



CERTIFICATION

AOAC[®] Performance TestedSM

Certificate No.

111703

The AOAC Research Institute hereby certifies the method known as:

Easy Plate SA

manufactured by

Kikkoman Biochemifa Company

2-1-1, Nishi-shinbashi

Minato-ku, Tokyo 105-0003

Japan

This method has been evaluated in the AOAC[®] Performance Tested MethodsSM Program and found to perform as stated by the manufacturer contingent to the comments contained in the manuscript. This certificate means that an AOAC[®] Certification Mark License Agreement has been executed which authorizes the manufacturer to display the AOAC Performance TestedSM certification mark along with the statement - "THIS METHOD'S PERFORMANCE WAS REVIEWED BY AOAC RESEARCH INSTITUTE AND WAS FOUND TO PERFORM TO THE MANUFACTURER'S SPECIFICATIONS" - on the above-mentioned method for a period of one calendar year from the date of this certificate (March 7, 2022 – December 31, 2022). Renewal may be granted at the end of one year under the rules stated in the licensing agreement.

Scott Coates

Scott Coates, Senior Director
Signature for AOAC Research Institute

March 17, 2022

Date

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METHOD NAME Easy Plate SA Formerly known as Medi-Ca SA	CATALOG NUMBER 61976	
INDEPENDENT LABORATORY Q Laboratories, Inc. 1400 Harrison Avenue Cincinnati, OH 45214 USA	AOAC EXPERTS AND PEER REVIEWERS Yi Chen ¹ , Yvonne Salfinger ² , Wayne Ziemer ³ ¹ US FDA CFSAN, College Park, MD, USA ² Consultant, Denver, CO, USA ³ Consultant, Loganville, GA, USA Modifications February 2020 and March 2022 reviewed internally by AOAC Research Institute.	
APPLICABILITY OF METHOD Target organisms – <i>Staphylococcus aureus</i>	REFERENCE METHOD AOAC Official Method SM 975.55, <i>Staphylococcus aureus</i> in Foods (2)	
Matrixes – raw beef, raw ground beef, raw lamb, cooked ham, raw salmon, frozen prawn, fresh chilled pasta, pasteurized milk, natural cheese, cream puff and potato salad		
Performance claims - Performance is comparable to that of the AOAC Official Methods SM 975.55, <i>Staphylococcus aureus</i> in Foods.		
ORIGINAL CERTIFICATION DATE November 15, 2017	CERTIFICATION RENEWAL RECORD New approval through December 2022.	
METHOD MODIFICATION RECORD <ol style="list-style-type: none"> 1. February 2020 Level 2 2. November 2020 Level 1 3. June 2021 Level 1 4. March 2022 Level 2 	SUMMARY OF MODIFICATION <ol style="list-style-type: none"> 1. Manufacturing location change from Tokyo, Japan to Kanagawa, Japan. 2. Editorial and formatting changes to insert. 3. Rebranded kit to reflect Kikkoman and method name change from Medi-Ca SA to Easy Plate SA. 4. Manufacturing location change. 	
Under this AOAC® Performance Tested SM License Number, 111703 this method is distributed by: <ol style="list-style-type: none"> 1. AS ONE Corporation 2. KENIS LIMITED 3. Nippon Bacterial Test CO., LTD. 4. FUJIFILM Wako Pure Chemical Corporation 5. Microgiene Co. LTD 6. Weber Scientific 7. ELMEX Limited 	Under this AOAC® Performance Tested SM License Number, 111703 this method is distributed as: <ol style="list-style-type: none"> 1. Easy Plate SA 2. Easy Plate SA 3. Easy Plate SA 4. Easy Plate SA 5. Easy Plate SA 6. Easy Plate SA 7. Easy Plate SA 	

PRINCIPLE OF THE METHOD (1)

Easy Plate SA (formerly Medi-Ca SA) is a ready-made dry medium for *Staphylococcus aureus* count made up of four components: a waterproof sheet, a dry medium containing a gelling agent and the chromogenic enzyme substrates, a hydrophobic resin ring surrounding the medium, and a transparent cover over the medium. A sample suspension is dispensed on the center of the medium while the cover is lifted. After that, the cover is gently dropped to evenly spread the suspension on the medium. The suspension rapidly soaks into the medium, which turns into a gel in 3 minutes. The incubation of the sheet at $35 \pm 1^\circ$ or $37 \pm 1^\circ\text{C}$ for 24 ± 1 h develops blue colonies for *S. aureus* because of the enzymatic reaction involving the substrate.

DISCUSSION OF THE VALIDATION STUDY (1)

In the exclusivity study, *S. gallinarum* (NBRC 109767), *B. cereus* (NBRC 13494, #D0068) and *B. licheniformis* (NBRC 12200) formed pink colony. The reason for this was that the type of enzyme produced from these strains was different from *S. aureus*. Those strains were easily distinguished from *S. aureus* by colony color. However, *S. schleiferi* (ATCC 43808) formed blue colony, which was the same as *S. aureus*. In this case, coagulase test is necessary to identify *S. aureus* or not. *S. schleiferi* showed negative coagulase reaction.

Some of the *S. aureus* related bacteria such as *Staphylococci* and *Bacillus* species grow in Baird-Parker medium. When testing the raw food matrixes, these colonies sometimes make enumeration of *S. aureus* difficult. In case of Medi-Ca SA method, the growth of these bacteria is inhibited, and *S. aureus* colony is stained clearly. Medi-Ca SA method does not need to confirm halo of colony.

In the matrix study, all matrixes were incubated at two temperatures, 35 or 37 ± 1°C. It was observed that the colony intensity was stronger at 37 °C than 35 °C for some of the matrixes. However, the number of colonies were almost the same at these two temperatures, and there were no significant differences.

Overall, it was generally observed that the Medi-Ca SA method produced statistically similar results when compared to the reference method. This rapid method makes it possible to simultaneously detect and enumerate *S. aureus* in only 24 hours, while the reference method requires 48 hours.

Table 1. Inclusivity Study (1)

Strain Name	Source	Origin	Medi-Ca SA ^a
1 <i>Staphylococcus aureus</i>	ATCC 6538 ^b	Human lesion	Blue
2 <i>Staphylococcus aureus</i>	ATCC 8095	Cream pie	Blue
3 <i>Staphylococcus aureus</i>	ATCC 9144	Unknown	Blue
4 <i>Staphylococcus aureus</i>	ATCC 13565	Ham	Blue
5 <i>Staphylococcus aureus</i>	ATCC 25904	Unknown	Blue
6 <i>Staphylococcus aureus</i>	ATCC 25923	Clinical isolate	Blue
7 <i>Staphylococcus aureus</i>	ATCC 27664	Chicken tetrazzini	Blue
8 <i>Staphylococcus aureus</i>	ATCC 33862	Unknown	Blue
9 <i>Staphylococcus aureus</i>	NBRC 12732 ^c	Unknown	Blue
10 <i>Staphylococcus aureus</i>	NBRC 13276	Human lesion	Blue
11 <i>Staphylococcus aureus</i>	NBRC 15035	Wound	Blue
12 <i>Staphylococcus aureus</i>	NBRC 100910	Human pleural fluid	Blue
13 <i>Staphylococcus aureus</i>	NCTC 10788 ^d	Human lesion	Blue
14 <i>Staphylococcus aureus</i>	#D0072 ^e	Ground beef and pork	Blue
15 <i>Staphylococcus aureus</i>	#D0075	Chicken	Blue
16 <i>Staphylococcus aureus</i>	#D0076	Chicken	Blue
17 <i>Staphylococcus aureus</i>	#D0088	Ground pork	Blue
18 <i>Staphylococcus aureus</i>	#D0106	Human skin	Blue
19 <i>Staphylococcus aureus</i>	#D0107	Human skin	Blue
20 <i>Staphylococcus aureus</i>	#D0108	Human skin	Blue
21 <i>Staphylococcus aureus</i>	#D0109	Human skin	Blue
22 <i>Staphylococcus aureus</i>	#D0112	Food poisoning	Blue
23 <i>Staphylococcus aureus</i>	#D0113	Food poisoning	Blue
24 <i>Staphylococcus aureus</i>	#D0116	Food poisoning	Blue
25 <i>Staphylococcus aureus</i>	#D0117	Food poisoning	Blue
26 <i>Staphylococcus aureus</i>	#D0118	Food poisoning	Blue
27 <i>Staphylococcus aureus</i>	#D0120	Food poisoning	Blue
28 <i>Staphylococcus aureus</i>	#D0121	Food poisoning	Blue
29 <i>Staphylococcus aureus</i>	#D0124	Food poisoning	Blue
30 <i>Staphylococcus aureus</i>	#D0125	Food poisoning	Blue
31 <i>Staphylococcus aureus</i>	#D0130	Food poisoning	Blue
32 <i>Staphylococcus aureus</i>	#D0131	Food poisoning	Blue
33 <i>Staphylococcus aureus</i>	#D0133	Food poisoning	Blue
34 <i>Staphylococcus aureus</i>	#D0134	Food poisoning	Blue
35 <i>Staphylococcus aureus</i>	#D0135	Food poisoning	Blue
36 <i>Staphylococcus aureus</i>	#D0138	Food poisoning	Blue
37 <i>Staphylococcus aureus</i>	#D0151	Milk	Blue
38 <i>Staphylococcus aureus</i>	#D0152	Milk	Blue
39 <i>Staphylococcus aureus</i>	#D0153	Milk	Blue
40 <i>Staphylococcus aureus</i>	#D0154	Milk	Blue
41 <i>Staphylococcus aureus</i>	#D0156	Milk	Blue
42 <i>Staphylococcus aureus</i>	#D0182	Ground pork	Blue
43 <i>Staphylococcus aureus</i>	#D0183	Ground pork	Blue
44 <i>Staphylococcus aureus</i>	#D0185	Chicken	Blue
45 <i>Staphylococcus aureus</i>	#D0206	Unknown	Blue
46 <i>Staphylococcus aureus</i>	#D0207	Unknown	Blue
47 <i>Staphylococcus aureus</i>	#D0208	Pork	Blue
48 <i>Staphylococcus aureus</i>	#D0209	Pork	Blue
49 <i>Staphylococcus aureus</i>	#D0210	Pork	Blue
50 <i>Staphylococcus aureus</i>	#D0211	Pork	Blue
51 <i>Staphylococcus aureus</i>	#D0216	Food	Blue
52 <i>Staphylococcus aureus</i>	#D0217	Food	Blue

^a Colony color.

^b American Type Culture Collection, Manassas, VA.

^c Biological Resource Center, National Institute of Technology and Evaluation, Chiba, Japan.

^d National Collection of Type Cultures, a Culture Collection of Public Health England, Salisbury, UK

^e Numbers starting with #D indicates strains that were isolated by Dai Nippon Printing Co., Ltd.

Table 2. Exclusivity Study (1)

	Strain Name	Source	Origin	Medi•Ca SA ^a
1	<i>Staphylococcus auricularis</i>	ATCC 33753 ^b	External auditory meatus	-
2	<i>Staphylococcus capitis</i>	ATCC 27840	Human skin	-
3	<i>Staphylococcus caprae</i>	ATCC 35538	Goat milk	-
4	<i>Staphylococcus carnosus</i>	NBRC 109622 ^c	Dry sausage	-
5	<i>Staphylococcus carnosus</i>	#D0086 ^d	Roast beef	-
6	<i>Staphylococcus cohnii</i>	NBRC 109713	Human skin	-
7	<i>Staphylococcus epidermidis</i>	NBRC 12993	Unknown	-
8	<i>Staphylococcus epidermidis</i>	NBRC 100911	Nose	-
9	<i>Staphylococcus gallinarum</i>	NBRC 109767	Chicken nares	Pink
10	<i>Staphylococcus</i> sp.	#D0058	Ground beef and pork	-
11	<i>Staphylococcus haemolyticus</i>	NBRC 109768	Human skin	-
12	<i>Staphylococcus hominis</i>	ATCC 700586	Blood	-
13	<i>Staphylococcus hyicus</i>	ATCC 11249	Pig with exudative epidermitis	-
14	<i>Staphylococcus intermedius</i>	ATCC 29663	Pigeon nares	-
15	<i>Staphylococcus lentus</i>	ATCC 29070	Goat udder	-
16	<i>Staphylococcus saprophyticus</i>	NBRC 102446	Urine	-
17	<i>Staphylococcus schleiferi</i>	ATCC 43808	Jugular catheter	Blue
18	<i>Staphylococcus sciuri</i>	ATCC 29062	Eastern gray squirrel skin	-
19	<i>Staphylococcus simulans</i>	NBRC 109714	Human skin	-
20	<i>Staphylococcus warneri</i>	NBRC 109769	Human skin	-
21	<i>Staphylococcus xylosum</i>	NBRC 109770	Human skin	-
22	<i>Bacillus circulans</i>	NBRC 13626	Soil	-
23	<i>Bacillus cereus</i>	NBRC 3836	Unknown	-
24	<i>Bacillus cereus</i>	NBRC 15305	Unknown	-
25	<i>Bacillus cereus</i>	NBRC 13494	Unknown	Pink
26	<i>Bacillus cereus</i>	#D0068	Food powder	Pink
27	<i>Bacillus licheniformis</i>	NBRC 12200	Unknown	Pink
28	<i>Bacillus subtilis</i>	NBRC 3134	Unknown	-
29	<i>Bacillus thuringiensis</i>	NBRC 3951	Unknown	-
30	<i>Bacillus pumilus</i>	NBRC 12092	Unknown	-
31	<i>Enterococcus faecalis</i>	NBRC 100481	Unknown	-
32	<i>Enterococcus faecalis</i>	ATCC 29212	Urine	-
33	<i>Enterococcus faecium</i>	NBRC 100486	Unknown	-
34	<i>Leuconostoc mesenteroides</i>	NBRC 3426	Unknown	-
35	<i>Macrocococcus caseolyticus</i>	ATCC 13548	Dairy products	-
36	<i>Macrocococcus caseolyticus</i>	#D0073	Ground beef	-
37	<i>Microcococcus luteus</i>	NBRC 3333	Unknown	-
38	<i>Aeromonas hydrophila</i>	NBRC 12658	Unknown	-
39	<i>Citrobacter freundii</i>	ATCC 8090	Unknown	-
40	<i>Enterobacter aerogenes</i>	NBRC 13534	Sputum	-
41	<i>Enterobacter cloacae</i>	NBRC 13535	Spinal fluid	-
42	<i>Escherichia coli</i>	NBRC 3972	Feces	-
43	<i>Escherichia coli</i>	NBRC 102203	Urine	-
44	<i>Escherichia coli</i>	ATCC 25922	Clinical isolate	-
45	<i>Klebsiella oxytoca</i>	NBRC 105695	Pharyngeal tonsil	-
46	<i>Klebsiella pneumoniae</i>	ATCC 13883	Unknown	-
47	<i>Kluyvera cryocrescens</i>	NBRC 102467	Kitchen food	-
48	<i>Proteus mirabilis</i>	NBRC 105697	Unknown	-
49	<i>Pseudomonas aeruginosa</i>	NBRC 3899	Well water	-
50	<i>Pseudomonas aeruginosa</i>	ATCC 9027	Outer ear infection	-
51	<i>Salmonella enterica</i>	NBRC 105726	Human feces	-
52	<i>Serratia marcescens</i>	NBRC 102204	Pond water	-
53	<i>Aspergillus niger</i>	NBRC 33023	Tannin gallic acid fermentation	-
54	<i>Candida albicans</i>	NBRC 1594	Clinical bronchomycosis	-
55	<i>Saccharomyces cerevisiae</i>	NBRC 10217	Brewer's top yeast	-

^a Colony color, - = not detected.^b American Type Culture Collection, Manassas, VA.^c Biological Resource Center, National Institute of Technology and Evaluation.^d Numbers starting with #D indicates strains that were isolated by Dai Nippon Printing Co., Ltd.

Table 3. Matrix Study: Easy Plate SA vs. AOAC 975.55 – 35°C (1)

Matrix	Inoculation Micoorganism	Contamination Level	35°C										
			Medi-Ca SA			Baird-Parker			Mean Difference	95% CI ^d		r ^{2g}	
			Mean ^a	s _r ^b	RSD _r ^c	Mean	s _r	RSD _r		LCL ^e	UCL ^f		
Cooked ham	<i>Staphylococcus aureus</i> D0109	Uninoculated	<1.00			<1.00							
		Low	2.56	0.05	1.90	2.70	0.07	2.42	0.15	0.06	0.23		
		Medium	3.53	0.05	1.35	3.65	0.07	1.95	0.13	0.04	0.22	0.99	
		High	4.48	0.06	1.24	4.70	0.04	0.90	0.22	0.13	0.32		
Cream puff	<i>Staphylococcus aureus</i> ATCC 8095	Uninoculated	<1.00			<1.00							
		Low	2.05	0.07	3.29	2.11	0.13	6.21	0.06	-0.12	0.24		
		Medium	2.95	0.04	1.30	3.07	0.07	2.13	0.12	0.01	0.23	0.99	
		High	3.96	0.05	1.33	4.10	0.02	0.59	0.14	0.08	0.21		
Fresh chilled pasta	<i>Staphylococcus aureus</i> NBRC 100910	Uninoculated	<1.00			<1.00							
		Low	3.16	0.04	1.36	3.16	0.02	0.75	0.00	-0.04	0.04		
		Medium	3.88	0.06	1.41	4.01	0.05	1.36	0.13	0.02	0.23	0.99	
		High	4.86	0.07	1.33	4.96	0.01	0.17	0.11	0.03	0.18		
Frozen prawn	<i>Staphylococcus aureus</i> NBRC 13276	Uninoculated	<1.00			<1.00							
		Low	2.93	0.04	1.45	3.10	0.06	1.93	0.17	0.10	0.25		
		Medium	4.14	0.09	2.25	4.21	0.05	1.17	0.07	-0.06	0.20	0.99	
		High	4.95	0.03	0.50	5.05	0.08	1.58	0.10	-0.03	0.23		
Natural cheese	<i>Staphylococcus aureus</i> ATCC 25923	Uninoculated	<1.00			<1.00							
		Low	2.45	0.07	3.01	2.61	0.14	5.37	0.16	-0.03	0.34		
		Medium	3.36	0.08	2.42	3.46	0.05	1.41	0.10	0.01	0.20	0.99	
		High	5.07	0.04	0.79	5.27	0.04	0.69	0.19	0.15	0.23		
Natural cheese ^h	<i>Staphylococcus aureus</i> ATCC 25923	Uninoculated	<1.00			<1.00							
		Low	1.60	0.17	10.63	1.74	0.07	3.86	0.25	-0.50	0.00		
		Medium	2.53	0.03	1.14	2.48	0.06	2.41	0.06	-0.15	0.03	0.98	
		High	3.56	0.04	1.12	3.50	0.03	0.91	0.05	-0.12	0.03		
Pasteurized milk	<i>Staphylococcus aureus</i> D0152	Uninoculated	<1.00			<1.00							
		Low	2.87	0.03	1.01	3.08	0.05	1.74	0.21	0.12	0.29		
		Medium	3.82	0.04	0.96	4.08	0.07	1.61	0.26	0.18	0.34	1.00	
		High	5.14	0.02	0.45	5.38	0.03	0.58	0.24	0.19	0.29		
Potato salad	<i>Staphylococcus aureus</i> D0138	Uninoculated	<1.00			<1.00							
		Low	2.65	0.04	1.65	2.81	0.04	1.52	0.17	0.09	0.24		
		Medium	4.27	0.02	0.53	4.38	0.04	0.93	0.11	0.05	0.18	1.00	
		High	5.07	0.04	0.79	5.27	0.04	0.69	0.19	0.15	0.23		
Raw beef	<i>Staphylococcus aureus</i> NBRC 15035	Uninoculated	<1.00			<1.00							
		Low	2.03	0.09	4.21	1.99	0.20	10.1	0.04	-0.30	0.21		
		Medium	3.05	0.06	2.07	3.04	0.03	0.95	0.01	-0.10	0.08	0.98	
		High	3.87	0.04	1.03	3.91	0.04	0.89	0.09	0.00	0.17		
Raw beef ^h	<i>Staphylococcus aureus</i> ATCC 12600	Uninoculated	<1.00			<1.00							
		Low	2.76	0.04	1.50	2.68	0.07	2.57	0.08	-0.13	-0.04		
		Medium	3.66	0.09	2.32	3.57	0.06	1.80	0.09	-0.20	0.02	0.99	
		High	4.56	0.05	0.99	4.52	0.08	1.71	0.05	-0.12	0.03		
Raw ground beef ^h	<i>Staphylococcus aureus</i> ATCC 29213	Uninoculated	<1.00			<1.00							
		Low	2.15	0.12	5.79	2.05	0.12	5.70	0.11	-0.01	0.23		
		Medium	3.30	0.04	1.20	3.23	0.14	4.42	0.07	-0.12	0.27	0.99	
		High	4.23	0.08	1.93	4.20	0.08	1.89	0.04	-0.81	0.21		
Raw lamb	<i>Staphylococcus aureus</i> ATCC 12600	Uninoculated	<1.00			<1.00							
		Low	2.85	0.04	1.49	2.89	0.05	1.69	0.04	-0.06	0.15		
		Medium	3.79	0.04	0.93	3.86	0.04	1.08	0.07	0.04	0.10	1.00	

		High	4.69	0.02	0.47	4.82	0.05	1.12	0.14	0.07	0.21	
Raw salmon	<i>Staphylococcus aureus</i> D0076	Uninoculated	<1.00			<1.00						
		Low	2.34	0.05	1.98	2.36	0.11	4.72	0.02	-0.08	0.12	
		Medium	3.48	0.06	1.76	3.43	0.05	1.43	0.05	-0.10	0.01	0.99
		High	4.73	0.04	0.90	4.80	0.07	1.48	0.08	0.00	0.15	

^a Mean of 5 replicates after the logarithmic transformation: $\text{Log}_{10}[\text{CFU/g} + (0.1)\text{f}]$.

^b s_r = standard deviation.

^c RSD_r = relative standard deviation.

^d CI = confidence interval.

^e LCL = lower confidence limit.

^f UCL = upper confidence limit.

^g r^2 = square of the correlation coefficient.

^h Matrix study conducted by the independent laboratory.

Table 4. Matrix Study: Easy Plate SA vs. AOAC 975.55 – 37°C (1)

Matrix	Inoculation Micoorganism	Contamination Level	37°C									
			Medi-Ca SA			Baird-Parker			Mean Difference	95% CI ^d		r^2 ^g
			Mean ^a	s_r ^b	RSD_r ^c	Mean	s_r	RSD_r		LCL ^e	UCL ^f	
Cooked ham	<i>Staphylococcus aureus</i> D0109	Uninoculated	<1.00			<1.00						
		Low	2.49	0.08	3.25	2.74	0.08	2.96	0.25	0.09	0.40	0.98
		Medium	3.57	0.07	1.90	3.66	0.03	0.81	0.09	-0.02	0.19	
		High	4.48	0.03	0.57	4.69	0.07	1.40	0.21	0.12	0.30	
Cream puff	<i>Staphylococcus aureus</i> ATCC 8095	Uninoculated	<1.00			<1.00						
		Low	2.02	0.07	3.58	2.15	0.13	6.12	0.13	-0.05	0.31	0.99
		Medium	2.97	0.05	1.62	3.10	0.04	1.14	0.14	0.04	0.23	
		High	3.97	0.05	1.21	4.12	0.03	0.78	0.15	0.10	0.20	
Fresh chilled pasta	<i>Staphylococcus aureus</i> NBRC 100910	Uninoculated	<1.00			<1.00						
		Low	3.18	0.04	1.21	3.12	0.04	1.31	0.06	-0.12	0.01	0.99
		Medium	3.93	0.04	1.08	4.05	0.06	1.54	0.12	0.01	0.24	
		High	4.76	0.10	2.01	4.93	0.03	0.67	0.17	0.06	0.29	
Frozen prawn	<i>Staphylococcus aureus</i> NBRC 13276	Uninoculated	<1.00			<1.00						
		Low	3.06	0.05	1.65	3.07	0.05	1.55	0.00	-0.08	0.09	0.99
		Medium	4.19	0.03	0.70	4.22	0.05	1.18	0.02	-0.03	0.07	
		High	4.96	0.08	1.53	5.06	0.05	0.97	0.10	-0.04	0.23	
Natural cheese	<i>Staphylococcus aureus</i> ATCC 25923	Uninoculated	<1.00			<1.00						
		Low	2.47	0.07	3.02	2.57	0.09	3.56	0.10	-0.02	0.22	0.98
		Medium	3.32	0.12	3.47	3.36	0.10	2.97	0.04	-0.20	0.28	
		High	4.60	0.04	0.77	4.81	0.06	1.14	0.21	0.16	0.27	
Natural cheese ^h	<i>Staphylococcus aureus</i> ATCC 25923	Uninoculated	<1.00			<1.00						
		Low	1.61	0.12	7.55	1.74	0.07	3.86	0.23	-0.43	-0.02	0.98
		Medium	2.59	0.03	1.05	2.49	0.06	2.40	0.02	-0.05	0.12	
		High	3.59	0.04	1.02	3.51	0.03	0.87	0.00	-0.08	0.08	
Pasteurized milk	<i>Staphylococcus aureus</i> D0152	Uninoculated	<1.00			<1.00						
		Low	2.84	0.07	2.60	3.06	0.04	1.45	0.22	0.11	0.33	0.99
		Medium	3.84	0.06	1.44	4.06	0.03	0.64	0.23	0.17	0.29	
		High	5.06	0.06	1.23	5.39	0.04	0.65	0.33	0.22	0.44	
Potato salad	<i>Staphylococcus aureus</i> D0138	Uninoculated	<1.00			<1.00						
		Low	2.66	0.07	2.50	2.86	0.06	2.02	0.20	0.13	0.27	0.99
		Medium	4.29	0.01	0.33	4.33	0.05	1.21	0.04	-0.02	0.09	
		High	5.09	0.04	0.80	5.30	0.04	0.83	0.21	0.13	0.30	

Raw beef	<i>Staphylococcus aureus</i> NBRC 15035	Uninoculated	<1.00			<1.00						
		Low	1.91	0.16	8.12	2.03	0.07	3.55	0.13	-0.07	0.32	
		Medium	3.06	0.04	1.30	3.05	0.02	0.66	0.01	-0.08	0.06	0.98
		High	3.85	0.06	1.62	3.87	0.03	0.78	0.02	-0.08	0.12	
Raw beef ^h	<i>Staphylococcus aureus</i> ATCC 12600	Uninoculated	<1.00			<1.00						
		Low	2.73	0.04	1.48	2.68	0.07	2.57	0.05	-0.17	0.07	
		Medium	3.68	0.09	2.39	3.57	0.06	1.80	0.11	-0.20	-0.03	0.99
		High	4.63	0.03	0.59	4.52	0.08	1.71	0.12	-0.22	-0.01	
Raw ground beef ^h	<i>Staphylococcus aureus</i> ATCC 29213	Uninoculated	<1.00			<1.00						
		Low	2.20	0.15	6.73	2.09	0.11	5.07	0.16	0.00	0.32	
		Medium	3.29	0.05	1.51	3.26	0.13	4.07	0.06	-0.11	0.23	0.99
		High	4.26	0.04	0.97	4.21	0.08	1.82	0.06	-0.08	0.21	
Raw lamb	<i>Staphylococcus aureus</i> ATCC 12600	Uninoculated	<1.00			<1.00						
		Low	2.87	0.02	0.72	2.91	0.03	1.10	0.04	0.01	0.07	
		Medium	3.81	0.05	1.34	3.86	0.06	1.54	0.04	-0.08	0.16	0.99
		High	4.68	0.09	1.91	4.73	0.04	0.90	0.05	-0.11	0.21	
Raw salmon	<i>Staphylococcus aureus</i> D0076	Uninoculated	<1.00			<1.00						
		Low	2.35	0.05	2.07	2.36	0.06	2.48	0.01	-0.07	0.09	
		Medium	3.42	0.06	1.68	3.38	0.06	1.72	0.05	-0.12	0.03	1.00
		High	4.73	0.05	1.03	4.80	0.01	0.19	0.07	0.01	0.13	

^a Mean of 5 replicates after the logarithmic transformation: $\text{Log}_{10}[\text{CFU/g} + (0.1)^f]$.

^b s_r = standard deviation.

^c RSD_r = relative standard deviation.

^d CI = confidence interval.

^e LCL = lower confidence limit.

^f UCL = upper confidence limit.

^g r^2 = square of the correlation coefficient.

^h Matrix study conducted by the independent laboratory.

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