

Sanitation Standard for Microorganisms in Foods

MOHW Food No. 1091302247 Announced, 6 October 2020

Article 1

This standard is prescribed in accordance with the provisions of Article 17 of the Act Governing Food Safety and Sanitation (herein referred to as "this Act").

Article 2

The scopes of this standard include food microorganisms and their toxins or metabolites, but do not include fungi and mycotoxins.

Article 3

The limits for food microorganisms and their toxins or metabolites shall meet the requirements in the table in Annex.

Article 4

Non-compliant under the jurisdiction of subparagraphs 4 of paragraph 1 of Article 15 of this Act and Article 6 of Rules for the Implementation of this Act, shall be sanctioned in accordance with violating Article 15 of this Act.

Article 5

This standard shall be implemented from July 1, 2021.

Annex

1. Milk and dairy products					
Food category	Microorganisms and their toxins or metabolites	Sampling plan		Limits	
		n	c	m	M
1.1 Milk, flavored milk and milk drink	Enterobacteriaceae	5	0	10 CFU/mL (g)	
1.2 Milk powder, flavored milk powder and whey powder as raw material for food processing.	<i>Salmonella</i>	5	0	Not detected	
1.3 Fermented milk	<i>Listeria monocytogenes</i>	5	0	Not detected	
1.4 Condensed milk, except of canned condensed milk listed in 1.6	Staphylococcal enterotoxins	5	0	Not detected	
1.5 Cheese, butter and cream	<i>Escherichia coli</i>	5	2	10 MPN/g (mL)	100 MPN/g (mL)
	<i>Salmonella</i>	5	0	Not detected	
	<i>Listeria monocytogenes</i>	5	0	Not detected	
	Staphylococcal enterotoxins	5	0	Not detected	
1.6 Canned food ¹ : Sterilized milk, sterilized flavored milk, sterilized milk drink and condensed milk	Passes inspection by incubation test (37°C for 10 days): Shall not show sign of swelling, transform or abnormal pH value causing by growth of microorganisms.				
2. Infant foods ²					
Food category	Microorganisms and their toxins or metabolites	Sampling plan		Limits	
		n	c	m	M
2.1 Infant formula	Enterobacteriaceae	10	0	10 CFU/g (mL)	
2.2 Follow-up infant formula	<i>Salmonella</i>	10	0	Not detected	
2.3 Infant formula for special medical purposes	<i>Listeria monocytogenes</i>	10	0	Not detected	
	<i>Cronobacter</i> spp. ; <i>Enterobacter sakazakii</i> ³	10	0	Not detected	
2.4 Other infant food ⁴ , except list in 2.5	Coliform	5	2	Not detected	10 MPN/g

				(mL)
	<i>Salmonella</i>	5	0	Not detected
	<i>Listeria monocytogenes</i>	5	0	Not detected
2.5 Canned food ¹ : Other ready-to-eat canned infant foods. For example, the ready-to-feed liquid infant formula, meat puree, fruit puree, vegetable puree.	Passes inspection by incubation test (37°C for 10 days): Shall not show sign of swelling, transform or abnormal pH value causing by growth of microorganisms.			
3. Raw ready-to-eat foods ⁵ and ready-to-eat foods contain both raw and processed food ingredient at once ⁶				
Food category	Microorganisms and their toxins or metabolites	Limits		
3.1 Raw ready-to-eat aquatic products	<i>Salmonella</i>	Not detected		
3.2 Ready-to-eat foods contain both raw aquatic products and processed food ingredient at once	<i>Vibrio parahaemolyticus</i>	100 MPN/g		
	<i>Listeria monocytogenes</i>	Not detected		
3.3 Fresh/raw ready-to-eat fruit and vegetables	<i>Escherichia coli</i>	10 MPN/g		
3.4 Ready-to-eat foods contain both fresh/raw fruit or vegetables and processed food ingredient at once	<i>Escherichia coli</i> O157:H7 ⁷	Not detected		
	<i>Salmonella</i>	Not detected		
	<i>Listeria monocytogenes</i>	Not detected		
3.5 Ready-to-eat not fully cooked eggs, and ready-to-eat foods that contain not fully cooked eggs	<i>Salmonella</i>	Not detected		
4. Packaged/containerized drinking water and beverage				
Food category	Microorganisms and their toxins or metabolites	Limits		
4.1 Packaged drinking water and containerized drinking water	Coliform	Not detected		
	Fecal Streptococci	Not detected		
	<i>Pseudomonas</i>	Not detected		

	<i>aeruginosa</i>	
4.2 Carbonated beverages, for example, the soft drinks, cola and other sugary carbonated beverages	Enterobacteriaceae	Not detected
4.3 Reconstituted fruit and vegetable juices, fruit and vegetable juice drinks, puree ⁸ and other similar, except listed in 4.7, 4.8	Enterobacteriaceae	Not detected
4.4 Beverages containing coffee, cocoa, tea or cereals, legumes and other food materials, except listed in 4.7, 4.8		
4.5 Unpasteurized fresh fruit and vegetable juices. Unpasteurized fresh fruit and vegetable juices containing milk less than 50%	<i>Escherichia coli</i>	10 MPN/mL
	<i>Escherichia coli</i> O157:H7 ⁷	Not detected
	<i>Salmonella</i>	Not detected
4.6 Fermented fruit and vegetable juice, flavored acidic beverages containing lactic acid or fermentation broth (contain active probiotics) , except listed in 4.7	Enterobacteriaceae	Not detected
4.7 Beverages that is made on the spot, unpasteurized, and the shelf-life less than 24 hours, except listed in 4.5	Enterobacteriaceae	10 CFU/mL
	<i>Salmonella</i>	Not detected
4.8 Canned foods ¹ : Canned beverages	Passes inspection by incubation test (37°C for 10 days): Shall not show sign of swelling, transform or abnormal pH value causing by growth of micro-organisms.	

5. Frozen foods and ice products		
Food category	Microorganisms and their toxins or metabolites	Limits
5.1 Ice cubes, food grade	Enterobacteriaceae	10 CFU/g (mL)
5.2 Frozen ready-to-eat foods ⁵ , include: -Ice products include ice cream, gelato, popsicle, shaved ice, sundaes, sorbet, smoothie etc. -Frozen fruits		
5.3 Frozen cooked ⁹ foods, may provide ready-to-eat after thawing or re-heat, except listed in 5.6, include: -Frozen cooked vegetables	<i>Salmonella</i>	Not detected
5.4 Frozen non ready-to-eat foods -Frozen food that must be cooked ⁹ before provide. -Frozen raw aquatic products that not provide ready-to-eat.	<i>Escherichia coli</i>	50 MPN/g
5.5 Frozen raw aquatic products that provide ready-to-eat.	<i>Salmonella</i>	Not detected
	<i>Vibrio parahaemolyticus</i>	100 MPN/g
5.6 Frozen cooked ⁹ aquatic products, may provide ready-to-eat after thawing or re-heat.	<i>Salmonella</i>	Not detected
	<i>Vibrio parahaemolyticus</i>	Not detected
6. Other ready-to-eat foods		
Food category	Microorganisms and their toxins or metabolites	Limits

6.1 Foods that can eat after rehydration list other than food category 1 to 5.	<i>Staphylococcus aureus</i>	100 CFU/g (mL)
6.2 Ready-to-eat foods that stored at hot holding or room temperature list other than food category 1 to 5.		
6.3 Ready-to-eat foods that stored at refrigeration or below room temperature list other than food category 1 to 5, include: -Ready-to-eat foods that stored at refrigeration or below room temperature, can re-heat before eat. For example, 18°C delicatessen. -dessert, sauces etc.	<i>Salmonella</i>	Not detected
	<i>Listeria monocytogenes</i> ¹⁰	100 CFU/g (mL)
6.4 Canned foods ² list other than food category 1 to 5.	Passes inspection by incubation test (37°C for 10 days): Shall not show sign of swelling, transform or abnormal pH value causing by growth of micro-organisms.	
7. Liquid eggs ¹¹		
Food category	Microorganisms and their toxins or metabolites	Limits
7.1 Pasteurized liquid eggs (refrigeration or freezing)	<i>Salmonella</i>	Not detected
7.2 Unpasteurized liquid eggs (refrigeration or freezing)	Total plate count	10 ⁶ CFU/g
Note.		
1. The meaning of the symbol in the "sampling plan" and “Limits”: “n” means number of units comprising the sample. “c” means number of sample units giving values between m and M.		

“m” means a microbiological limit that acceptable quality.

“M” means a microbiological limit above which sampling results are unacceptable.

2. The detected results allowable between m and M from $\leq c$ sample quantity.
Unacceptable $> M$ for any sample.

3. If "m=M", means unacceptable $> m$ or M for any sample.

¹ Canned food here refers to those canned food meet the commercial sterility requirements in Regulations on Good Hygiene Practice for Foods.

² Infant food referred to in this table means the food sold exclusively for infants less than 12 months of age.

³ The test item of *Cronobacter* spp. (*Enterobacter sakazakii*) here, just applicable food sold exclusively for infants less than 6 months of age.

⁴ Other infant foods mean other foods sold exclusively for infants less than 12 months of age, include cereal-based foods, milk-based drinks and similar products.

⁵ Means food intended by the producer or the manufacturer for direct human consumption without the need for cooking or other processing effective to eliminate or reduce to an acceptable level the microorganisms of concern.

⁶ Ready-to-eat foods contain raw aquatic products, fresh/raw fruit and vegetables, and eggs not fully cooked, must merge all related inspection items.

⁷ *Escherichia coli* test results if negative, do not need to test *Escherichia coli* O157:H7.

⁸ Fruit juice syrup (which contain reconstituted fruit juices or natural fruit juices above 50%, sugary and total soluble solids above 50° Brix , must be diluted drink) not applicable.

⁹ “Cooked” means the conditions for product heating must be sufficient and can ensure that the product can fit for consumption.

¹⁰ “Ready-to-eat food unable to support the growth of *Listeria monocytogenes*” is not required to be tested for *L. monocytogenes*, including that with following conditions:

(1) a pH less than 4.4;

(2) a water activity (A_w) less than 0.92;

(3) a combination of factors (pH, A_w), e.g. the combination of pH less than 5.0 with A_w of less than 0.94.

(4) Add inhibitors that inhibit the growth of *Listeria monocytogenes*, and relevant scientific evidence can be presented.

The sugar, honey, confectionery (including cocoa and chocolate products) and

food grade salt which meets one of the above conditions, no need to test *L. monocytogenes*.

¹¹ The raw materials of liquid eggs shall meet the “Act Governing Food Safety and Sanitation”, and meet one of the following conditions:

- (1) The egg shell is intact without crack;
- (2) The egg shell is damaged but the shell membrane is intact, without egg shell surface contamination and contents leakage.