
		RD 1368	3,89	3,93	3,91	0,04
		RD 1382	3,00	2,95	2,98	-0,05
		W 14564	2,60	2,36	2,48	-0,24
		R 36986	3,20	3,18	3,19	-0,03
		1691976	4,49	4,43	4,46	-0,06
		1692010	3,11	2,78	2,95	-0,34
		1692016	2,08	2,08	2,08	0,00
	c	1691975	3,45	3,45	3,45	0,00
		1698411	2,54	2,51	2,52	-0,04
		1726640	2,15	2,08	2,11	-0,07
		1726641	5,15	5,08	5,11	-0,07
		1726642	2,18	2,08	2,13	-0,10
Average difference						**-0,07**
Standard deviation of differences						**0,13**

Results summary and statistical calculations

Surface spreading for REBECCA base

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Seafood products	a	C 85	2,89	2,70	2,80	-0,19
		CI 141	2,59	2,18	2,38	-0,41
		1714595	2,04	1,90	1,97	-0,14
		1714596	2,20	2,11	2,16	-0,09
		1729341	3,74	3,53	3,64	-0,21
	b	HA 5284	2,74	2,85	2,79	0,10
		1714591	1,95	2,00	1,98	0,05
		1714592	2,15	2,11	2,13	-0,03
		1714593	2,11	2,08	2,10	-0,03
		1714599	2,23	2,00	2,12	-0,23
	c	Q 2271	4,60	4,54	4,57	-0,06
		DJ 3253	4,18	4,18	4,18	0,00
		VR 5037	3,69	3,54	3,62	-0,15
		DJ 3789	5,99	6,11	6,05	0,12
		MV 2921	2,28	2,65	2,47	0,37
		Q 2235	2,18	2,30	2,24	0,12
Average difference						**-0,05**
Standard deviation of differences						**0,18**
Vegetal products	a	1698417	2,34	2,38	2,36	0,04
		1698418	2,04	1,95	2,00	-0,09
		1698419	2,18	2,20	2,19	0,03
		1698420	2,00	2,00	2,00	0,00
		1729345	4,96	5,08	5,02	0,12
	b	DJ 3849	1,88	1,78	1,83	-0,10
		RD 1462	3,86	3,99	3,92	0,13
		1698416	2,32	2,26	2,29	-0,07
		1726645	2,26	2,18	2,22	-0,08
		Q 2237	4,61	4,74	4,68	0,13
		1729344	3,49	3,69	3,59	0,20
	c	VR 4497	2,85	3,15	3,00	0,30
		MV 2163	1,95	1,90	1,93	-0,05
		VI 844	2,51	2,54	2,52	0,04
		RD 1460	4,59	4,53	4,56	-0,06
		RD 1461	5,71	5,61	5,66	-0,09
Average difference						**0,03**
Standard deviation of differences						**0,12**

Results summary and statistical calculations

Surface spreading for REBECCA base

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Feed products	a	RD 1432	2,68	2,70	2,69	0,02
		RD 1433	3,11	3,00	3,05	-0,12
		RD 1434	6,41	6,40	6,41	-0,02
		RD 1435	4,08	3,89	3,98	-0,19
		RD 1436	5,11	5,08	5,10	-0,03
	b	1714601	1,90	1,78	1,84	-0,12
		1714602	2,08	2,00	2,04	-0,08
		1714603	2,18	2,04	2,11	-0,13
		1714604	2,26	1,95	2,10	-0,30
		1729342	3,92	3,86	3,89	-0,06
	c	RD 1428	2,40	2,28	2,34	-0,12
		RD 1429	3,38	2,96	3,17	-0,42
		RD 1430	4,41	4,43	4,42	0,02
		RD 1431	5,58	5,28	5,43	-0,30
		1692066	1,70	1,60	1,65	-0,10
		1726644	2,00	1,95	1,98	-0,05
Average difference						**-0,13**
Standard deviation of differences						**0,12**
Ready-to-eat & ready-to-reheat products	a	1692053	2,04	1,60	1,82	-0,44
		1698402	2,04	2,20	2,12	0,16
		1698403	2,65	2,68	2,67	0,03
		1698410	2,34	2,18	2,26	-0,17
		1714588	2,08	2,00	2,04	-0,08
		1714589	2,00	2,04	2,02	0,04
	b	1698404	3,00	2,99	3,00	-0,01
		1698405	3,74	3,72	3,73	-0,02
		1692052	1,70	1,60	1,65	-0,10
		1698406	4,08	3,96	4,02	-0,12
		1698413	1,85	2,23	2,04	0,39
		1698414	2,28	2,40	2,34	0,12
	c	1714590	2,04	1,95	2,00	-0,09
		1714594	2,18	1,90	2,04	-0,27
		1714597	1,90	1,78	1,84	-0,12
		1714598	2,00	1,85	1,92	-0,15
		1714600	2,11	1,95	2,03	-0,16
Average difference						**-0,06**
Standard deviation of differences						**0,18**

Results summary and statistical calculations

Surface spreading for REBECCA base

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Average difference all categories						-0,04
Standard deviation of differences						0,16

n =	104
β =	95%
T (0.025;97)=	1,98

Lower confidence limit	Upper confidence limit
-0,35	0,27

Data not used for the calculations

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
MP	DJ 3712	a	2,40	2,30	2,35	-0,10
	VR 4754	b	1,48	1,48	1,48	0,00
	VR 5152	b	1,78	2,00	1,89	0,22
	1692051	b	1,30	1,60	1,45	0,30
	MV 1916	c	1,40	1,48	1,44	0,08
	1692065	c	0,00	1,60	0,80	1,60
DP	1692054	a	1,30	1,70	1,50	0,40
	1692055	a	1,48	1,30	1,39	-0,18
	RD 1375	b	1,18	1,00	1,09	-0,18
	1692008	b	1,00	1,00	1,00	0,00
SP	MV 2234	c	1,54	1,48	1,51	-0,07
	1691995	a	0,00	1,00	0,50	1,00
VP	DJ 3361	c	1,40	1,78	1,59	0,38
	DJ 3510	c	1,54	1,30	1,42	-0,24
FP	1691988	b	1,48	1,48	1,48	0,00
	RD 1427	c	1,74	1,48	1,61	-0,26
RTE	1692050	a	1,00	0,00	0,50	-1,00

Results summary and statistical calculations

Pour plates for REBECCA base

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Meat products	a	RG 3028	2,38	2,49	2,44	0,11
		DJ 3712	2,40	2,63	2,52	0,24
		1691982	3,43	3,52	3,47	0,09
		1691981	3,26	3,20	3,23	-0,05
		1691980	3,11	3,04	3,08	-0,07
		1692012	4,94	4,81	4,88	-0,13
		1729340	1,85	1,90	1,87	0,06
	b	VI 320	2,56	2,45	2,50	-0,11
		VI 717	4,11	4,04	4,08	-0,07
		VR 5152	1,78	2,18	1,98	0,40
		1698415	2,00	2,34	2,17	0,34
		1698407	4,56	4,58	4,57	0,02
		1698412	1,95	2,23	2,09	0,28
		1729339	2,26	2,18	2,22	-0,08
	c	HA 4187	2,49	2,62	2,56	0,13
		Q 2272	3,41	3,51	3,46	0,09
		VR 4755	3,95	4,20	4,08	0,25
		1692019	3,15	3,08	3,11	-0,07
		1726643	2,63	2,51	2,57	-0,13
Average difference of the category						**0,07**
Standard deviation of differences						**0,17**
Dairy & egg products	a	MV 2444	2,76	2,74	2,75	-0,02
		1691977	3,04	2,77	2,91	-0,27
		1692014	2,96	2,98	2,97	0,02
		1698408	1,95	1,85	1,90	-0,11
		1698409	2,18	2,08	2,13	-0,10
	b	R 36162	4,28	4,32	4,30	0,04
		R 36786	6,04	6,15	6,09	0,10
		R 36889	6,85	6,96	6,90	0,11
		R 37297	4,61	4,71	4,66	0,09
		RD 1376	2,80	2,85	2,83	0,05
		RD 1368	3,89	3,86	3,87	-0,03
		RD 1382	3,00	3,00	3,00	0,00
		W 14564	2,60	2,63	2,62	0,03
		R 36986	3,20	3,15	3,18	-0,06
		1691976	4,49	4,38	4,44	-0,11
		1692010	3,11	3,00	3,06	-0,11
		1692016	2,08	2,08	2,08	0,00
	c	1691975	3,45	3,43	3,44	-0,02
		1698411	2,54	2,53	2,54	-0,01
		1726640	2,15	2,18	2,16	0,03
		1726641	5,15	5,11	5,13	-0,03
		1726642	2,18	2,43	2,30	0,26
Average difference						**-0,01**
Standard deviation of differences						**0,10**

Results summary and statistical calculations

Pour plates for REBECCA base

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Seafood products	a	C 85	2,89	2,82	2,86	-0,07
		CI 141	2,59	2,34	2,47	-0,25
		1714595	2,04	2,11	2,08	0,07
		1714596	2,20	2,23	2,22	0,03
		1729341	3,74	3,62	3,68	-0,12
	b	HA 5284	2,74	2,70	2,72	-0,04
		1714591	1,95	1,95	1,95	0,00
		1714592	2,15	2,15	2,15	0,00
		1714593	2,11	2,18	2,15	0,06
		1714599	2,23	2,11	2,17	-0,12
	c	Q 2271	4,60	4,57	4,59	-0,03
		MV 2234	1,54	1,78	1,66	0,23
		DJ 3253	4,18	4,11	4,15	-0,06
		VR 5037	3,69	3,75	3,72	0,06
		DJ 3789	5,99	6,00	6,00	0,01
		MV 2921	2,28	2,61	2,45	0,33
		Q 2235	2,18	2,45	2,31	0,27
Average difference						**0,02**
Standard deviation of differences						**0,15**
Vegetal products	a	1698417	2,34	2,40	2,37	0,06
		1698418	2,04	2,00	2,02	-0,04
		1698419	2,18	2,11	2,15	-0,06
		1698420	2,00	2,04	2,02	0,04
		1729345	4,96	5,00	4,98	0,04
	b	Q 2237	4,61	4,79	4,70	0,17
		RD 1462	3,86	3,98	3,92	0,12
		1698416	2,32	2,40	2,36	0,08
		1726645	2,26	2,18	2,22	-0,08
		1729344	3,49	3,54	3,52	0,05
	c	VR 4497	2,85	2,98	2,91	0,13
		MV 2163	1,95	1,95	1,95	0,00
		VI 844	2,51	2,66	2,58	0,16
		RD 1460	4,59	4,68	4,64	0,09
		RD 1461	5,71	5,88	5,79	0,17
Average difference						**0,06**
Standard deviation of differences						**0,08**

Results summary and statistical calculations

Pour plates for REBECCA base

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Feed products	a	RD 1432	2,68	2,71	2,69	0,03
		RD 1433	3,11	2,98	3,05	-0,14
		RD 1434	6,41	6,15	6,28	-0,27
		RD 1435	4,08	3,91	4,00	-0,17
		RD 1436	5,11	5,11	5,11	0,00
	b	1714601	1,90	1,85	1,87	-0,06
		1714602	2,08	1,90	1,99	-0,18
		1714603	2,18	2,04	2,11	-0,13
		1714604	2,26	2,00	2,13	-0,26
		1729342	3,92	3,95	3,94	0,04
	c	RD 1427	1,74	1,60	1,67	-0,14
		RD 1428	2,40	2,43	2,41	0,03
		RD 1429	3,38	3,34	3,36	-0,04
		RD 1430	4,41	4,46	4,44	0,05
		RD 1431	5,58	5,71	5,64	0,13
		1726644	2,00	1,85	1,92	-0,15
Average difference						**-0,08**
Standard deviation of differences						**0,12**
Ready-to-eat & ready-to-reheat products	a	1692053	2,04	2,08	2,06	0,04
		1698402	2,04	2,00	2,02	-0,04
		1698403	2,65	2,71	2,68	0,05
		1698410	2,34	2,23	2,29	-0,11
		1714588	2,08	2,11	2,10	0,03
		1714589	2,00	1,95	1,98	-0,05
	b	1698404	3,00	3,11	3,06	0,11
		1698405	3,74	3,71	3,72	-0,03
		1698406	4,08	3,94	4,01	-0,13
		1698413	1,85	2,18	2,01	0,33
		1698414	2,28	2,40	2,34	0,12
	c	1714590	2,04	2,00	2,02	-0,04
		1714594	2,18	1,95	2,07	-0,22
		1714597	1,90	1,85	1,87	-0,06
		1714598	2,00	1,95	1,98	-0,05
		1714600	2,11	2,00	2,06	-0,11
Average difference						**-0,01**
Standard deviation of differences						**0,13**

Results summary and statistical calculations

Pour plates for REBECCA base

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Average difference all categories						0,01
Standard deviation of differences						0,13

n =	105
β =	95%
T (0.025;97)=	1,98

Lower confidence limit	Upper confidence limit
-0,26	0,28

Data not used for the calculations

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
MP	VR 4754	a	1,48	1,78	1,63	0,30
	1692051	b	1,30	1,00	1,15	-0,30
	MV 1916	c	1,40	1,85	1,62	0,45
	1692065	c	0,00	1,00	0,50	1,00
DP	1692054	a	1,30	1,95	1,63	0,65
	1692055	a	1,48	1,85	1,66	0,37
	RD 1375	b	1,18	1,00	1,09	-0,18
	1692008	b	1,00	1,00	1,00	0,00
	1691989	b	0,00	1,00	0,50	1,00
SP	1691999	a	0,00	1,00	0,50	1,00
VP	DJ 3849	b	1,88	1,48	1,68	-0,40
	DJ 3361	c	1,40	1,70	1,55	0,30
	DJ 3510	c	1,54	1,00	1,27	-0,54
FP	1691988	b	1,48	1,48	1,48	0,00
	1692066	c	1,70	0,00	0,85	-1,70
RTE	1692052	b	1,70	1,00	1,35	-0,70
	1692050	a	1,00	0,00	0,50	-1,00

Results summary and statistical calculations

Surface spreading for REBECCA+EB

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Meat products	a	1691982	3,43	3,40	3,41	-0,03
		1691981	3,26	3,36	3,31	0,11
		1691980	3,11	3,26	3,18	0,14
		1692012	4,94	4,18	4,56	-0,77
		1729340	1,85	1,90	1,87	0,06
	b	VI 320	2,56	2,70	2,63	0,14
		VI 717	4,11	4,11	4,11	0,00
		1698415	2,00	2,15	2,07	0,15
		1698407	4,56	4,32	4,44	-0,23
		1698412	1,95	2,26	2,10	0,30
		1729339	2,08	2,11	2,10	0,03
	c	HA 4187	2,49	2,78	2,63	0,29
		Q 2272	3,41	3,46	3,44	0,05
		VR 4755	3,95	3,90	3,93	-0,05
		1692019	3,15	3,20	3,18	0,06
		1726643	2,63	2,52	2,58	-0,11
Average difference of the category						**0,01**
Standard deviation of differences						**0,25**
Dairy & egg products	a	MV 2444	2,76	2,67	2,71	-0,08
		1691977	3,04	2,65	2,85	-0,39
		1692014	2,96	2,88	2,92	-0,08
		1698408	1,95	2,23	2,09	0,28
		1698409	2,18	1,90	2,04	-0,27
	b	R 36162	4,28	4,18	4,23	-0,10
		R 36786	6,04	5,70	5,87	-0,34
		R 37297	4,61	4,67	4,64	0,06
		RD 1376	2,80	2,60	2,70	-0,20
		RD 1368	3,89	3,93	3,91	0,05
		RD 1382	3,00	3,00	3,00	0,00
		W 14564	2,60	2,46	2,53	-0,14
		R 36986	3,20	2,95	3,08	-0,25
		1691976	4,49	4,61	4,55	0,12
		1692010	3,11	2,90	3,01	-0,22
		1692016	2,08	1,85	1,96	-0,23
	c	1691975	3,45	3,48	3,46	0,03
		1698411	2,54	2,40	2,47	-0,15
		1726640	2,15	2,20	2,18	0,06
		1726641	5,15	5,08	5,11	-0,07
		1726642	2,18	2,28	2,23	0,10
Average difference						**-0,09**
Standard deviation of differences						**0,17**

Results summary and statistical calculations

Surface spreading for REBECCA+EB

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Seafood products	a	C 85	2,89	2,95	2,92	0,06
		CI 141	2,59	2,26	2,42	-0,34
		1714595	2,04	2,08	2,06	0,04
		1714596	2,20	2,15	2,18	-0,06
		1729341	3,74	3,61	3,68	-0,13
	b	HA 5284	2,74	2,60	2,67	-0,14
		1714591	1,95	1,95	1,95	0,00
		1714592	2,15	2,08	2,11	-0,07
		1714593	2,11	2,00	2,06	-0,11
		1714599	2,23	2,00	2,12	-0,23
	c	Q 2271	4,60	4,54	4,57	-0,06
		DJ 3253	4,18	4,11	4,15	-0,06
		VR 5037	3,69	3,64	3,67	-0,05
		DJ 3789	5,99	6,15	6,07	0,15
		MV 2921	2,28	2,63	2,46	0,35
		Q 2235	2,18	2,54	2,36	0,37
Average difference						**-0,02**
Standard deviation of differences						**0,19**
Vegetal products	a	1698417	2,34	2,40	2,37	0,06
		1698418	2,04	2,18	2,11	0,13
		1698419	2,18	1,90	2,04	-0,27
		1698420	2,00	2,36	2,18	0,36
		1729345	4,96	5,15	5,05	0,19
	b	Q 2237	4,61	4,69	4,65	0,08
		DJ 3849	1,88	1,60	1,74	-0,27
		RD 1462	3,86	3,77	3,81	-0,09
		1698416	2,32	2,40	2,36	0,08
		1726645	2,26	2,04	2,15	-0,21
		1729344	3,49	3,75	3,62	0,26
	c	VR 4497	2,85	3,08	2,96	0,23
		MV 2163	1,95	1,70	1,83	-0,26
		VI 844	2,51	2,56	2,53	0,05
		RD 1460	4,59	4,45	4,52	-0,14
		RD 1461	5,71	5,60	5,65	-0,11
Average difference						**0,01**
Standard deviation of differences						**0,20**

Results summary and statistical calculations

Surface spreading for REBECCA+EB

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Feed products	a	RD 1432	2,68	2,66	2,67	-0,02
		RD 1433	3,11	3,04	3,08	-0,07
		RD 1434	6,41	6,15	6,28	-0,27
		RD 1435	4,08	4,08	4,08	0,00
		RD 1436	5,11	5,11	5,11	0,00
	b	1714601	1,90	1,70	1,80	-0,20
		1714602	2,08	1,85	1,96	-0,23
		1714603	2,18	2,04	2,11	-0,13
		1714604	2,26	2,15	2,20	-0,11
		1729342	3,92	4,00	3,96	0,08
	c	RD 1428	2,40	2,46	2,43	0,06
		RD 1429	3,38	3,04	3,21	-0,34
		RD 1430	4,41	4,26	4,34	-0,16
		RD 1431	5,58	5,30	5,44	-0,28
		1726644	2,00	2,04	2,02	0,04
Average difference						**-0,11**
Standard deviation of differences						**0,14**
Ready-to-eat & ready-to-reheat products	a	1692053	2,04	1,90	1,97	-0,14
		1698402	2,04	2,00	2,02	-0,04
		1698403	2,65	2,69	2,67	0,04
		1698410	2,34	2,15	2,24	-0,20
		1714588	2,08	2,00	2,04	-0,08
		1714589	2,00	1,90	1,95	-0,10
	b	1698404	3,00	2,98	2,99	-0,02
		1698405	3,74	3,69	3,72	-0,05
		1698406	4,08	3,72	3,90	-0,35
		1698413	1,85	2,23	2,04	0,39
		1698414	2,28	2,45	2,36	0,17
	c	1714590	2,04	1,90	1,97	-0,14
		1714594	2,18	1,95	2,07	-0,22
		1714597	1,90	1,85	1,87	-0,06
		1714598	2,00	1,95	1,98	-0,05
		1714600	2,11	2,00	2,06	-0,11
Average difference						**-0,06**
Standard deviation of differences						**0,17**

Results summary and statistical calculations

Surface spreading for REBECCA+EB

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Average difference all categories						-0,04
Standard deviation of differences						0,19

n =	100
β =	95%
T (0.025;97)=	1,98

Lower confidence limit	Upper confidence limit
-0,42	0,33

Data not used for the calculations

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
MP	RG 3028	a	2,38	2,30	2,34	-0,08
	VR 4754	a	1,48	1,48	1,48	0,00
	DJ 3712	a	2,40	2,30	2,35	-0,10
	VR 5152	b	1,78	2,00	1,89	0,22
	1692051	b	1,30	1,60	1,45	0,30
	MV 1916	c	1,40	1,30	1,35	-0,10
	1692065	c	0,00	1,30	0,65	1,30
DP	1692054	a	1,30	1,00	1,15	-0,30
	1692055	a	1,48	1,00	1,24	-0,48
	R 36889	b	6,85	6,30	6,57	-0,54
	RD 1375	b	1,18	1,00	1,09	-0,18
	1691989	b	0,00	1,00	0,50	1,00
	1692008	b	1,00	0,00	0,50	-1,00
SP	MV 2234	c	1,54	1,48	1,51	-0,07
	1691999	a	0,00	1,00	0,50	1,00
VP	DJ 3361	c	1,40	1,60	1,50	0,20
	DJ 3510	c	1,54	1,30	1,42	-0,24
FP	1691988	b	1,48	1,00	1,24	-0,48
	RD 1427	c	1,74	1,48	1,61	-0,26
	1692066	c	1,70	0,00	0,85	-1,70
RTE	1692052	b	1,70	1,00	1,35	-0,70
	1692050	a	1,00	0,00	0,50	-1,00

Results summary and statistical calculations

Pour plates for REBECCA+EB

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Meat products	a	RG 3028	2,38	2,40	2,39	0,02
		DJ 3712	2,40	2,59	2,49	0,19
		1691982	3,43	3,28	3,36	-0,15
		1691981	3,26	3,11	3,18	-0,14
		1691980	3,11	3,18	3,15	0,06
		1692012	4,94	4,92	4,93	-0,03
		1729340	1,85	1,85	1,85	0,00
	b	VI 320	2,56	2,59	2,57	0,03
		VI 717	4,11	4,15	4,13	0,03
		VR 5152	1,78	2,11	1,95	0,34
		1698415	2,00	2,30	2,15	0,30
		1698407	4,56	4,56	4,56	0,00
		1698412	1,95	2,11	2,03	0,16
		1729339	2,08	2,18	2,13	0,10
	c	HA 4187	2,49	2,69	2,59	0,20
		Q 2272	3,41	3,34	3,38	-0,07
		VR 4755	3,95	4,15	4,05	0,19
		1692019	3,15	3,18	3,16	0,03
		1726643	2,63	2,57	2,60	-0,07
Average difference of the category						**0,06**
Standard deviation of differences						**0,14**
Dairy & egg products	a	MV 2444	2,76	2,63	2,69	-0,12
		1691977	3,04	2,81	2,92	-0,24
		1692014	2,96	2,98	2,97	0,02
		1698408	1,95	2,00	1,98	0,05
		1698409	2,18	2,11	2,15	-0,06
	b	R 36162	4,28	4,34	4,31	0,06
		R 36786	6,04	6,08	6,06	0,04
		R 36889	6,85	7,00	6,92	0,15
		R 37297	4,61	4,63	4,62	0,02
		RD 1376	2,80	2,88	2,84	0,08
		RD 1368	3,89	3,83	3,86	-0,06
		RD 1382	3,00	3,00	3,00	0,00
		W 14564	2,60	2,56	2,58	-0,05
		R 36986	3,20	3,11	3,16	-0,09
		1691976	4,49	4,41	4,45	-0,08
		1692010	3,11	3,00	3,06	-0,11
		1692016	2,08	2,11	2,10	0,03
	c	1691975	3,45	3,30	3,37	-0,15
		1698411	2,54	2,40	2,47	-0,15
		1726640	2,15	2,04	2,09	-0,10
		1726641	5,15	5,08	5,11	-0,07
		1726642	2,18	2,20	2,19	0,03
Average difference						**-0,04**
Standard deviation of differences						**0,09**

Results summary and statistical calculations

Pour plates for REBECCA+EB

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Seafood products	a	C 85	2,89	2,81	2,85	-0,08
		CI 141	2,59	2,32	2,46	-0,27
		1714595	2,04	1,95	2,00	-0,09
		1714596	2,20	2,23	2,22	0,03
		1729341	3,74	3,81	3,77	0,07
	b	HA 5284	2,74	2,70	2,72	-0,04
		1714591	1,95	1,90	1,93	-0,05
		1714592	2,15	2,08	2,11	-0,07
		1714593	2,11	2,15	2,13	0,03
		1714599	2,23	2,08	2,15	-0,15
	c	Q 2271	4,60	4,59	4,60	-0,01
		DJ 3253	4,18	4,11	4,15	-0,06
		VR 5037	3,69	3,65	3,67	-0,04
		DJ 3789	5,99	6,11	6,05	0,12
		MV 2921	2,28	2,54	2,41	0,27
		Q 2235	2,18	2,57	2,37	0,39
Average difference						**0,00**
Standard deviation of differences						**0,16**
Vegetal products	a	1698417	2,34	2,34	2,34	0,00
		1698418	2,04	1,78	1,91	-0,26
		1698419	2,18	1,90	2,04	-0,27
		1698420	2,00	2,26	2,13	0,26
		1729345	4,96	5,11	5,04	0,15
	b	Q 2237	4,61	4,66	4,64	0,05
		DJ 3849	1,88	1,78	1,83	-0,10
		RD 1462	3,86	3,79	3,82	-0,07
		1698416	2,32	2,32	2,32	0,00
		1726645	2,26	2,18	2,22	-0,08
		1729344	3,49	3,56	3,52	0,06
	c	VR 4497	2,85	2,91	2,88	0,07
		MV 2163	1,95	1,78	1,87	-0,18
		VI 844	2,51	2,68	2,59	0,18
		RD 1460	4,59	4,59	4,59	0,00
		RD 1461	5,71	5,86	5,78	0,15
Average difference						**0,00**
Standard deviation of differences						**0,15**

Results summary and statistical calculations

Pour plates for REBECCA+EB

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Feed products	a	RD 1432	2,68	2,67	2,68	-0,01
		RD 1433	3,11	3,15	3,13	0,03
		RD 1434	6,41	6,54	6,48	0,13
		RD 1435	4,08	3,96	4,02	-0,12
		RD 1436	5,11	5,18	5,15	0,06
	b	1714601	1,90	1,78	1,84	-0,12
		1714602	2,08	1,95	2,02	-0,12
		1714603	2,18	2,23	2,20	0,05
		1714604	2,26	2,11	2,18	-0,14
		1729342	3,92	4,04	3,98	0,12
	c	RD 1427	1,74	1,85	1,79	0,10
		RD 1428	2,40	2,76	2,58	0,36
		RD 1429	3,38	3,23	3,31	-0,15
		RD 1430	4,41	4,38	4,40	-0,03
		RD 1431	5,58	5,67	5,63	0,09
		1726644	2,00	2,18	2,09	0,18
Average difference						**0,03**
Standard deviation of differences						**0,14**
Ready-to-eat & ready-to-reheat products	a	1692053	2,04	1,70	1,87	-0,34
		1698402	2,04	2,18	2,11	0,13
		1698403	2,65	2,68	2,67	0,03
		1698410	2,34	2,26	2,30	-0,09
		1714588	2,08	2,04	2,06	-0,04
		1714589	2,00	1,95	1,98	-0,05
	b	1698404	3,00	2,94	2,97	-0,06
		1698405	3,74	3,74	3,74	0,00
		1698406	4,08	3,88	3,98	-0,20
		1698413	1,85	2,18	2,01	0,33
		1698414	2,28	2,54	2,41	0,27
	c	1714590	2,04	2,08	2,06	0,04
		1714594	2,18	2,00	2,09	-0,18
		1714597	1,90	1,95	1,93	0,05
		1714598	2,00	2,11	2,06	0,11
		1714600	2,11	1,95	2,03	-0,16
Average difference						**-0,01**
Standard deviation of differences						**0,17**

Results summary and statistical calculations

Pour plates for REBECCA+EB

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
Average difference all categories						0,01
Standard deviation of differences						0,14

n =	105
β =	95%
T (0.025;97)=	1,98

Lower confidence limit	Upper confidence limit
-0,28	0,29

Data not used for the calculations

Category	Type	Sample code	Reference method	Alternative method	Mean	Difference
MP	VR 4754	a	1,48	1,30	1,39	-0,18
	1692051	b	1,30	1,30	1,30	0,00
	MV 1916	c	1,40	1,70	1,55	0,30
DP	1692054	a	1,30	1,48	1,39	0,18
	1692055	a	1,48	1,30	1,39	-0,18
	RD 1375	b	1,18	1,00	1,09	-0,18
	1692008	b	1,00	1,00	1,00	0,00
	1691989	b	0,00	1,30	0,65	1,30
SP	MV 2234	c	1,54	1,48	1,51	-0,07
VP	DJ 3361	c	1,40	1,48	1,44	0,08
	DJ 3510	c	1,54	1,00	1,27	-0,54
FP	1691988	b	1,48	0,00	0,74	-1,48
	1692066	c	1,70	0,00	0,85	-1,70
RTE	1692050	a	1,00	1,00	1,00	0,00
	1692052	b	1,70	0,00	0,85	-1,70

APPENDIX F

Accuracy profile study

Raw results

Key:

Estimated number

ACCURACY PROFILE - Meat products

Matrix: Ground beef

Strain: *Escherichia coli* , EZN508

Enumeration of the microorganisms at 30°C - batch 1: 1100 CFU/g

Enumeration of the microorganisms at 30°C - batch 2: 340 000 CFU/g

Level	Batch	R.	ISO 16649-2 (■)					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading				
			Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)
Level 1	Batch 1	R1	-1	23	-2	3	240	-1	20	-2	2	200	-1	12	-2	1	120	-1	10	-2	3	100	-1	8	-2	0	80
		R2	-1	17	-2	2	170	-1	15	-2	0	150	-1	16	-2	3	170	-1	19	-2	1	180	-1	12	-2	0	120
		R3	-1	10	-2	1	100	-1	10	-2	1	100	-1	11	-2	0	100	-1	14	-2	3	150	-1	8	-2	1	80
		R4	-1	11	-2	1	110	-1	16	-2	2	160	-1	12	-2	3	140	-1	15	-2	0	150	-1	6	-2	0	60
		R5	-1	13	-2	1	130	-1	16	-2	1	160	-1	10	-2	1	100	-1	9	-2	0	90	-1	11	-2	0	110
	Batch 2	R1	-1	13	-2	1	130	-1	14	-2	0	130	-1	11	-2	2	120	-1	10	-2	0	100	-1	7	-2	0	70
		R2	-1	16	-2	2	160	-1	13	-2	0	120	-1	9	-2	1	90	-1	14	-2	2	140	-1	6	-2	1	60
		R3	-1	22	-2	2	220	-1	20	-2	1	190	-1	14	-2	0	130	-1	15	-2	2	150	-1	12	-2	1	120
		R4	-1	17	-2	2	170	-1	22	-2	1	210	-1	17	-2	2	170	-1	16	-2	1	150	-1	10	-2	1	100
		R5	-1	19	-2	1	190	-1	12	-2	1	120	-1	6	-2	0	60	-1	13	-2	1	130	-1	13	-2	0	130
Level 2	Batch 1	R1	-2	37	-3	5	3800	-2	25	-3	2	2500	-2	32	-3	3	3200	-2	28	-3	4	2900	-2	18	-3	3	1900
		R2	-2	49	-3	2	4600	-2	32	-3	2	3100	-2	24	-3	7	2800	-2	27	-3	2	2600	-2	21	-3	3	2200
		R3	-2	30	-3	2	2900	-2	35	-3	7	3800	-2	32	-3	8	3600	-2	27	-3	4	2800	-2	26	-3	4	2800
		R4	-2	37	-3	6	3900	-2	25	-3	3	2500	-2	30	-3	3	3000	-2	22	-3	4	2400	-2	27	-3	2	2600
		R5	-2	29	-3	2	2900	-2	30	-3	3	3000	-2	34	-3	3	3400	-2	22	-3	3	2300	-2	32	-3	9	4000
	Batch 2	R1	-2	26	-3	4	2700	-2	28	-3	3	2800	-2	26	-3	3	2600	-2	32	-3	1	3000	-2	19	-3	1	2100
		R2	-2	22	-3	1	2100	-2	33	-3	8	3700	-2	23	-3	4	2400	-2	21	-3	3	2200	-2	25	-3	3	2700
		R3	-2	31	-3	1	2900	-2	22	-3	3	2300	-2	25	-3	5	2700	-2	26	-3	2	2500	-2	24	-3	5	2600
		R4	-2	30	-3	3	3000	-2	24	-3	6	2700	-2	21	-3	4	2300	-2	30	-3	2	2900	-2	35	-3	2	3400
		R5	-2	31	-3	5	3300	-2	25	-3	7	3800	-2	30	-3	6	3300	-2	28	-3	4	2900	-2	34	-3	2	3300
Level 3	Batch 1	R1	-4	34	-5	2	330000	-4	27	-5	5	290000	-4	35	-5	10	410000	-4	33	-5	7	360000	-4	23	-5	10	300000
		R2	-4	32	-5	5	340000	-4	27	-5	6	300000	-4	30	-5	4	310000	-4	32	-5	5	340000	-4	22	-5	4	240000
		R3	-4	29	-5	4	300000	-4	29	-5	2	280000	-4	37	-5	8	410000	-4	32	-5	8	360000	-4	21	-5	6	240000
		R4	-4	29	-5	5	310000	-4	29	-5	6	320000	-4	50	-5	6	510000	-4	35	-5	3	340000	-4	35	-5	7	380000
		R5	-4	19	-5	4	210000	-4	19	-5	1	180000	-4	30	-5	2	290000	-4	22	-5	1	210000	-4	14	-5	3	150000
	Batch 2	R1	-4	32	-5	5	340000	-4	24	-5	2	240000	-4	24	-5	8	290000	-4	22	-5	1	210000	-4	25	-5	4	260000
		R2	-4	23	-5	3	240000	-4	23	-5	1	220000	-4	25	-5	3	250000	-4	25	-5	2	240000	-4	25	-5	3	250000
		R3	-4	25	-5	4	260000	-4	29	-5	2	280000	-4	33	-5	3	330000	-4	22	-5	1	210000	-4	24	-5	4	250000
		R4	-4	30	-5	2	290000	-4	26	-5	3	260000	-4	39	-5	10	440000	-4	23	-5	2	230000	-4	22	-5	6	250000
		R5	-4	32	-5	4	330000	-4	21	-5	1	200000	-4	27	-5	2	260000	-4	19	-5	6	230000	-4	24	-5	5	260000

ACCURACY PROFILE - Dairy and egg products

Matrix: Raw milk cheese

Strain: *Escherichia coli* , TDW583

Enumeration of the microorganisms at 30°C - batch 1: <10 CFU/g

Enumeration of the microorganisms at 30°C - batch 2: <10 CFU/g

Level	Batch	R.	ISO 16649-2 (■)					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading				
			Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)
Level 1	Batch 1	R1	-1	13	-2	1	130	-1	16	-2	4	180	-1	14	-2	1	140	-1	7	-2	0	70	-1	12	-2	2	130
		R2	-1	13	-2	1	130	-1	13	-2	1	130	-1	10	-2	1	100	-1	13	-2	1	130	-1	10	-2	1	100
		R3	-1	8	-2	1	80	-1	12	-2	1	120	-1	15	-2	1	150	-1	13	-2	1	130	-1	16	-2	1	160
		R4	-1	15	-2	1	150	-1	12	-2	1	120	-1	12	-2	2	130	-1	8	-2	2	80	-1	5	-2	1	50
		R5	-1	10	-2	1	100	-1	11	-2	1	110	-1	15	-2	2	150	-1	11	-2	1	110	-1	9	-2	0	90
	Batch 2	R1	-1	14	-2	2	150	-1	12	-2	2	130	-1	11	-2	2	120	-1	17	-2	1	160	-1	10	-2	2	110
		R2	-1	6	-2	1	60	-1	10	-2	1	100	-1	8	-2	3	100	-1	10	-2	1	100	-1	8	-2	2	80
		R3	-1	15	-2	1	150	-1	10	-2	1	100	-1	12	-2	1	120	-1	16	-2	2	160	-1	17	-2	1	160
		R4	-1	17	-2	2	170	-1	9	-2	1	90	-1	9	-2	3	110	-1	16	-2	1	160	-1	10	-2	0	90
		R5	-1	12	-2	1	120	-1	16	-2	2	160	-1	12	-2	1	120	-1	16	-2	2	140	-1	17	-2	0	150
Level 2	Batch 1	R1	-2	45	-3	5	4500	-2	50	-3	5	5000	-2	35	-3	6	3700	-2	39	-3	6	4100	-2	27	-3	5	2900
		R2	-2	38	-3	9	4300	-2	38	-3	2	3600	-2	28	-3	1	2600	-2	30	-3	1	2800	-2	32	-3	2	3100
		R3	-2	42	-3	5	4300	-2	36	-3	4	3600	-2	36	-3	3	3600	-2	41	-3	5	4200	-2	42	-3	5	4300
		R4	-2	42	-3	6	4400	-2	37	-3	5	3800	-2	42	-3	3	4100	-2	36	-3	4	3600	-2	38	-3	4	3800
		R5	-2	36	-3	4	3600	-2	37	-3	4	3700	-2	33	-3	7	3600	-2	38	-3	2	3600	-2	26	-3	3	2600
	Batch 2	R1	-2	36	-3	3	3600	-2	43	-3	4	4300	-2	36	-3	10	4200	-2	36	-3	5	3700	-2	40	-3	3	3900
		R2	-2	40	-3	3	3900	-2	39	-3	4	3900	-2	27	-3	5	2900	-2	35	-3	3	3500	-2	32	-3	0	2900
		R3	-2	42	-3	4	4200	-2	38	-3	2	3600	-2	38	-3	8	4200	-2	49	-3	4	4800	-2	37	-3	6	3900
		R4	-2	35	-3	1	3300	-2	33	-3	1	3100	-2	39	-3	4	3900	-2	49	-3	4	4800	-2	34	-3	4	3500
		R5	-2	46	-3	1	4300	-2	38	-3	4	3800	-2	39	-3	11	4600	-2	47	-3	5	4700	-2	36	-3	3	3600
Level 3	Batch 1	R1	-3	100	-4	9	99000	-3	105	-4	21	120000	-3	138	-4	12	140000	-3	94	-4	12	96000	-3	82	-4	9	83000
		R2	-3	97	-4	20	110000	-3	119	-4	15	120000	-4	19	-5	1	180000	-3	118	-4	8	120000	-3	77	-4	7	76000
		R3	-3	141	-4	19	150000	-3	110	-4	15	110000	-3	134	-4	16	140000	-3	115	-4	17	120000	-3	62	-4	7	63000
		R4	-3	119	-4	14	120000	-3	106	-4	13	99000	-3	136	-4	7	130000	-3	132	-4	16	140000	-3	38	-4	5	39000
		R5	-3	114	-4	9	110000	-3	116	-4	22	130000	-3	145	-4	15	150000	-3	121	-4	13	120000	-3	59	-4	12	65000
	Batch 2	R1	-3	147	-4	16	150000	-3	113	-4	22	120000	-3	145	-4	18	150000	-3	128	-4	8	120000	-3	59	-4	7	60000
		R2	-3	127	-4	19	130000	-3	103	-4	12	110000	-3	116	-4	21	130000	-3	111	-4	11	110000	-3	65	-4	7	66000
		R3	-3	118	-4	16	120000	-3	119	-4	15	120000	-3	109	-4	8	110000	-3	119	-4	14	120000	-3	72	-4	5	70000
		R4	-3	101	-4	17	110000	-3	109	-4	15	110000	-3	115	-4	10	110000	-3	134	-4	14	140000	-3	83	-4	11	86000
		R5	-3	121	-4	18	130000	-3	112	-4	16	120000	-3	97	-4	11	98000	-3	99	-4	13	100000	-3	77	-4	14	83000

ACCURACY PROFILE - Seafood products

Matrix: Raw fish fillet

Strain: *Escherichia coli* , AZD018

Enumeration of the microorganisms at 30°C - batch 1: 30 000 CFU/g

Enumeration of the microorganisms at 30°C - batch 2: 1 800 000 CFU/g

Level	Batch	R.	ISO 16649-2 (■)					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading				
			Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)
Level 1	Batch 1	R1	-1	28	-2	4	290	-1	10	-2	1	100	-1	17	-2	0	150	-1	14	-2	0	130	-1	17	-2	0	150
		R2	-1	32	-2	1	300	-1	16	-2	1	160	-1	14	-2	0	130	-1	16	-2	2	160	-1	19	-2	1	190
		R3	-1	24	-2	3	240	-1	15	-2	0	140	-1	11	-2	0	100	-1	18	-2	1	170	-1	16	-2	1	160
		R4	-1	24	-2	0	220	-1	17	-2	2	170	-1	11	-2	0	100	-1	10	-2	1	100	-1	15	-2	1	150
		R5	-1	23	-2	4	240	-1	19	-2	1	190	-1	18	-2	1	180	-1	18	-2	2	180	-1	10	-2	2	110
	Batch 2	R1	-1	27	-2	2	260	-1	11	-2	0	100	-1	18	-2	0	160	-1	10	-2	1	100	-1	16	-2	1	160
		R2	-1	26	-2	0	240	-1	16	-2	0	160	-1	19	-2	0	170	-1	12	-2	1	100	-1	15	-2	1	150
		R3	-1	29	-2	4	300	-1	16	-2	0	160	-1	11	-2	1	110	-1	19	-2	1	190	-1	16	-2	1	160
		R4	-1	17	-2	0	150	-1	17	-2	1	170	-1	16	-2	1	160	-1	17	-2	0	150	-1	15	-2	1	150
		R5	-1	29	-2	2	280	-1	16	-2	2	160	-1	16	-2	2	160	-1	18	-2	0	160	-1	16	-2	1	160
Level 2	Batch 1	R1	-2	44	-3	4	4400	-2	35	-3	6	3700	-2	44	-3	5	4500	-2	47	-3	5	4700	-2	34	-3	4	3400
		R2	-2	40	-3	5	4100	-2	30	-3	5	3200	-2	48	-3	1	4500	-2	30	-3	4	3100	-2	30	-3	1	2800
		R3	-2	38	-3	8	4200	-2	24	-3	2	2400	-2	39	-3	6	4100	-2	31	-3	5	3300	-2	35	-3	5	3600
		R4	-2	30	-3	2	2900	-2	35	-3	2	3400	-2	27	-3	1	2600	-2	32	-3	1	3000	-2	24	-3	2	2400
		R5	-2	40	-3	2	3800	-2	25	-3	3	2500	-2	30	-3	1	2800	-2	26	-3	1	2500	-2	32	-3	2	3100
	Batch 2	R1	-2	38	-3	5	3900	-2	31	-3	5	3300	-2	41	-3	5	4200	-2	29	-3	3	2900	-2	30	-3	2	2900
		R2	-2	31	-3	4	3200	-2	33	-3	6	3600	-2	28	-3	2	2700	-2	40	-3	3	3900	-2	36	-3	5	3700
		R3	-2	38	-3	1	3600	-2	18	-3	4	2000	-2	27	-3	2	2600	-2	42	-3	3	4100	-2	27	-3	5	2900
		R4	-2	44	-3	5	4400	-2	25	-3	2	2500	-2	28	-3	4	2900	-2	34	-3	3	3400	-2	20	-3	2	2000
		R5	-2	34	-3	4	3500	-2	23	-3	3	2400	-2	28	-3	4	2900	-2	26	-3	6	2900	-2	34	-3	2	3300
Level 3	Batch 1	R1	-3	89	-4	9	89000	-3	82	-4	11	85000	-3	60	-4	13	66000	-3	65	-4	13	71000	-3	70	-4	6	69000
		R2	-3	67	-4	1	62000	-3	84	-4	9	84000	-3	50	-4	6	51000	-3	58	-4	4	56000	-3	51	-4	4	50000
		R3	-3	84	-4	12	87000	-3	58	-4	8	60000	-3	70	-4	12	75000	-3	54	-4	6	55000	-3	63	-4	3	60000
		R4	-3	86	-4	7	85000	-3	75	-4	6	74000	-3	59	-4	11	64000	-3	52	-4	10	56000	-3	73	-4	6	72000
		R5	-3	80	-4	9	81000	-3	73	-4	7	73000	-3	74	-4	10	76000	-3	58	-4	6	58000	-3	71	-4	6	70000
	Batch 2	R1	-3	92	-4	7	90000	-3	84	-4	13	88000	-3	66	-4	12	71000	-3	67	-4	6	66000	-3	59	-4	4	57000
		R2	-3	77	-4	7	76000	-3	67	-4	10	70000	-3	53	-4	4	54000	-3	47	-4	1	44000	-3	67	-4	4	65000
		R3	-3	77	-4	8	77000	-3	65	-4	11	69000	-3	54	-4	8	56000	-3	50	-4	11	55000	-3	61	-4	6	61000
		R4	-3	80	-4	3	75000	-3	64	-4	5	63000	-3	58	-4	8	60000	-3	58	-4	7	59000	-3	65	-4	3	62000
		R5	-3	76	-4	8	76000	-3	67	-4	8	68000	-3	61	-4	11	65000	-3	60	-4	5	59000	-3	53	-4	12	59000

ACCURACY PROFILE - Vegetal products

Matrix: Frozen vegetables pan Strain: *Escherichia coli* , BCF262

Enumeration of the microorganisms at 30°C - batch 1: 3100 CFU/g
Enumeration of the microorganisms at 30°C - batch 2: 2000 CFU/g

Level	Batch	R.	ISO 16649-2 (■)					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading				
			Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)
Level 1	Batch 1	R1	-1	9	-2	0	90	-1	7	-2	1	70	-1	7	-2	1	70	-1	7	-2	0	70	-1	7	-2	0	70
		R2	-1	10	-2	1	90	-1	4	-2	0	40	-1	4	-2	1	40	-1	6	-2	1	60	-1	6	-2	0	60
		R3	-1	8	-2	0	80	-1	4	-2	0	40	-1	6	-2	2	60	-1	5	-2	1	50	-1	7	-2	1	70
		R4	-1	7	-2	0	70	-1	6	-2	1	60	-1	9	-2	2	90	-1	7	-2	1	70	-1	10	-2	1	100
		R5	-1	7	-2	1	70	-1	4	-2	1	40	-1	9	-2	0	90	-1	7	-2	3	70	-1	10	-2	1	100
	Batch 2	R1	-1	11	-2	0	100	-1	4	-2	1	40	-1	4	-2	1	40	-1	10	-2	1	100	-1	7	-2	0	70
		R2	-1	6	-2	1	60	-1	10	-2	2	110	-1	4	-2	0	40	-1	6	-2	2	60	-1	10	-2	2	110
		R3	-1	4	-2	0	40	-1	5	-2	2	50	-1	6	-2	1	60	-1	18	-2	1	170	-1	10	-2	0	90
		R4	-1	4	-2	0	40	-1	12	-2	1	120	-1	5	-2	2	50	-1	4	-2	2	40	-1	12	-2	0	110
		R5	-1	10	-2	0	90	-1	11	-2	2	120	-1	5	-2	0	50	-1	4	-2	0	40	-1	13	-2	0	120
Level 2	Batch 1	R1	-2	31	-3	3	3100	-2	31	-3	5	3300	-2	20	-3	2	2000	-2	30	-3	6	3300	-2	24	-3	0	2200
		R2	-2	26	-3	2	2600	-2	29	-3	2	2800	-2	23	-3	3	2300	-2	24	-3	3	2400	-2	24	-3	4	2600
		R3	-2	23	-3	0	2100	-2	32	-3	0	2900	-2	24	-3	4	2400	-2	18	-3	4	2000	-2	26	-3	1	2500
		R4	-2	22	-3	2	2200	-2	34	-3	3	3400	-2	21	-3	4	2300	-2	32	-3	2	3100	-2	26	-3	3	2600
		R5	-2	26	-3	2	2600	-2	30	-3	3	3000	-2	23	-3	4	2500	-2	22	-3	1	2100	-2	32	-3	1	3000
	Batch 2	R1	-2	35	-3	2	3400	-2	26	-3	6	2900	-2	27	-3	3	2700	-2	25	-3	2	2500	-2	29	-3	1	2700
		R2	-2	22	-3	1	2100	-2	22	-3	3	2200	-2	22	-3	5	2500	-2	19	-3	4	2100	-2	23	-3	3	2300
		R3	-2	27	-3	3	2700	-2	21	-3	4	2300	-2	31	-3	8	3600	-2	22	-3	2	2200	-2	31	-3	2	3000
		R4	-2	20	-3	2	2000	-2	23	-3	3	2300	-2	27	-3	2	2600	-2	21	-3	4	2300	-2	23	-3	3	2400
		R5	-2	26	-3	3	2600	-2	25	-3	2	2500	-2	20	-3	5	2300	-2	23	-3	2	2300	-2	29	-3	2	2800
Level 3	Batch 1	R1	-3	87	-4	5	84000	-3	70	-4	6	69000	-3	55	-4	11	60000	-3	48	-4	9	52000	-3	39	-4	5	40000
		R2	-3	74	-4	11	77000	-3	66	-4	7	66000	-3	47	-4	5	47000	-3	46	-4	8	49000	-3	40	-4	8	44000
		R3	-3	71	-4	13	76000	-3	72	-4	9	74000	-3	52	-4	7	54000	-3	65	-4	11	69000	-3	45	-4	3	44000
		R4	-3	66	-4	9	68000	-3	57	-4	6	57000	-3	57	-4	9	60000	-3	51	-4	3	49000	-3	54	-4	4	53000
		R5	-3	73	-4	7	73000	-3	70	-4	6	69000	-3	51	-4	10	56000	-3	51	-4	10	56000	-3	55	-4	3	53000
	Batch 2	R1	-3	70	-4	10	73000	-3	52	-4	11	57000	-3	48	-4	13	56000	-3	55	-4	8	57000	-3	53	-4	3	51000
		R2	-3	59	-4	10	63000	-3	56	-4	11	61000	-3	52	-4	12	58000	-3	53	-4	9	56000	-3	52	-4	1	48000
		R3	-3	86	-4	7	85000	-3	67	-4	8	68000	-3	64	-4	15	72000	-3	56	-4	14	64000	-3	63	-4	5	62000
		R4	-3	77	-4	4	74000	-3	53	-4	13	60000	-3	54	-4	10	58000	-3	56	-4	12	62000	-3	56	-4	3	54000
		R5	-3	85	-4	8	85000	-3	64	-4	12	69000	-3	50	-4	9	54000	-3	60	-4	6	60000	-3	48	-4	3	46000

ACCURACY PROFILE - Feed products

Matrix: Cat kibbles

Strain: *Escherichia coli* , EAR487

Enumeration of the microorganisms at 30°C - batch 1: <10 CFU/g

Enumeration of the microorganisms at 30°C - batch 2: <10 CFU/g

Level	Batch	R.	ISO 16649-2 (■)					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading				
			Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)
Level 1	Batch 1	R1	-1	13	-2	1	130	-1	11	-2	2	120	-1	19	-2	2	190	-1	13	-2	2	130	-1	14	-2	3	160
		R2	-1	16	-2	2	160	-1	12	-2	2	130	-1	10	-2	1	100	-1	13	-2	5	160	-1	17	-2	1	160
		R3	-1	10	-2	0	90	-1	9	-2	1	90	-1	10	-2	3	120	-1	11	-2	6	160	-1	13	-2	0	120
		R4	-1	9	-2	3	110	-1	11	-2	4	140	-1	11	-2	3	130	-1	10	-2	1	100	-1	13	-2	0	120
		R5	-1	10	-2	1	100	-1	12	-2	2	130	-1	8	-2	2	80	-1	11	-2	1	110	-1	10	-2	2	110
	Batch 2	R1	-1	7	-2	1	70	-1	12	-2	2	130	-1	12	-2	1	120	-1	17	-2	1	160	-1	10	-2	1	100
		R2	-1	17	-2	1	160	-1	7	-2	1	70	-1	17	-2	1	160	-1	13	-2	2	130	-1	10	-2	1	100
		R3	-1	12	-2	1	120	-1	10	-2	1	100	-1	22	-2	0	200	-1	6	-2	0	60	-1	13	-2	2	130
		R4	-1	9	-2	1	90	-1	10	-2	2	110	-1	12	-2	0	110	-1	13	-2	1	130	-1	11	-2	4	140
		R5	-1	11	-2	2	120	-1	12	-2	1	120	-1	15	-2	0	140	-1	16	-2	1	160	-1	7	-2	2	70
Level 2	Batch 1	R1	-2	26	-3	6	2900	-2	30	-3	2	2900	-2	26	-3	5	2800	-2	29	-3	1	2700	-2	43	-3	4	4300
		R2	-2	36	-3	5	3700	-2	34	-3	6	3600	-2	42	-3	6	4400	-2	21	-3	2	2100	-2	29	-3	3	2900
		R3	-2	36	-3	6	3800	-2	33	-3	5	3500	-2	39	-3	8	4300	-2	28	-3	5	3000	-2	36	-3	1	3400
		R4	-2	30	-3	4	3100	-2	32	-3	1	3000	-2	25	-3	1	2400	-2	28	-3	5	3000	-2	45	-3	2	4300
		R5	-2	24	-3	5	2600	-2	31	-3	3	3100	-2	28	-3	4	2900	-2	22	-3	0	2000	-2	40	-3	3	3900
	Batch 2	R1	-2	42	-3	4	4200	-2	35	-3	3	3500	-2	30	-3	3	3000	-2	43	-3	4	4300	-2	22	-3	1	2100
		R2	-2	36	-3	5	3700	-2	32	-3	4	3300	-2	39	-3	8	4300	-2	24	-3	7	2800	-2	36	-3	3	3600
		R3	-2	30	-3	4	3100	-2	36	-3	3	3600	-2	27	-3	6	3000	-2	32	-3	4	3300	-2	27	-3	5	2900
		R4	-2	33	-3	3	3300	-2	28	-3	3	2800	-2	42	-3	7	4500	-2	33	-3	2	3200	-2	40	-3	2	3800
		R5	-2	38	-3	5	3900	-2	37	-3	6	3900	-2	38	-3	7	4100	-2	41	-3	2	3900	-2	32	-3	2	3100
Level 3	Batch 1	R1	-3	100	-4	11	100000	-3	77	-4	12	81000	-3	107	-4	15	110000	-3	75	-4	19	86000	-3	88	-4	12	91000
		R2	-3	93	-4	10	94000	-3	88	-4	12	91000	-3	101	-4	11	100000	-3	78	-4	10	80000	-3	103	-4	6	99000
		R3	-3	78	-4	13	83000	-3	63	-4	17	73000	-3	92	-4	13	96000	-3	82	-4	8	82000	-3	91	-4	7	89000
		R4	-3	80	-4	18	89000	-3	74	-4	13	79000	-3	111	-4	8	110000	-3	83	-4	9	83000	-3	84	-4	5	81000
		R5	-3	86	-4	9	86000	-3	72	-4	13	77000	-3	105	-4	12	110000	-3	80	-4	15	86000	-3	64	-4	5	63000
	Batch 2	R1	-3	107	-4	8	110000	-3	65	-4	11	69000	-3	113	-4	16	120000	-3	66	-4	15	74000	-3	108	-4	3	100000
		R2	-3	76	-4	12	80000	-3	82	-4	17	90000	-3	97	-4	11	98000	-3	87	-4	8	86000	-3	97	-4	5	93000
		R3	-3	67	-4	17	76000	-3	96	-4	8	95000	-3	95	-4	11	96000	-3	88	-4	9	88000	-3	150	-4	11	150000
		R4	-3	76	-4	12	80000	-3	78	-4	25	94000	-3	110	-4	9	110000	-3	79	-4	10	81000	-3	90	-4	13	94000
		R5	-3	100	-4	10	100000	-3	65	-4	6	65000	-3	90	-4	9	90000	-3	83	-4	9	83000	-3	80	-4	14	86000

ACCURACY PROFILE - Ready-to-eat and ready-to-reheat products

Matrix: Quiche lorraine

Strain: *Escherichia coli* , UBS981

Enumeration of the microorganisms at 30°C - batch 1: <10 CFU/g

Enumeration of the microorganisms at 30°C - batch 2: <10 CFU/g

Level	Batch	R.	ISO 16649-2 (■)					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading					REBECCA BASE - Pour plates					REBECCA BASE - Surface spreading				
			Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)	Dil. 1	CFU	Dil. 2	CFU	Result (CFU/g)
Level 1	Batch 1	R1	-1	9	-2	0	90	-1	10	-2	0	100	-1	10	-2	1	100	-1	12	-2	2	130	-1	9	-2	1	90
		R2	-1	19	-2	1	180	-1	12	-2	2	120	-1	7	-2	1	70	-1	10	-2	1	100	-1	7	-2	1	70
		R3	-1	11	-2	0	100	-1	8	-2	0	80	-1	11	-2	1	110	-1	9	-2	1	90	-1	5	-2	2	50
		R4	-1	8	-2	2	80	-1	6	-2	0	60	-1	7	-2	3	70	-1	6	-2	1	60	-1	8	-2	0	80
		R5	-1	6	-2	0	60	-1	10	-2	1	100	-1	7	-2	2	70	-1	10	-2	0	100	-1	5	-2	2	50
	Batch 2	R1	-1	8	-2	0	80	-1	10	-2	1	100	-1	10	-2	2	110	-1	12	-2	1	120	-1	14	-2	2	150
		R2	-1	9	-2	0	90	-1	12	-2	1	120	-1	10	-2	1	100	-1	6	-2	0	60	-1	9	-2	0	90
		R3	-1	14	-2	1	140	-1	13	-2	2	140	-1	10	-2	3	120	-1	6	-2	0	60	-1	7	-2	1	70
		R4	-1	8	-2	1	80	-1	10	-2	1	100	-1	11	-2	3	130	-1	6	-2	0	60	-1	7	-2	2	70
		R5	-1	6	-2	1	60	-1	10	-2	2	110	-1	12	-2	2	130	-1	12	-2	0	110	-1	6	-2	2	60
Level 2	Batch 1	R1	-2	30	-3	0	2700	-2	24	-3	2	2400	-2	21	-3	5	2400	-2	28	-3	4	2900	-2	28	-3	4	2900
		R2	-2	22	-3	1	2100	-2	18	-3	3	1900	-2	24	-3	1	2300	-2	23	-3	2	2300	-2	25	-3	3	2500
		R3	-2	32	-3	3	3200	-2	23	-3	4	2500	-2	33	-3	1	3100	-2	24	-3	4	2500	-2	18	-3	2	1800
		R4	-2	24	-3	2	2400	-2	23	-3	2	2300	-2	22	-3	4	2400	-2	22	-3	3	2300	-2	26	-3	1	2500
		R5	-2	26	-3	1	2500	-2	27	-3	2	2600	-2	35	-3	2	3400	-2	31	-3	3	3100	-2	16	-3	2	1600
	Batch 2	R1	-2	30	-3	1	2800	-2	17	-3	1	1600	-2	25	-3	5	2700	-2	16	-3	4	1800	-2	21	-3	1	2000
		R2	-2	31	-3	1	2900	-2	28	-3	3	2800	-2	20	-3	1	1900	-2	28	-3	0	2500	-2	17	-3	3	1800
		R3	-2	30	-3	4	3100	-2	23	-3	4	2500	-2	22	-3	3	2300	-2	23	-3	4	2500	-2	23	-3	4	2500
		R4	-2	25	-3	0	2300	-2	29	-3	2	2800	-2	29	-3	5	3100	-2	26	-3	1	2500	-2	23	-3	0	2100
		R5	-2	26	-3	2	2600	-2	29	-3	1	2700	-2	23	-3	3	2400	-2	24	-3	2	2400	-2	19	-3	3	2000
Level 3	Batch 1	R1	-3	79	-4	12	83000	-3	61	-4	12	66000	-3	67	-4	14	74000	-3	72	-4	10	75000	-3	52	-4	7	54000
		R2	-3	60	-4	4	58000	-3	62	-4	11	66000	-3	79	-4	12	83000	-3	61	-4	9	64000	-3	50	-4	10	55000
		R3	-3	63	-4	10	66000	-3	61	-4	9	64000	-3	65	-4	16	74000	-3	54	-4	11	59000	-3	57	-4	2	54000
		R4	-3	85	-4	7	84000	-3	65	-4	9	67000	-3	87	-4	10	88000	-3	61	-4	10	65000	-3	49	-4	2	46000
		R5	-3	81	-4	12	85000	-3	64	-4	4	62000	-3	81	-4	9	82000	-3	72	-4	8	73000	-3	46	-4	1	43000
	Batch 2	R1	-3	90	-4	10	90000	-3	70	-4	3	66000	-3	66	-4	7	66000	-3	68	-4	8	69000	-3	53	-4	1	49000
		R2	-3	76	-4	15	83000	-3	62	-4	8	64000	-3	72	-4	16	80000	-3	80	-4	16	87000	-3	52	-4	5	52000
		R3	-3	62	-4	11	66000	-3	77	-4	6	76000	-3	79	-4	7	78000	-3	72	-4	5	70000	-3	60	-4	12	66000
		R4	-3	69	-4	11	73000	-3	87	-4	10	88000	-3	66	-4	15	74000	-3	63	-4	3	60000	-3	48	-4	6	49000
		R5	-3	76	-4	9	77000	-3	73	-4	6	72000	-3	66	-4	17	76000	-3	64	-4	7	65000	-3	57	-4	2	54000

APPENDIX G

Inclusivity raw results

#	Code	Strain	Origin	REBECCA (blue colonies)		NF ISO 16649-2	
				Replicate 1	Replicate 2	Replicate 1	Replicate 2
1	I2	*Escherichia coli*	Grated carrots	120	120	41	58
2	I23	*Escherichia coli*	Dairy industry	50	47	36	34
3	R3	*Escherichia coli*	CIP 54.127	47	54	41	37
4	R74	*Escherichia coli*	ATCC 8739	50	44	47	31
5	I38	*Escherichia coli*	Camembert	27	24	23	18
6	I39	*Escherichia coli*	Chicken ravioli	40	34	8	16
7	I41	*Escherichia coli*	Beef pellets 20% fat	42	40	58	50
8	I42	*Escherichia coli*	Beef pellets 30% fat	29	29	23	16
9	I46	*Escherichia coli*	Ground beef 15% fat	110	98	63	73
10	I47	*Escherichia coli*	Marinated chicken	39	38	34	25
11	I48	*Escherichia coli*	Cheese	40	42	31	28
12	I49	*Escherichia coli*	Contact Petri dish	37	25	19	23
13	I50	*Escherichia coli*	Swab	23	16	18	18
14	I51	*Escherichia coli*	Salad	33	39	7	4
15	I52	*Escherichia coli*	Beef muscle 80/20	63	29	6	3
16	I53	*Escherichia coli*	Ground beef	34	47	19	23
17	I54	*Escherichia coli*	Chicken ravioli	55	52	19	30
18	I55	*Escherichia coli*	Smoked and cooked salmon rillettes	96	96	71	73
19	I56	*Escherichia coli*	Shrimps and parsil ravioli	92	83	66	68
20	I57	*Escherichia coli*	Kebab meat preparation	38	41	35	28
21	I58	*Escherichia coli*	Beef pellets 20% fat	54	59	33	13
22	I59	*Escherichia coli*	Beef muscle 80/20	90	84	47	37
23	I60	*Escherichia coli*	Beef / pork mix	30	47	16	18
24	I63	*Escherichia coli*	Ground pork	17	28	27	24
25	I64	*Escherichia coli*	Scallops ravioli	45	59	40	57
26	I65	*Escherichia coli*	Watercress sauce	43	42	34	37
27	I66	*Escherichia coli*	Noodles/tomato/broccoli/surimi/mayonnaise salad	33	37	25	37
28	I67	*Escherichia coli*	Croissants farcis	42	41	10	10
29	I68	*Escherichia coli*	White radish arugula ricotta ravioli	44	49	27	25
30	I69	*Escherichia coli*	Camembert	56	37	39	35
31	I70	*Escherichia coli*	Fruit puffed pastry	130	149	121	145
32	I71	*Escherichia coli*	Scallops	55	51	43	47
33	I72	*Escherichia coli*	Raw shrimps	65	77	68	58
34	I73	*Escherichia coli*	Merguez	78	87	89	95
35	I74	*Escherichia coli*	Orange/grapefruit salad	37	31	29	28
36	I75	*Escherichia coli*	Raw milk laguiole cheese	54	66	73	57
37	I76	*Escherichia coli*	Raw milk young cantal cheese	35	51	27	35
38	I77	*Escherichia coli*	Recycleds dough offcuts	16	24	29	13
39	I78	*Escherichia coli*	Dough on flouring table	16	13	14	17
40	I79	*Escherichia coli*	Raw peeled shrimp	13	16	4	4
41	I80	*Escherichia coli*	Dough after rolling	22	30	32	35
42	I81	*Escherichia coli*	Dough after mixing	36	22	21	27
43	I88	*Escherichia coli*	Bass tartare	9	22	12	9
44	I89	*Escherichia coli*	Veal merguez	55	63	47	56
45	I90	*Escherichia coli*	Turkey chicken veal kebab	28	35	17	26
46	I91	*Escherichia coli*	Shrimps ravioli	72	58	44	54
47	I92	*Escherichia coli*	Stuffing	28	30	19	17
48	I93	*Escherichia coli*	Roquefort	64	60	17	27
49	I94	*Escherichia coli*	Tomato rice salad	50	48	51	53
50	I95	*Escherichia coli*	Tomato mozarella salad	38	33	37	38

APPENDIX G

Exclusivity raw results

Initial validation							
#	Code	Strain	Origin	Number of CFU/Petri dish			
				REBECCA (blue colonies)		NF ISO 16649-2	
				Replicate 1	Replicate 2	Replicate 1	Replicate 2
1	I36	*Aeromonas aerophila*	Smoked salmon	0	0	0	0
2	I28	*Bacillus cereus*	Dairy industry	0	0	0	0
3	R40	*Citrobacter freundii*	ATCC 8090	0	0	0	0
4	R2	*Citrobacter koseri*	CIP 72.11	0	0	0	0
5	I25	*Enterobacter aerogenes*	Dairy industry	0	0	0	0
6	R8	*Enterobacter aerogenes*	CIP 60.86 T	0	0	0	0
7	R67	*Enterobacter cloacae*	CIP 60 85	0	0	0	0
8	I37	*Enterobacter sakazakii*	Milk powder	0	0	0	0
9	R119	*Escherichia vulneris*	CIP 103177	0	0	0	0
10	R82	*Escherichia hermanii*	CIP 103176	0	0	0	0
11	I3	*Hafnia alvei*	Tabbouleh	0	0	0	0
12	I17	*Klebsiella oxytoca*	Mung beans salad	0	0	0	0
13	I6	*Klebsiella pneumoniae*	Pastry	0	0	0	0
14	I16	*Pseudomonas aeruginosa*	Gruyère omelet	0	0	0	0
15	R95	*Proteus mirabilis*	CIP 103181	0	0	0	0
16	S65	*Salmonella* Javiana	Dried mushrooms	0	0	0	0
17	P39	*Salmonella* Typhimurium	Pork throat	0	0	0	0
18	R117	*Serratia ficaria*	CIP 79.23	0	0	0	0
19	R80	*Shigella sonnei*	ATCC 9290	15	18	16	15
20	R73	*Staphylococcus aureus*	ATCC 6538	0	0	0	0
21	R120	*Escherichia coli O:157.H7*	CIP 105917	0	0	0	0
22	ESC1.29	*Escherichia coli O:157.H7*	German University	0	0	0	0

Renewal 2019									
#	Code	Strain	Origin	TSA (real level in CFU per Petri dish)	Number of CFU/Petri dish				
					TBX	REBECCA pouring	REBECCA surface	REBECCA+EB pouring	REBECCA+EB surface
23	SAE286	*Acinetobacter baumanii*	Powdered infant formula	630	<10	<10[a]	<10	<10	<10[b]
24	EFG554	*Corynebacterium callunae*	Pizza calzone	850	<10	<10	<10	<10	<10
25	FBM018	*Corynebacterium flavescens*	Morbier cheese	550	<10	<10	<10	<10	<10
26	ABB472	*Aeromonas sp*	Fish	610	<10	<10	<10	<10	<10
27	AAZ671	*Pseudomonas fragi*	Turkey cutlet offcuts	510	<10	<10	<10	<10	<10
28	BDK055	*Pseudomonas fluorescens*	Meat product	600	<10	<10	<10	<10	<10
29	DAR118	*Rhodococcus erythropolis*	Unpeeled cucumber dices	610	<10	<10	<10	<10	<10
30	YFJ492	*Carnobacterium divergens*	Salmon steak	560	<10	<10	<10	<10	<10

a: presence of blue colonies
b: presence of pink colonies

APPENDIX H

Interlaboratory study
Raw results

TOTAL VIABLE COUNT OF THE PASTEURIZED MILK

Results per collaborator in CFU/ml

Collaborator	Result
A	<10
B	<10
C	<10
D	1900
F	2500
G	140
H	380
I	6500
J	430
Expert	1100

Raw results - *Escherichia coli*

Level 0

Laboratories	Reference method (ISO 16649-2)													
	Sample 2							Sample 8						
	-1		-2		-3		Results (UFC/mL)	-1		-2		-3		Results (UFC/mL)
	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2		Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	
A	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<10
B	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<10
C	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<10
D	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<10
F	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<10
G	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<10
H	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<10
I	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<10
J	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<10
Expert laboratory	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<10

Laboratories	Alternative method (REBECCA + EB - blue to purple colonies)							
	Sample 2				Sample 8			
	-1	-2	-3	Results (UFC/mL)	-1	-2	-3	Results (UFC/mL)
A	<1	<1	<1	<10	<1	<1	<1	<10
B	<1	<1	<1	<10	<1	<1	<1	<10
C	<1	<1	<1	<10	<1	<1	<1	<10
D	<1	<1	<1	<10	<1	<1	<1	<10
F	<1	<1	<1	<10	<1	<1	<1	<10
G	<1	<1	<1	<10	<1	<1	<1	<10
H	<1	<1	<1	<10	<1	<1	<1	<10
I	<1	<1	<1	<10	<1	<1	<1	<10
J	<1	<1	<1	<10	<1	<1	<1	<10
Expert laboratory	<1	<1	<1	<10	<1	<1	<1	<10

Raw results - *Escherichia coli*

Level 1

Initial contamination: 24 *Escherichia coli* per mL

Laboratories	Reference method (ISO 16649-2)													
	Sample 4							Sample 7						
	-1		-2		-3		Results (UFC/mL)	-1		-2		-3		Results (UFC/mL)
	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2		Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	
A	2[a]	1	1	<1	<1	<1	15	3	1	<1	1	<1	<1	20
B	2	3	<1	2	<1	<1	25	5	6	<1	<1	<1	<1	55
C	2	6	1	<1	<1	<1	40	6	3	<1	1	<1	<1	45
D	5	3	2	<1	<1	<1	40	3	4	<1	<1	<1	<1	35
F	6	2	1	<1	<1	<1	40	3	3	1	<1	<1	<1	30
G	3	5	1	<1	<1	<1	40	3	2	1	<1	1	<1	25
H	7	4	1	<1	<1	<1	55	5	8	<1	<1	<1	<1	65
I	6	7	<1	<1	<1	<1	65	8	7	1	<1	<1	<1	75
J	1	6	<1	1	<1	<1	35	3	2	<1	<1	<1	<1	25
Expert laboratory	1	4	<1	1	<1	<1	25	6	6	<1	<1	<1	<1	60

Laboratories	Alternative method (REBECCA + EB - blue to purple colonies)							
	Sample 4				Sample 7			
	-1	-2	-3	Results (UFC/mL)	-1	-2	-3	Results (UFC/mL)
A	2[a]	1	<1	20	7	1	<1	70
B	1	<1	<1	10	1	<1	<1	10
C	3	1	<1	30	5	<1	<1	50
D	5	<1	<1	50	4	<1	<1	40
F	4	<1	<1	40	5	<1	<1	50
G	4	<1	<1	40	4	<1	<1	40
H	10	1	<1	100	3	<1	<1	30
I	4	<1	<1	40	4	<1	<1	40
J	1	<1	<1	10	4	<1	<1	40
Expert laboratory	2	1	<1	20	4	<1	<1	40

a: estimated number

Raw results - *Escherichia coli*

Level 2

Initial contamination: 840 *Escherichia coli* per mL

Laboratories	Reference method (ISO 16649-2)													
	Sample 5							Sample 6						
	-1		-2		-3		Results (UFC/mL)	-1		-2		-3		Results (UFC/mL)
	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2		Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	
A	30	38	3	3	1	<1	340	47	20	4	<1	<1	<1	320
B	42	41	5	3	<1	<1	410	44	43	2	3	<1	<1	420
C	44	45	4	7	3	<1	450	39	38	7	2	<1	<1	390
D	35	35	2	6	<1	<1	350	33	46	1	1	<1	<1	370
F	38	43	9	3	2	<1	420	38	36	4	3	1	<1	370
G	53	43	2	3	<1	<1	460	43	43	4	4	<1	<1	430
H	37	44	6	6	<1	<1	420	40	29	8	4	1	<1	370
I	42	34	4	6	<1	<1	390	37	46	4	6	<1	<1	420
J	40	51	3	4	<1	<1	450	38	32	4	3	<1	<1	350
Expert laboratory	35	43	3	<1	<1	<1	370	33	33	6	5	<1	<1	350

Laboratories	Alternative method (REBECCA + EB - blue to purple colonies)							
	Sample 5				Sample 6			
	-1	-2	-3	Results (UFC/mL)	-1	-2	-3	Results (UFC/mL)
A	42	6	1	440	36	5	<1	370
B	40	2	<1	380	31	2	<1	300
C	31	7	<1	350	30	1	<1	280
D	46	4	1	450	44	3	1	430
F	45	4	<1	450	30	2	<1	290
G	30	3	<1	300	36	4	<1	360
H	35	2	<1	340	42	4	1	420
I	30	4	<1	310	33	11	1	400
J	38	3	<1	370	41	3	<1	400
Expert laboratory	43	3	<1	420	42	3	<1	410

Raw results - *Escherichia coli*

Level 3

Initial contamination: 8300 *Escherichia coli* per mL

Laboratories	Reference method (ISO 16649-2)													
	Sample 1							Sample 3						
	-1		-2		-3		Results (UFC/mL)	-1		-2		-3		Results (UFC/mL)
	Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2		Plate 1	Plate 2	Plate 1	Plate 2	Plate 1	Plate 2	
A	>150	>150	50	45	6	4	4800	>150	>150	46	42	8	3	4500
B	>150	>150	36	39	4	5	3800	>150	>150	39	35	3	4	3700
C	>150	>150	43	44	1	3	4100	>150	>150	45	39	5	5	4300
D	>150	>150	40	48	6	6	4500	>150	>150	48	50	6	3	4900
F	>150	>150	34	43	6	5	4000	>150	>150	46	58	7	7	5400
G	>150	>150	48	51	3	7	5000	>150	>150	51	55	2	4	5100
H	>150	>150	60	54	5	7	5700	>150	>150	47	44	3	4	4500
I	>150	>150	40	52	5	3	4500	>150	>150	43	46	5	4	4500
J	>150	>150	44	53	5	7	5000	>150	>150	29	39	3	4	3400
Expert laboratory	>150	>150	16	27	3	1	2100	>150	>150	34	40	7	4	3900

Laboratories	Alternative method (REBECCA + EB - blue to purple colonies)							
	Sample 1				Sample 3			
	-1	-2	-3	Results (UFC/mL)	-1	-2	-3	Results (UFC/mL)
A	>150	30	2	2900	>150	50	6	5100
B	>150	37	8	4100	>150	39	1	3600
C	>150	33	1	3100	>150	47	2	4500
D	>150	43	3	4200	>150	47	3	4500
F	>150	47	5	4700	>150	37	6	3900
G	>150	49	4	4800	>150	36	5	3700
H	>150	50	2	4700	>150	47	3	4500
I	>150	44	5	4500	>150	47	3	4500
J	>150	42	2	4000	>150	36	3	3500
Expert laboratory	>150	36	5	3700	>150	32	3	3200