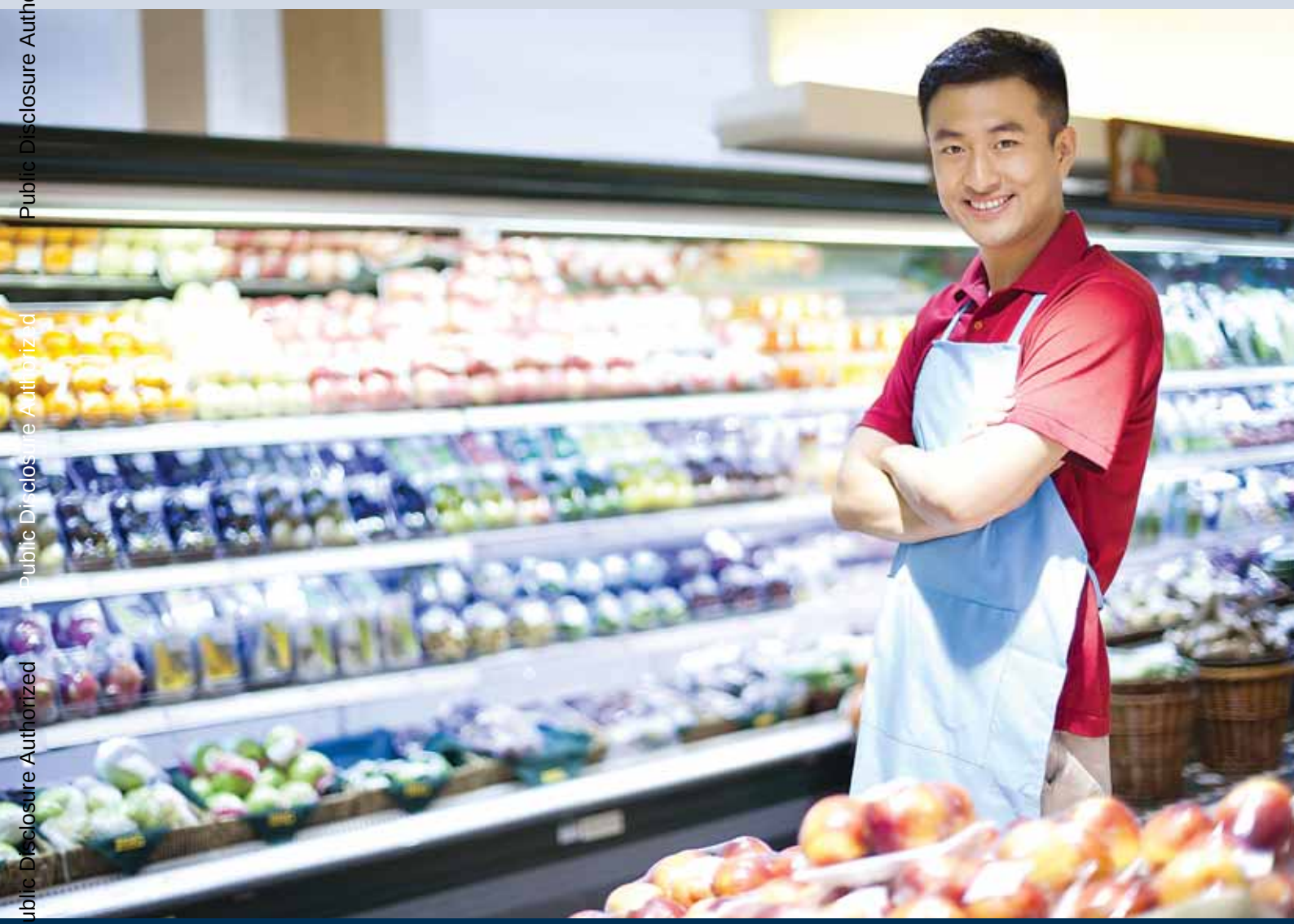

Comparison of Microbiological Criteria in Food Products in the EU and China

In partnership with:

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Foreword

Dear Readers,

I am pleased to introduce the publication *Comparison of microbiological criteria in food products in the EU and the PRC*, prepared in cooperation with the World Bank Group project Ukraine Investment Climate Reform.

The idea behind this publication arose during discussions related to Ukraine's preparation for inspection missions from the European Union and the People's Republic of China. The publication became part of the work that contributed, and hopefully will further contribute to, the opening of new markets for Ukrainian food products.

This publication is the result of the hard work of experts dealing with issues of food safety and international trade. Its purpose is to create a directory to help businesses, and our state, bring national food products to new markets. I am very pleased that experts from the State Service of Ukraine for Food Safety and Consumer Protection participated in the preparation of the publication, which resulted in this excellent practical guide.

The publication is part of a series of publications that aim to inform food manufacturers about the requirements of the European Union, the People's Republic of China, and other countries with potential markets.

The first publication highlights the common and distinctive features of the food safety systems in the European Union and the Eurasian Economic Union, and includes a comparative analysis of them. It is available on the World Bank's official website.[1]

[1] http://documents.worldbank.org/curated/en/973611467993504462/pdf/98140-RUSSIAN-REPLACEMENT-WP-PUBLIC-Box385193B.pdf

It is no coincidence that for the next publication, a comparison of microbiological criteria in the European Union and the People's Republic of China was selected. There is demand in EU countries and in the People's Republic of China for Ukrainian food products. Consequently, Ukrainian food producers will find new, loyal consumers and will be able to increase their exports.

This will be a win-win situation.

Growth in such trade relations will meet the interests of all stakeholders — the state, business and, most importantly, consumers. Mandatory safety requirements for foodstuffs for the European and Chinese markets are very high to ensure maximum protection of consumer health. As more national food producers follow best global practices, for example, by introducing HACCP and the traceability system — which provides rapid notification of unsafe food and their recall from the market — the more secure consumers will be in our country.

Yours sincerely,

Head of the State Service of Ukraine
for Food Safety and Consumer Protection

Volodymyr Lapa

Foreword

Dear Readers,

I am delighted to present you this Guidebook. Its main purpose is to help food business operators to access the EU and Chinese markets by providing invaluable information about specific requirements for microbiological criteria for foodstuff in the aforementioned countries.

Knowledge of the specific requirements of trading partners is of paramount importance for companies that aspire to open new export markets and to reach new consumers.

The comparison of microbiological criteria of food products offered by the Guidebook reflects cases of similarities and differences in the EU and Chinese requirements. The Guidebook is developed in a reader-friendly manner. It provides details of the parameters that producers must test when planning to export their products to the EU and China.

I believe potential exporters and relevant state authorities will find this document useful and it will serve them as a basis for further analysis of food related requirements in the EU and China.

Lisa Kaestner,

Practice Manager, Europe and Central Asia
World Bank Group

Acknowledgments

The World Bank Group project *Ukraine Investment Climate Reform* thanks the Swiss Development Agency (SECO) for its support in preparing the publication *Comparison of microbiological criteria in food products in the EU and China.*

A number of experts with significant experience in food safety and international trade relations were involved in the preparation of this publication.

This publication grew out of working discussions between the World Bank Group project Ukraine Investment Climate Reform, the State Service of Ukraine for Food Safety and Consumers Protection, and private sector representatives. We are pleased to note that the Ministry of Agrarian Policy and Food of Ukraine was strongly supportive of this effort.

Kateryna Onul, Adviser on Food Legislation (WBG), was responsible for the overall development of the document. Creation of this publication would have been impossible without the professional expertise of Vasyl Gamianin, consultant to the World Bank Group project Ukraine Investment Climate Reform.

We also thank Eugene Osmochescu, Heinz Strubenhoff, Zhanna Pastovenska, Vitalii Bashynsky and Yurii Zvazhenko for their support in preparing this publication.

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Explanatory note to the publication

The purpose of this guideline is to compare a range of food safety indicators and hygiene criteria for food production in the European Union (the EU) and the People's Republic of China (the PRC).[1]

This will be useful to food business operators who plan to export food to the PRC or the EU, as it will allow them to:

1) identify differences in requirements to the content of pathogenic microorganisms in different categories of food products;
2) familiarize themselves with the rules of sampling;
3) identify differences in the lists of target categories of food products in the PRC and the EU;
4) see differences in approaches to norms setting for specific items;
5) learn about other differences between European and Chinese approaches and techniques related to food safety at different stages of production.

We hope that the information provided in this directory will facilitate entry of national producers and exporters of food products into the markets of the PRC and the EU.

Methodologically, the directory is based on official documents of the EU and the PRC. Specifically, the EU Commission Regulation No. 2073/2005 dated 15 November 2005 (hereinafter referred to as Regulation No. 2073/2005), which sets the microbiological criteria for food products in the EU, and national standards of the People's Republic of China (documents of GB series), were subject to consideration and comparison.

Unlike the EU, the PRC does not have a single normative document setting microbiological criteria for all categories of food products, as done in EU legislation under Regulation No. 2073/2005. Instead, the PRC has a number of documents for various categories of food products. These documents were adopted at different times beginning in 2010. They are updated and supplemented on a regular basis due to the continuous improvement of the Chinese food safety control system and its compliance with international standards, as well as the requirements of the EU, the United States, Canada, Australia, New Zealand, Japan, SAR Siangan (Hong Kong) and Taiwan.

The basic document of the PRC setting the maximum permissible levels of pathogenic microorganisms in food products is the national standard of the PRC GB 29921-2013, which entered into force on July 1, 2014 (hereinafter referred to as GB 29921).

GB 29921 is a general standard and applies to pre-packaged foods. In cases where there are differences in criteria between those in GB 29921 and other PRC standards, the requirements of GB 29921 must be applied.

It should be noted that when exporting food products to the PRC, the Chinese side usually follows European and American norms and standards in addition to its own, especially when there are no national requirements.

One difficulty in comparing the indicators approved by the EU and the PRC is that there is no open access to Chinese regulatory documents in this area.

An additional problem was the translation of Chinese standards into English. All available translations are unofficial and only accessible from non-verified commercial sources.

[1] As of July 2017

Food business operators planning to export their products to the PRC may benefit from the following websites, with references to PRC food safety regulations:

- Certification and Accreditation Administration of the PRC—**http://www.cnca.gov.cn/**
- General Administration of Quality Supervision, Inspection and Quarantine of the PRC—**http://www.aqsiq.gov.cn/**
- China Food Safety Regulations—**http://www.cirs-group.com/food/provisions/**
- A single (unofficial) resource from which food safety control regulations, primarily relevant government standards, can be downloaded (in the original language)—**http://down.foodmate.net/**

Required documents in current EU legislation are available on the website: http://eur-lex.europa/"http://eur-lex.europa.eu/ homepage.html. Documents presented on this website are in the original languages of the EU Member States. In addition, useful information on EU requirements for food products is available on the European Commission website: https://ec.europa.eu/food/overview.

In comparing food product and safety criteria of the EU and those of the PRC, the following differences were identified:

1) A single consolidated document that regulates microbiological criteria for all categories of food products that may cause potential risks, does not exist in the People's Republic of China; the list of GB-series documents (PRC national standard), cited in order of the documents' publication, is provided in Annex 1 to the publication.
2) Compared to Regulation № 2073/2005, Chinese standards do not include some positions on food products subject to mandatory control (e.g. p.1.7, 1.18, 1.19, 1.29).
3) Compared to Regulation № 2073/2005, absences in Chinese standards are sometimes detailed in categories and subcategories of food products (e.g. p.1.1-1.3, 1.4-1.9).
4) A range of food products categories, present in Chinese documents, are absent in Regulation №2073/2005, for example: casein, cereal crop products, legume products, chocolate and cocoa products, and nuts and seed products.
5) A list of pathogenic microorganisms subject to mandatory controls is at variance for the prevailing number of categories of food products (e.g. p.1.1, 1.4-1.10, 1.16, 1.17, 1.24, 1.5).
6) In some cases, the difference in the maximum permissible level of pathogenic microorganism content in foodstuffs is identified (e.g. p. 1.21, 1.26, 1.27).
7) Sometimes Chinese standards do not comply with those of the EU in terms of the number of samples to be undertaken (e.g. p.1.22-1.24).
8) For a number of positions existing in the EU (for example, raw meat and poultry, which require thermal or special processing, and are not intended for direct consumption), the requirements of microbiological criteria are absent in China.
9) According to PRC hygiene standards, the system of controls of pathogenic and other microorganisms in food products during processing is absent; such controls are only regulated for sale (pre-packaged) food products/semi-finished food products.

Given the substantial differences in category names and food products themselves, exporters are kindly advised to hold meaningful consultations with Chinese partners/importers for each specific issue.

1 Comparison of microbiological criteria in food products

EU: Annex I to Regulation № 2073/2005[1]

PRC: national standards GB 2707-2016, GB 5420-2010, GB 6783-2013, GB 10765-2010, GB 10767-2010, GB 10769-2010, GB 11674-2010, GB 13102-2010, GB 14967-2015, GB 16869-2005, GB 19301-2010, GB 19302-2010, GB 19644-2010, GB 19645-2010, GB 19646-2010, GB 22556-2008, GB 25191-2010, GB 25192-2010, GB 25596-2010, GB 29921-2013, GB 31619-2014, GB 31638-2016

[1] Commission Regulation (EC) No. 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs. The latest version of the Regulation in English can be found at: http://eur-lex.europa.eu/homepage.html.

[2] Full names of PRC standards are specified in the table given in Annex I.

Country	Food category	Micro-organisms, their toxins, metabolites (metabolic products)/ pathogenic microorganisms	Sampling plan		Limits[3]		PRC standard
			n[4]	c[5]	Vm (EU) / m (PRC)[6]	M	
1	2	3	4	5	6	7	8
EU[7]	1.1[8] Ready-to-eat foods intended for infants[9], and ready-to-eat foods for special medical purposes[10]	*Listeria monocytogenes*	10	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Dried infant formulae (for infants below 6 months of age)	Staphylococcus aureus 金黄色葡萄球菌	5	2	10 CFU/g	100 CFU/g	GB 10765-2010
		Enterobacter sakazakii 阪崎肠杆菌	3	0	0/100 g	–[11]	
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Foods for special medical purposes intended for infants below six months of age	Staphylococcus aureus 金黄色葡萄球菌	5	2	10 CFU/g	100 CFU/g	GB 25596-2010
		Enterobacter sakazakii 阪崎肠杆菌	3	0	0/100 g	–	
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Foods (dried formulae) for special medical purposes (for children older than one year)	Salmonella 沙门氏菌	5	0	0/25 g	–	GB 29922-2013
		Staphylococcus aureus 金黄色葡萄球菌	5	2	10 CFU/g	100 CFU/g	

[3] In the PRC, unless otherwise specified, the limit values are 25 g or 25 ml.

[4] Number of samples taken from the batch of products.

[5] "C" in the EU is the number of samples with parametric values between "m" and "M"; "c" in the PRC is the maximum number of samples, the parametric value of which may exceed "M".

[6] The maximum permissible values for the EU "Vm", are identical to "m" in the PRC.

[7] There is no exact match for this EU category in Chinese standards. The most closely content-related categories do not provide for the control of L. monocytogenes.

[8] The numbering corresponds to the numbering used in Annex I to Regulation No. 2073/2005.

[9] Children under 12 months.

[10] Regular testing against the criterion is not required in normal circumstances for the following ready-to-eat foods: those which have received heat treatment or other processing effective to eliminate L. monocytogenes, when recontamination is not possible after this treatment (for example, products heat treated in their final package); fresh, uncut and unprocessed vegetables and fruits, excluding sprouted seeds; bread, biscuits and similar products; bottled or packed waters, soft drinks, beer, cider, wine, spirits and similar products; sugar, honey and confectionery, including cocoa and chocolate products; live bivalve molluscs; food grade salt.

[11] Hereinafter in the text the symbol "–" refers to the absence of the indicator in one or another Chinese standard. In this case, the absence of the "M" indicator (the maximum permissible levels of pathogenic microorganisms) converts the "m" indicator (limiting the level of permissible content of pathogenic microorganisms) into the final criterion, which should be observed.

1	2	3	4	5	6	7	8
EU	1.2 Ready-to-eat foods able to support the growth of *L. monocytogenes*, other than those intended for infants and for special medical purposes	*Listeria monocytogenes*	5	0	100 CFU/g[12]		
			Criteria applied for products placed on the market during their shelf-life				
			5	0	Absence in 25 g[13]		
			Criteria applied for products before the food has left the immediate control of the food business operator, who has produced it				
	1.3 Ready-to-eat foods unable to support the growth of *L. monocytogenes*, other than those intended for infants and for special medical purposes[14, 15]	*Listeria monocytogenes*	5	0	100 CFU/g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Meat products[16] • cooked (heat-treated) meat products • intended to be eaten raw	*Listeria monocytogenes* 单核细胞增生李斯特氏菌	5	0	0	–	GB 29921-2013
	Hard cheeses (ripened cheeses, ripened blue cheeses, unripened cheeses)	*Listeria monocytogenes* 单核细胞增生李斯特氏菌	5	0	0/25 g	–	GB 5420-2010
	Processed cheeses (content of hard cheese not less than 15%)	*Listeria monocytogenes* 单核细胞增生李斯特氏菌	5	0	0/25 g	–	GB 25192-2010

[12] This criterion shall apply if the manufacturer is able to demonstrate, to the satisfaction of the competent authority, that the product will not exceed the limit 100 cfu/g throughout the shelf-life. The operator may fix intermediate limits during the process that must be low enough to guarantee that the limit of 100 cfu/g is not exceeded at the end of shelf-life.

[13] This criterion shall apply to products before they have left the immediate control of the producing food business operator, when he is not able to demonstrate, to the satisfaction of the competent authority, that the product will not exceed the limit of 100 cfu/g throughout the shelf-life.

[14] Regular testing against the criterion is not required in normal circumstances for the following ready-to-eat foods: those which have received heat treatment or other processing effective to eliminate L. monocytogenes, when recontamination is not possible after this treatment (for example, products heat treated in their final package); fresh, uncut and unprocessed vegetables and fruits, excluding sprouted seeds; bread, biscuits and similar products; bottled or packed waters, soft drinks, beer, cider, wine, spirits and similar products; sugar, honey and confectionery, including cocoa and chocolate products; live bivalve molluscs; food grade salt.

[15] Products with pH ≤ 4,4 or a w ≤ 0,92, products with pH ≤ 5,0 and a w ≤ 0,94, products with a shelf-life of less than five days shall be automatically considered to belong to this category. Other categories of products can also belong to this category, subject to scientific justification.

[16] Products from cooked (marinated, stewed, smoked, roasted, steamed, boiled, etc.) and raw (fermented or processed by special technologies) meat (pork, beef, lamb, chicken, rabbit, dog, etc.), suitable for direct consumption.

1	2	3	4	5	6	7	8
EU	1.4 Minced meat and meat preparations intended to be eaten raw	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Meat products[17] • cooked (heat-treated) meat products • intended to be eaten raw	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Listeria monocytogenes 单核细胞增生李斯特氏菌	5	0	0	–	
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g	1000 CFU/g	
		Escherichia coli O 157:H7[18] 大肠埃希氏菌	5	0	0	–	
	Fresh (frozen) products from animals and poultry: raw, not suitable for direct consumption (without heat-treatment) meat of animals (pigs, bovine cattle, sheep and goats, rabbits, etc.) and poultry (chickens, ducks, geese, etc.), as well as edible parts (offals, heads, necks, tails, wings, appendages, etc.)	Requirements for indicators of microbiological criteria are absent					GB 2707-2016
EU	1.5 Minced meat and meat preparations made from poultry meat intended to be eaten cooked	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Meat products[19] • cooked (heat-treated) meat products • intended to be eaten raw	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Listeria monocytogenes 单核细胞增生李斯特氏菌	5	0	0	–	
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g	1000 CFU/g	
	Poultry meat (fresh and frozen) and products thereof	Salmonella 沙门氏菌	Indicator is absent		0/25 g		GB 16869-2005
		Escherichia coli O 157:H7 大肠埃希氏菌		0/25 g			

[17] Products from cooked (marinated, stewed, smoked, roasted, steamed, boiled, etc.) and raw (fermented or processed by special technologies) meat (pork, beef, lamb, chicken, rabbit, dog, etc.), suitable for direct consumption.

[18] Only for beef products.

[19] Products from cooked (marinated, stewed, smoked, roasted, steamed, boiled, etc.) and raw (fermented or processed by special technologies) meat (pork, beef, lamb, chicken, rabbit, dog, etc.), suitable for direct consumption.

1	2	3	4	5	6	7	8
EU	1.6 Minced meat and meat preparations made from other species than poultry intended to be eaten cooked	Salmonella	5	0	Absence in 10 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Meat products[20] • cooked (heat-treated) meat products • intended to be eaten raw	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Listeria monocytogenes 单核细胞增生李斯特氏菌	5	0	0	–	
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g	1000 CFU/g	
		Escherichia coli O 157:H7[21] 大肠埃希氏菌	5	0	0	–	
EU[22]	1.7 Mechanically separated meat (MSM)[23]	Salmonella	5	0	Absence in 10 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Fresh (frozen) products from animals and poultry: raw, not suitable for direct consumption (without heat-treatment) meat of animals (pigs, bovine cattle, sheep and goats, rabbits, etc.) and poultry (chickens, ducks, geese, etc.), as well as edible parts (offals, heads, necks, tails, wings, appendages, etc.)	Requirements for indicators of microbiological criteria are absent					GB 2707-2016

[20] Products from cooked (marinated, stewed, smoked, roasted, steamed, boiled, etc.) and raw (fermented or processed by special technologies) meat (pork, beef, lamb, chicken, rabbit, dog, etc.), suitable for direct consumption.

[21] Only for beef products.

[22] There is no exact match for this category in the PRC system of standards.

[23] This criterion shall apply to mechanically separated meat (MSM) produced with the techniques referred to in paragraph 3 of Chapter III of Section V of Annex III to Regulation (EC) No 853/2004 of the European Parliament and of the Council.

1	2	3	4	5	6	7	8
EU	1.8 Meat products intended to be eaten raw, excluding products where the manufacturing process or the composition of the product will eliminate the salmonella risk	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Meat products[24] • cooked (heat-treated) meat products • intended to be eaten raw	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Listeria monocytogenes 单核细胞增生李斯特氏菌	5	0	0	–	
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g	1000 CFU/g	
		Escherichia coli O 157:H7[25] 大肠埃希氏菌	5	0	0	–	
EU	1.9 Meat products made from poultry meat intended to be eaten cooked	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Meat products[26] • cooked (heat-treated) meat products • intended to be eaten raw	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Listeria monocytogenes 单核细胞增生李斯特氏菌	5	0	0	–	
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g	1000 CFU/g	
		Escherichia coli O 157:H7[27] 大肠埃希氏菌	5	0	0	–	

[24] Products from cooked (marinated, stewed, smoked, roasted, steamed, boiled, etc.) and raw (fermented or processed by special technologies) meat (pork, beef, lamb, chicken, rabbit, dog, etc.), suitable for direct consumption.

[25] Only for beef products.

[26] Products from cooked (marinated, stewed, smoked, roasted, steamed, boiled, etc.) and raw (fermented or processed by special technologies) meat (pork, beef, lamb, chicken, rabbit, dog, etc.), suitable for direct consumption.

[27] Only for beef products.

1	2	3	4	5	6	7	8
EU	1.10 Gelatine and collagen	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Gelatine	Salmonella 沙门氏菌	Doesn't have to be detected				GB 6783-2013, GB 31619-2014
	Collagen sausage casings	Salmonella 沙门氏菌	5	0	0/25 g	–	GB 14967-2015
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100	1000	
	Casein	Staphylococcus aureus 金黄色葡萄球菌	5	2	10	10^{27}	GB 31638-2010
		Salmonella 沙门氏菌	5	0	0/25 g	–	

1	2	3	4	5	6	7	8
EU	1.11 Cheeses, butter and cream made from raw milk or milk that has undergone a lower heat treatment than pasteurisation[28]	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Condensed milk, sweetened condensed, condensed milk with additives	Staphylococcus aureus 金黄色葡萄球菌	5	0	0/25 g (ml)	–	GB 13102-2010
		Salmonella 沙门氏菌	5	0	0/25 g (ml)	–	
	Modified milk	Staphylococcus aureus 金黄色葡萄球菌	5	0	0/25 g (ml)	–	GB 25191-2010
		Salmonella 沙门氏菌	5	0	0/25 g (ml)	–	
	Pasteurized milk	Staphylococcus aureus 金黄色葡萄球菌	5	0	0/25 g (ml)	–	GB 19645-2010
		Salmonella 沙门氏菌	5	0	0/25 g (ml)	–	
	Fermented milk	Staphylococcus aureus 金黄色葡萄球菌	5	0	0/25 g (ml)	–	GB 19302-2010
		Salmonella 沙门氏菌	5	0	0/25 g (ml)	–	
	Hard cheeses (ripened cheeses, ripened blue cheeses, unripened cheeses)	Staphylococcus aureus 金黄色葡萄球菌	5	2	100	1000	GB 5420-2010
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Processed cheeses (content of hard cheese not less than 15%)	Staphylococcus aureus 金黄色葡萄球菌	5	2	100	1000	GB 25192-2010
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Cream (10-80% fat), butter (not less than 80% fat), dehydrated butter (not less than 99,8% fat)	Staphylococcus aureus 金黄色葡萄球菌	5	1	10	100	GB 19646-2010
		Salmonella 沙门氏菌	5	0	0/25 g (ml)	–	

[28] Excluding products when the manufacturer can demonstrate to the satisfaction of the competent authorities that, due to the ripening time and a w of the product where appropriate, there is no salmonella risk.

1	2	3	4	5	6	7	8
EU	1.12 Milk powder and whey powder	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Milk powder (dried milk)	Staphylococcus aureus 金黄色葡萄球菌	5	2	10	100	GB 19644-2010
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Whey powder and serum albumin powder (whey albumin)	Staphylococcus aureus 金黄色葡萄球菌	5	2	10	100	GB 11674-2010
		Salmonella 沙门氏菌	5	0	0/25 g	–	
EU	1.13 Ice cream, excluding products where the manufacturing process or the composition of the product will eliminate the salmonella risk	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Frozen drinks[29] • ice cream • edible ice	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g (ml)	1000 CFU/g (ml)	
EU	1.14 Egg products, excluding products where the manufacturing process or the composition of the product will eliminate the salmonella risk	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Egg products intended for human consumption[30]	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013

[29] All types of ice cream and food ice, made on the basis of drinking water, sugar, milk, fruit, bean products, edible fats and oils, with the addition of food additives.

[30] Products suitable for direct consumption, made from poultry eggs, including cooked eggs.

1	2	3	4	5	6	7	8
EU	1.15 Ready-to-eat foods containing raw egg, excluding products where the manufacturing process or the composition of the product will eliminate the salmonella risk	Salmonella	5	0	Absence in 25 g or ml		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Cereal products[31] • cooked (heat-treated) cereal products (including pastries) • cooked (heat-treated) flour-rice products with filling • instant (quick – cooking) flour-rice products	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g	1000 CFU/g	
	Condiments intended for human consumption • soy sauce • soy paste • aquatic products condiments • combined condiments (mayonnaise, etc)	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Staphylococcus aureus 金黄色葡萄球菌	5	2	100 CFU/g (ml)	1000 CFU/g (ml)	
EU	1.16 Cooked crustaceans and molluscan shellfish	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Aquatic products[32] • cooked (heat-treated) aquatic products • intended to be eaten raw aquatic animal products • intended for human consumption aquatic plant products (algae)	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Vibrio parahaemolyticus 副溶血性弧菌	5	1	100 MPN/g	1000 MPN/g	
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g	1000 CFU/g	

[31] Products made from rice, wheat, other cereals, roots, corn, etc., whether or not filled, suitable for direct consumption (cereal flakes, cereals / cooked porridge / instant noodles, etc.), as well as bakery products made from cereals, fats, eggs, sugar and food additives, suitable for direct consumption (pastries, cakes, cookies, bread, etc.).

[32] Products made from fish, crustaceans, molluscs, invertebrates, echinoderms and other aquatic organisms that have undergone heat treatment (steamed, cooked, baked, deep fried, etc.), suitable for direct consumption. Products that have been cleaned but not thermally processed, suitable for direct consumption, including live, fresh, frozen fish (fish slices), shrimp, cephalopods, live crab, live molluscs, as well as products made from live snails, crabs, molluscs, caviar by non-thermal treatment (salting, marinating, alcoholization), suitable for direct consumption. Products made from algae, suitable for direct consumption, which have undergone a certain treatment, including thermal (boiled, deep fried).

1	2	3	4	5	6	7	8
EU	1.17 Live bivalve molluscs and live echinoderms, tunicates and gastropods	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Aquatic products[33] • cooked (heat-treated) aquatic products • intended to be eaten raw aquatic animal products • intended for human consumption aquatic plant products (algae)	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Vibrio parahaemolyticus 副溶血性弧菌	5	1	100 MPN/g	1000 MPN/g	
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g	1000 CFU/g	
EU[34]	1.18 Sprouted seeds (ready-to-eat)[35]	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
EU	1.19 Precut fruit and vegetables (ready-to-eat)[36]	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Fruit and vegetable products (including marinated products) intended for human consumption[37]	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g (ml)	1000 CFU/g (ml)	
		Escherichia coli O 157:H7[38] 大肠埃希氏菌	5	0	0	–	
EU	1.20 Unpasteurised fruit and vegetable juices (ready-to-eat)	Salmonella	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Drinks (except packed waters and carbonated drinks)[39]	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g (ml)	1000 CFU/g (ml)	

[33] Products made from fish, crustaceans, molluscs, invertebrates, echinoderms and other aquatic organisms that have undergone heat treatment (steamed, cooked, baked, deep fried, etc.), suitable for direct consumption. Products that have been cleaned but not thermally processed, suitable for direct consumption, including live, fresh, frozen fish (fish slices), shrimp, cephalopods, live crab, live molluscs, as well as products made from live snails, crabs, molluscs, caviar by non-thermal treatment (salting, marinating, alcoholization), suitable for direct consumption. Products made from algae, suitable for direct consumption, which have undergone a certain treatment, including thermal (boiled, deep fried).

[34] There is no exact match for this category in the PRC system of standards.

[35] Excluding sprouts that have received a treatment effective to eliminate Salmonella spp. and STEC.

[36] There is no exact match for this category in the PRC system of standards.

[37] Products intended for direct consumption, made from vegetables and fruits: frozen vegetables / fruits, dried vegetables / fruits, fruit in vinegar, oils or salt, comfiture, jam, marmalade, candied fruits, syrup fruits, pickled vegetables, vegetable pasta and sauces (except tomato), products from fermented vegetables and fruits.

[38] Only for vegetables and fruits intended to be eaten raw.

[39] Vegetable and fruit juices, protein drinks, water-based mixed drinks, tea, coffee, vegetable drinks, dry drinks, and other beverages.

1	2	3	4	5	6	7	8
EU	1.21 Cheeses, milk powder and whey powder, as referred to in the coagulase-positive staphylococci criteria in Chapter 2.2 Annex I of Commission Regulation № 2073/2005	Staphylococcal enterotoxins[40]	5	0	Doesn't have to be detected in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Hard cheeses (ripened cheeses, ripened blue cheeses, unripened cheeses)	Staphylococcus aureus 金黄色葡萄球菌	5	2	100 CFU/g	1000 CFU/g	GB 5420-2010
	Processed cheeses (content of hard cheese not less than 15%)	Staphylococcus aureus 金黄色葡萄球菌	5	2	100 CFU/g	1000 CFU/g	GB 25192-2010
	Milk powder (dried milk)	Staphylococcus aureus 金黄色葡萄球菌	5	2	10 CFU/g	100 CFU/g	GB 19644-2010
	Whey powder and serum albumin powder (whey albumin)	Staphylococcus aureus 金黄色葡萄球菌	5	2	10 CFU/g	100 CFU/g	GB 11674-2010
EU	1.22 Dried infant formulae and dried dietary foods for special medical purposes intended for infants below six months of age	Salmonella	30[41]	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Dried infant formulae (for infants below 6 months of age)	Staphylococcus aureus 金黄色葡萄球菌	5	2	10	100	GB 10765-2010
		Enterobacter sakazakii 阪崎肠杆菌	3	0	0/100 g	–	
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Foods for special medical purposes intended for infants below six months of age	Staphylococcus aureus 金黄色葡萄球菌	5	2	10	100	GB 25596-2010
		Enterobacter sakazakii 阪崎肠杆菌	3	0	0/100 g	–	
		Salmonella 沙门氏菌	5	0	0/25 g	–	

[40] In the EU standards, the presence of staphylococcal enterotoxins is controlled, while the PRC standards control the presence of Staphylococcus. Perhaps this results in a significant difference in the permissible limits for the presence of the specified pathogenic organisms in this category of food products.

[41] In terms of the required number of samples, the Chinese standard (5 samples) does not match the European standard (30 samples).

1	2	3	4	5	6	7	8
EU	1.23 Dried follow-on formulae	Salmonella	30[42]	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Dried follow-on formulae for children (6 -36 months of age)	Salmonella 沙门氏菌	5	0	0/25 g	–	GB 10767-2010
	Cereal-based foods for children (6 -36 months of age)	Salmonella 沙门氏菌	5	0	0/25 g	–	GB 10769-2010
EU	1.24 Dried infant formulae and dried dietary foods for special medical purposes intended for infants below 6 months of age[43]	*Cronobacter spp. (Enterobacter sakazakii)*	30[44]	0	Absence in 10 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Dried infant formulae (for infants below 6 months of age)	Staphylococcus aureus 金黄色葡萄球菌	5	2	10	100	GB 10765-2010
		Enterobacter sakazakii[45] 阪崎肠杆菌	3	0	0/100 g	–	
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Foods for special medical purposes intended for infants below six months of age	Staphylococcus aureus 金黄色葡萄球菌	5	2	10	100	GB 25596-2010
		Enterobacter sakazakii 阪崎肠杆菌	3	0	0/100 g[46]	–	
		Salmonella 沙门氏菌	5	0	0/25 g	–	

[42] In terms of the required number of samples, the Chinese standard (5 samples) does not match the European standard (30 samples).

[43] Parallel testing for Enterobacteriaceae and E. sakazakii shall be conducted, unless a correlation between these micro-organisms has been established at an individual plant level. If Enterobacteriaceae are detected in any of the product samples tested in such a plant, the batch must be tested for E. sakazakii. It shall be the responsibility of the manufacturer to demonstrate to the satisfaction of the competent authority whether such a correlation exists between Enterobacteriaceae and E. sakazakii.

[44] In terms of the required number of samples, the Chinese standard (3 samples) does not match the European standard (30 samples).

[45] The PRC standard requirement to the presence of the pathogenic microorganism in a certain product concentration is higher than the EU standard.

[46] The PRC standard requirement to the presence of the pathogenic microorganism in a certain product concentration is higher than the EU standard.

1	2	3	4	5	6	7	8
EU[47]	1.25 Live bivalve molluscs and live echinoderms, tunicates and marine gastropods	*E. coli*[48]	5[49]	1	230 MPN/100 g of flesh and intravalvular liquid	700 MPN/100 g of flesh and intravalvular liquid	
		Criteria applied for products placed on the market during their shelf-life					
PRC	Aquatic products • cooked (heat-treated) aquatic products • intended to be eaten raw aquatic animal products • intended for human consumption aquatic plant products (algae)	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Vibrio parahaemolyticus 副溶血性弧菌	5	1	100 MPN/g	1000 MPN/g	
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g	1000 CFU/g	
EU	1.26 Fishery products from fish species associated with a high amount of histidine[50]	Histamine	9[51]	2	100 mg/kg	200 mg/kg	
		Criteria applied for products placed on the market during their shelf-life					
PRC	Fish species with a high amount of histamine[52] (standard applies to fresh, frozen aquatic animal products grown in marine or fresh waters)	Histamine[53] 组胺	Indicator is absent		Not more than 40 mg / 100 g[54]		GB 2733-2015
	Fishery products manufactured from fish species with a high level of histamine[55]	Histamine[56] 组胺	Indicator is absent		Not more than 40 mg / 100 g[57]		GB 10136-2015

[47] In the PCR there is no standard to detect this pathogenic microorganism (*E. coli*) in the specified product category.

[48] *E. coli* is used here as an indicator of faecal contamination.

[49] Each sample consists of a minimum number of individual animals in accordance with EN/ISO 6887–3.

[50] Particularly fish species of the families: *Scombridae, Clupeidae, Engraulidae, Coryfenidae, Pomatomidae, Scombresosidae*.

[51] Single samples may be taken at retail level. In such a case the presumption laid down in Article 14(6) of Regulation (EC) No 178/2002, according to which the whole batch should be deemed unsafe, shall not apply, unless the result is above M.

[52] Specifically, the species of fish families *Scombridae*, including mackerel, bonito, tuna, *Carangidae*, *Scombresosidae*, sardines and various species of fatty sea fish with red meat. Not applicable to live aquatic products

[53] The Chinese system of food standards does not include histamines to the category of pathogenic microorganisms, which explains the lack of standards for sampling.

[54] The Chinese standard determines only the maximum permissible safe value.

[55] Specifically, the species of fish families *Scombridae*, including mackerel, bonito, tuna, *Carangidae*, *Scombresosidae*, sardines and various species of fatty sea fish with red meat.

[56] The Chinese system of food standards does not include histamines to the category of pathogenic microorganisms, which explains the lack of standards for sampling.

[57] The Chinese standard determines only the maximum permissible safe value.

1	2	3	4	5	6	7	8
EU	1.27 Fishery products, except those in food category 1.27a, which have undergone enzyme maturation treatment in brine, manufactured from fish species associated with a high amount of histidine	Histamine	9[58]	2	200 mg/kg	400 mg/kg	
		Criteria applied for products placed on the market during their shelf-life					
PRC	Fishery products (including salted fish) manufactured from fish species with a high level of histamine[59]		Indicator is absent		Not more than 40 mg / 100 g[60]		GB 10136-2015
EU	1.27a Fish sauce produced by fermentation of fishery products	Histamine	1	0	400 mg/kg		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Fishery products (including salted fish) manufactured from fish species with a low level of histamine	Histamine[61] 组胺	Indicator is absent		Not more than 40 mg / 100 g[62]		GB 10136-2015
EU	1.28 Fresh poultry meat[63]	*Salmonella typhimurium*[64], *Salmonella enteritidis*	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Poultry meat (fresh and frozen) and products thereof	Salmonella[65] 沙门氏菌	Indicator is absent		0/25 g		GB 16869-2005
		Escherichia coli O 157:H7 大肠埃希氏菌	Indicator is absent		0/25 g		

[58] Single samples may be taken at retail level. In such a case the presumption laid down in Article 14(6) of Regulation (EC) No 178/2002, according to which the whole batch should be deemed unsafe, shall not apply, unless the result is above M.

[59] The Chinese standard determines only the maximum permissible safe value.

[60] The Chinese standard determines only the maximum permissible safe value.

[61] The Chinese system of food standards does not include histamines to the category of pathogenic microorganisms, which explains the lack of standards for sampling.

[62] The Chinese standard determines only the maximum permissible safe value.

[63] This criterion shall apply to fresh meat from breeding flocks of *Gallus gallus*, laying hens, broilers and breeding and fattening flocks of turkeys.

[64] As regards monophasic Salmonella typhimurium, only 1,4,[5],12: i is included.

[65] The Chinese standard determines only the general category of a pathogenic microorganism — salmonella, without presenting a detailed categorization by subclasses, in contrast to the EU standard.

1	2	3	4	5	6	7	8
EU	1.29 Sprouts[66]	Shiga toxin producing *E. coli* (STEC) O157, O26, O111, O103, O145 and O104:H4	5	0	Absence in 25 g		
		Criteria applied for products placed on the market during their shelf-life					
PRC	Soybean sprouts[67]	Salmonella, Shigella (causes dysentery), Staphylococcus aureus 沙门氏菌、志贺氏菌、金黄色葡萄球菌	Indicator is absent		Doesn't have to be detected		GB 22556-2008
PRC	Legume products intended for human consumption[68] • fermented legume products • non fermented legume products	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g	1000 CFU/g	
PRC	Chocolates and cocoa products[69]	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
PRC	Products from nuts and seeds • paste from nuts and seeds • marinated nuts, etc.	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
PRC	Raw milk	Total number of bacterial colonies 菌落总数	Indicator is absent		2×10^6		GB 19301-2010

[66] Excluding sprouts that have received a treatment effective to eliminate Salmonella spp. and STEC.

[67] In Chinese standards the "sprouts" category is represented by soy-bean sprouts only.

[68] Including furu (soy-marinated bean cheese), fermented black bean sauce, natto and other products prepared by wet fermentation, as well as soy milk, tofu (soy cheese), hard soy cheese, soy protein and other products prepared by wet methods without fermentation.

[69] Chocolate, including made from cocoa butter substitutes, chocolate fillings and creams; liquid, solid cocoa products and cocoa powder.

2 Comparison of the maximum permissible levels of certain microorganisms during food processing

EU: Annex I to Regulation № 2073/2005[1]

PRC: national standards GB 2707-2016, GB 2749-2015, GB 2759-2015, GB 5420-2010, GB 9959.1-2001, GB/T 9959.2-2008, GB/T 9960-2008, GB/T 9961-2008, GB 10136-2015, GB 10765-2010, GB 10767-2010, GB 10769-2010, GB 11674-2010, GB 16869-2005, GB/T 17238-2008, GB/T 17239-2008, GB 19644-2010, GB 19645-2010, GB 19646-2010, GB 21710-2016, GB 25192-2010, GB 25596-2010, GB 29921-2013, GB 29922-2013[2]

[1] Commission Regulation (EC) No. 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs. The latest version of the Regulation in English can be found at: http://eur-lex.europa.eu/homepage.html

[2] Full names of PRC standards are specified in the table given in Annex I.

Food category		Micro-organisms	Sampling plan		Limits		PRC standard
			n	c	m	M	
1	2	3	4	5	6	7	8
2.1 Meat and products thereof							
EU	2.1.1 Carcasses of cattle, sheep, goats and horses[3, 4]	Aerobic colony count[5]			3,5 log CFU/cm² daily mean log	5,0 log CFU/cm² daily mean log	
		Enterobacteriaceae[6]			1,5 log CFU/cm² daily mean log	2,5 log CFU/cm² daily mean log	
		Criteria apply to carcasses after dressing but before chilling					
PRC	Fresh, chilled, frozen carcasses of sheep and goats (after slaughter, dressing and post mortem inspection)	Total number of bacterial colonies 菌落总数			5×10^5 CFU/g		GB/T 9961-2008
		Coliforms 大肠菌群			1×10^3 MPN / 100 g		
		Shigella (causes bacterial dysentery) 志贺氏菌			Doesn't have to be detected		
		Staphylococcus aureus 金黄色葡萄球菌			Doesn't have to be detected		
		Enterotoxigenic E. coli 致泻大肠埃希氏菌			Doesn't have to be detected		
	Fresh, chilled, frozen carcasses of rabbits[7] (after slaughter, dressing and post mortem inspection)	Total number of bacterial colonies 菌落总数			1×10^6 CFU/g (fresh carcass) 5×10^5 CFU/g (frozen carcass)		GB/T 17239-2008
		Coliforms 大肠菌群			1×10^4 MPN / 100 g (fresh carcass) 5×10^3 MPN / 100 g (frozen carcass)		
	Fresh and frozen beef (quarters)[8]	Total number of bacterial colonies 菌落总数			1×10^5 CFU/g (fresh) 5×10^5 KYO/ g (frozen)		GB/T 9960-2008[9]
		Coliforms 大肠菌群			1×10^4 MPN / 100 g (fresh) 1×10^3 MPN / 100 g (frozen)		
		Enterotoxigenic E. coli 致泻大肠埃希氏菌			Doesn't have to be detected		

[3] The limits (m and M) shall apply only to samples taken by the destructive method. The daily mean log shall be calculated by first taking a log value of each individual test result and then calculating the mean of these log values.

[4] There is no exact match for this category in the PRC system of standards.

[5] Chinese standards do not include this control item.

[6] Chinese standards do not include this control item.

[7] This position is missing in the European requirements.

[8] There is no exact match for the EU standard category "Cattle carcasses" in the PRC system of standards.

[9] According to microbiological data, this document gives reference to the standard GB18406.3-2001, which expired in 2005. Currently the Chinese system of standards has no document regulating microbiological indicators for raw cattle meat.

1	2	3	4	5	6	7	8
EU[10]	2.1.2 Carcasses of pigs[11]	Aerobic colony count			4,0 log CFU/cm² daily mean log	5,0 log CFU/cm² daily mean log	
		Enterobacteriaceae			2,0 log CFU/ cm² daily mean log	3,0 log CFU/cm² daily mean log	
		Criteria apply to carcasses after dressing but before chilling					
EU	2.1.3 Carcasses of cattle, sheep, goats and horses[12]	Salmonella	50[13]	2[14]	Absence in the area tested per carcass		
		Criteria apply to carcasses after dressing but before chilling					
PRC	Fresh, chilled, frozen carcasses of sheep and goats (after slaughter, dressing and post mortem inspection)	Salmonella 沙门氏菌			Doesn't have to be detected		GB/T 9961-2008
	Fresh, chilled, frozen carcasses of rabbits[15](after slaughter, dressing and post mortem inspection)	Salmonella 沙门氏菌			Doesn't have to be detected		GB/T 17239-2008
	Fresh and frozen beef (quarters)	Salmonella 沙门氏菌			Doesn't have to be detected		GB/T 9960-2008[16]

[10] The limits (m and M) shall apply only to samples taken by the destructive method. The daily mean log shall be calculated by first taking a log value of each individual test result and then calculating the mean of these log values.

[11] There is no exact match for this category in the PRC system of standards.

[12] There is no exact match for this category in the PRC system of standards, there are no norms for cattle carcasses, horses, no distinction is made between goats and sheep.

[13] The 50 samples shall be derived from 10 consecutive sampling sessions in accordance with the sampling rules and frequencies laid down in the Regulation 2073/2005.

[14] The number of samples where the presence of salmonella is detected. The c value is subject to review in order to take into account the progress made in reducing the salmonella prevalence. Member States or regions having low salmonella prevalence may use lower c values even before the review.

[15] This position is missing in the European standards.

[16] According to microbiological data, this document gives reference to the standard GB18406.3-2001, which expired in 2005. Currently the Chinese system of standards has no document regulating microbiological indicators for raw cattle meat.

1	2	3	4	5	6	7	8
EU	2.1.4 Carcasses of pigs[17]	Salmonella	50[18]	3[19]	Absence in the area tested per carcass		
		Criteria apply to carcasses after dressing but before chilling					
PRC	Fresh and frozen half carcasses of pigs(after slaughter, dressing, before or after chilling)	Requirements for microbiological criteria are absent in this PRC standard					GB 9959.1 – 2001[20]
EU	2.1.5 Poultry carcasses of broilers and turkeys [21]	*Salmonella spp.*[22]	50[23]	5[24]	Absence in 25 g об'єднаної вибірки зразків зі шкіри на шиї		
		Criteria apply to carcasses after chilling					
EU	2.1.6 Minced meat[25]	Aerobic colony count[26]	5	2	5×10^5 CFU/g	5×10^6 CFU/g	
		E. coli[27]	5	2	50 CFU/g	500 CFU/g	
		Criteria apply at the end of the manufacturing process					

[17] There is no exact match for this category in the PRC system of standards.

[18] The 50 samples shall be derived from 10 consecutive sampling sessions in accordance with the sampling rules and frequencies laid down in the Regulation 2073/2005.

[19] The number of samples where the presence of *Salmonella* is detected. The c value is subject to review in order to take into account the progress made in reducing the *Salmonella* prevalence. Member States or regions having low *Salmonella* prevalence may use lower c values even before the review.

[20] The respective normative document of the PRC does not include standards (or references to another normative document) in relation to microbiological indicators.

[21] There is no exact match for this category in the PRC system of standards.

[22] Where *Salmonella spp.* is found, the isolates shall be further serotyped for *Salmonella typhimurium* and *Salmonella enteritidis* in order to verify compliance with the microbiological criterion set out in Row 1.28 of Chapter 1 of the EU Regulation No. 2073/2005.

[23] The 50 samples shall be derived from 10 consecutive sampling sessions in accordance with the sampling rules and frequencies laid down in the Regulation 2073/2005.

[24] The number of samples where the presence of salmonella is detected. The c value is subject to review in order to take into account the progress made in reducing the salmonella prevalence. Member States or regions having low salmonella prevalence may use lower c values even before the review.

[25] There is no exact match for this category in the PRC system of standards.

[26] This criterion shall not apply to minced meat produced at retail level when the shelf-life of the product is less than 24 hours.

[27] *E. coli* is used here as an indicator of faecal contamination.

1	2	3	4	5	6	7	8
EU	2.1.7 Mechanically separated meat (MSM)[28, 29]	Aerobic colony count[30]	5	2	5×10^5 CFU/g	5×10^6 CFU/g	
		E. coli[31, 32]	5	2	50 CFU/g	500 CFU/g	
		Criteria apply at the end of the manufacturing process					
PRC	Fresh and frozen lean pork	Total number of bacterial colonies 菌落总数			1×10^6 CFU/g		GB/T 9959.2-2008
		Coliforms 大肠菌群			1×10^4 MPN / 100 g		
		Salmonella 沙门氏菌			Doesn't have to be detected		
	Fresh and frozen beef (meat with bones cut into pieces)	Total number of bacterial colonies 菌落总数	Requirements for microbiological criteria are absent in this PRC standard				GB/T 17238-2008[33]
		Coliforms 大肠菌群					
		Enterotoxigenic E. coli 致泻大肠埃希氏菌					
		Salmonella 沙门氏菌					
	Fresh (frozen) products from animals and poultry: raw, not suitable for direct consumption (without heat-treatment) meat of animals (pigs, bovine cattle, sheep and goats, rabbits, etc.) and poultry (chickens, ducks, geese, etc.), as well as edible parts (offals, heads, necks, tails, wings, appendages, etc.)	Requirements for microbiological criteria are absent in this PRC standard					GB 2707-2016

[28] These criteria apply to mechanically separated meat (MSM) produced with the techniques referred to in paragraph 3 of Chapter III of Section V of Annex III to Regulation (EC) No 853/2004 of the European Parliament and of the Council.

[29] There is no exact match for this category in the PRC system of standards.

[30] Chinese standards do not include this control item.

[31] Chinese standards do not include this control item.

[32] *E. coli* is used here as an indicator of faecal contamination.

[33] According to microbiological data, this document gives reference to the standard GB18406.3-2001, which expired in 2005. Currently the Chinese system of standards has no document regulating microbiological indicators for raw cattle meat.

1	2	3	4	5	6	7	8
EU	2.1.8 Meat preparations	*E. coli*[34, 35]	5	2	500 CFU/g or cm^2	5000 CFU/g or cm^2	
		Criteria apply at the end of the manufacturing process					
PRC	Fresh (frozen) products from animals and poultry: raw, not suitable for direct consumption (without heat-treatment) meat of animals (pigs, bovine cattle, sheep and goats, rabbits, etc.) and poultry (chickens, ducks, geese, etc.), as well as edible parts (offals, heads, necks, tails, wings, appendages, etc.)	Requirements for microbiological criteria are absent in this PRC standard					GB 2707-2016
	Poultry meat (fresh and frozen) and products thereof	Total number of bacterial colonies 菌落总数			1×10^6 CFU/g (fresh) 5×10^5 CFU/g (frozen)		GB 16869-2005
		Coliforms 大肠菌群			1×10^4 MPN / 100 g (fresh) 5×10^3 MPN / 100 g (frozen)		
		Salmonella 沙门氏菌	0/25 g				
		Escherichia coli O 157:H7 出血性大肠埃希氏菌	0/25 g				

[34] Chinese standards do not include this control item.

[35] *E. coli* is used here as an indicator of faecal contamination.

1	2	3	4	5	6	7	8
2.2 Milk and dairy products							
EU	2.2.1 Pasteurised milk and other pasteurised liquid dairy products[36]	Enterobacteriaceae[37]	5	0	10 КУО/мл		
		Criteria apply at the end of the manufacturing process					
PRC	Pasteurised milk	Total number of bacterial colonies 菌落总数	5	2	50 000 CFU/g (ml)	100 000 CFU/g (ml)	GB 19645-2010
		Coliforms 大肠菌群	5	2	1 CFU/g (ml)	5 CFU/g (ml)	
		Staphylococcus aureus 金黄色葡萄球菌	5	0	0/25 g (ml)	–[38]	
		Salmonella 沙门氏菌	5	0	0/25 g (ml)	–	
EU	2.2.2 Cheeses made from milk or whey that has undergone heat treatment[39]	*E. coli*[40, 41]	5	2	100 CFU/g	1000 CFU/g	
		Criteria apply at the time during the manufacturing process when the *E. coli* count is expected to be highest[42]					
PRC	Hard cheeses (ripened cheeses, ripened blue cheeses, unripened cheeses)	Coliforms 大肠菌群	5	2	100 CFU/g	1000 CFU/g	GB 5420-2010
		Listeria monocytogenes 单核细胞增生李斯特氏菌	5	0	0/25 g	–	
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Processed cheeses (content of hard cheese not less than 15%)	Total number of bacterial colonies 菌落总数	5	2	100 CFU/g	1000 CFU/g	GB 25192-2010
		Coliforms 大肠菌群	5	2	1 CFU/g (ml)	5 CFU/g (ml)	
		Listeria monocytogenes 单核细胞增生李斯特氏菌	5	0	0/25 g	–	
		Salmonella 沙门氏菌	5	0	0/25 g	–	

[36] The criterion shall not apply to products intended for further processing in the food industry.

[37] Chinese standards do not include this control item.

[38] Hereinafter in the text the symbol "–" means the absence of the indicator in one or another Chinese standard. In this case, the absence of "M" indicator (the maximum permissible safe limit of the content of pathogenic microorganisms) converts "m" indicator (limiting the level of permissible content of pathogenic microorganisms) into the final criterion, which should be observed.

[39] There is no exact match for this category in the PRC system of standards.

[40] Chinese standards do not include this control item.

[41] *E. coli* is used here as an indicator for the level of hygiene.

[42] For cheese types that are unable to support *E. coli* growth, *E. coli* usually has the highest value at the beginning of the ripening period, and for cheese types that are capable of supporting *E. coli* growth, this indicator is considered normal at the end of the ripening period.

1	2	3	4	5	6	7	8
EU	2.2.3 Cheeses made from raw milk[43]	Coagulase-positive staphylococci	5	2	10^4 CFU/g	10^5 CFU/g	
		Criteria apply at the time during the manufacturing process when the *E. coli* count is expected to be highest					
PRC	Hard cheeses (ripened cheeses, ripened blue cheeses, unripened cheeses	Staphylococcus aureus 金黄色葡萄球菌	5	2	100 CFU/g	1000 CFU/g	GB 5420-2010
	Processed cheeses (content of hard cheese not less than 15%)	Staphylococcus aureus 金黄色葡萄球菌	5	2	100 CFU/g	1000 CFU/g	GB 25192-2010
EU	2.2.4 Cheeses made from milk that has undergone a lower heat treatment than pasteurization[44] and ripened cheeses made from milk or whey that has undergone pasteurization or a stronger heat treatment[45,46]	Coagulase-positive staphylococci	5	2	100 CFU/g	1000 CFU/g	
		Criteria apply at the time during the manufacturing process when the *E. coli* count is expected to be highest					
PRC	Hard cheeses (ripened cheeses, ripened blue cheeses, unripened cheeses)	Staphylococcus aureus 金黄色葡萄球菌	5	2	100 CFU/g	1000 CFU/g	GB 5420-2010
	Processed cheeses (content of hard cheese not less than 15%)	Staphylococcus aureus 金黄色葡萄球菌	5	2	100 CFU/g	1000 CFU/g	GB 25192-2010

[43] There is no exact match for this category in the PRC system of standards.

[44] Excluding cheeses where the manufacturer can demonstrate, to the satisfaction of the competent authorities, that the product does not pose a risk of staphylococcal enterotoxins.

[45] There is no exact match for this category in the PRC system of standards.

[46] Excluding cheeses where the manufacturer can demonstrate, to the satisfaction of the competent authorities, that the product does not pose a risk of staphylococcal enterotoxins.

1	2	3	4	5	6	7	8
EU	2.2.5 Unripened soft cheeses (fresh cheeses) made from milk or whey that has undergone pasteurization or a stronger heat treatment[47, 48]	Coagulase-positive staphylococci	5	2	10 CFU/g	100 CFU/g	
		Criteria apply at the end of the manufacturing process					
PRC	Hard cheeses (ripened cheeses, ripened blue cheeses, unripened cheeses)	Staphylococcus aureus 金黄色葡萄球菌	5	2	100 CFU/g	1000 CFU/g	GB 5420-2010
	Processed cheeses (content of hard cheese not less than 15%)	Staphylococcus aureus 金黄色葡萄球菌	5	2	100 CFU/g	1000 CFU/g	GB 25192-2010
EU	2.2.6 Butter and cream made from raw milk or milk that has undergone a lower heat treatment than pasteurisation	*E. coli*[49, 50]	5	2	10 CFU/g	100 CFU/g	
		Criteria apply at the end of the manufacturing process					
PRC	Cream (10-80% fat), butter (not less than 80% fat), dehydrated butter (not less than 99,8% fat)	Total number of bacterial colonies 菌落总数	5	2	10 000 CFU/g (ml)	100 000 CFU/g (ml)	GB 19646-2010
		Coliforms 大肠菌群	5	2	10 CFU/g (ml)	100 CFU/g (ml)	
		Staphylococcus aureus 金黄色葡萄球菌	5	1	10 CFU/g (ml)	100 CFU/g (ml)	
		Salmonella 沙门氏菌	5	0	0/25 g (ml)	–	

[47] There is no exact match for this category in the PRC system of standards.

[48] Excluding cheeses where the manufacturer can demonstrate, to the satisfaction of the competent authorities, that the product does not pose a risk of staphylococcal enterotoxins.

[49] Chinese standards do not include this control item.

[50] *E. coli* is used here as an indicator for the level of hygiene.

1	2	3	4	5	6	7	8
EU	2.2.7 Milk powder and whey powder[51]	Enterobacteriaceae[52]	5	0	10 CFU/g		
		Coagulase-positive staphylococci	5	2	10 CFU/g	100 CFU/g	
		Criteria apply at the end of the manufacturing process					
PRC	Milk powder (dried milk)	Total number of bacterial colonies 菌落总数	5	2	50 000 CFU/g	200 000 CFU/g	GB 19644-2010
		Coliforms 大肠菌群	5	1	10 куо / g	100 куо / g	
		Staphylococcus aureus 金黄色葡萄球菌	5	2	10 CFU/g	100 CFU/g	
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Whey powder and serum albumin powder (whey albumin)	Staphylococcus aureus 金黄色葡萄球菌	5	2	10 CFU/g	100 CFU/g	GB 11674-2010
		Salmonella 沙门氏菌	5	0	0/25 g	–	
EU	2.2.8 Ice-cream[53] and frozen dairy desserts	Enterobacteriaceae[54]	5	2	10 CFU/g	100 CFU/g	
		Criteria apply at the end of the manufacturing process					
PRC	Frozen drinks and their main components/ ingredients	Total number of bacterial colonies 菌落总数	5	2 (0)	$2{,}5 \times 10^4$ (10^2) CFU/g (ml)	10^5 (-) CFU/g (ml)	GB 2759-2015
		Coliforms 大肠菌群	5	2 (0)	10 (10) CFU/g (ml)	10^2 (-) CFU/g (ml)	
	Frozen drinks[55]	Salmonella 沙门氏菌	5	0	0	–	GB 29921-2013
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g (ml)	1000 CFU/g (ml)	

[51] The criterion shall not apply to products intended for further processing in the food industry.

[52] Chinese standards do not include this control item.

[53] Only ice creams containing milk ingredients.

[54] Chinese standards do not include this control item.

[55] All types of ice cream and food ice, made on the basis of potable water, sugar, milk, fruit, bean products, edible fats and oils, with the addition of food additives.

1	2	3	4	5	6	7	8
EU	2.2.9 Dried infant formulae and dried dietary foods for special medical purposes intended for infants below six months of age	Enterobacteriaceae	10	0	Absence in 10 g		
		Criteria apply at the end of the manufacturing process					
PRC	Foods for special medical purposes intended for infants below six months of age	*Enterobacter sakazakii* 阪崎肠杆菌	3	0	0/100 g	–	GB 25596-2010
EU	2.2.10 Dried follow-on formulae	Enterobacteriaceae	5	0	Absence in 10 g		
		Criteria apply at the end of the manufacturing process					
PRC	Dried infant formulae (for infants below 6 months of age)	Total number of bacterial colonies 菌落总数	5	2	1 000 CFU/g	10 000 CFU/g	GB 10765-2010
		Coliforms 大肠菌群	5	2	10 CFU/g	100 CFU/g	
		Staphylococcus aureus 金黄色葡萄球菌	5	2	10	100	
		Enterobacter sakazakii 阪崎肠杆菌	3	0	0/100 g	–	
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Dried follow-on formulae for children (6 -36 months of age)	Total number of bacterial colonies 菌落总数	5	2	1 000 CFU/g	10 000 CFU/g	GB 10767-2010
		Coliforms 大肠菌群	5	2	10 CFU/g	100 CFU/g	
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Cereal-based foods for children (6 -36 months of age)	Total number of bacterial colonies 菌落总数	5	2	1 000 CFU/g	10 000 CFU/g	GB 10769-2010
		Coliforms 大肠菌群	5	2	10 CFU/g	100 CFU/g	
		Salmonella 沙门氏菌	5	0	0/25 g	–	
	Foods (dried formulae) for special medical purposes (for children older than one year)	Total number of bacterial colonies 菌落总数	5	2	1 000 CFU/g	10 000 CFU/g	GB 29922-2013
		Coliforms 大肠菌群	5	2	10 CFU/g	100 CFU/g	
		Salmonella 沙门氏菌	5	0	0/25 g	–	
		Staphylococcus aureus 金黄色葡萄球菌	5	2	10	100	

1	2	3	4	5	6	7	8
EU	2.2.11 Dried infant formulae and dried dietary foods for special medical purposes intended for infants below six months of age	Presumptive *Bacillus cereus*[56]	5	1	50 CFU/g	500 CFU/g	
		Criteria apply at the end of the manufacturing process					
PRC	Foods for special medical purposes intended for infants below six months of age	Total number of bacterial colonies 菌落总数	5	2	1 000 CFU/g	10 000 CFU/g	GB 25596-2010
		Coliforms 大肠菌群	5	2	10 CFU/g	100 CFU/g	
		Staphylococcus aureus 金黄色葡萄球菌	5	2	10	100	
		Salmonella 沙门氏菌	5	0	0/25 g	–	
2.3 Egg products							
EU	2.3.1 Egg products	Enterobacteriaceae[57]	5	2	10 CFU/g or ml	100 CFU/g or ml	
		Criteria apply at the end of the manufacturing process.					
PRC	Eggs and egg products	Salmonella			Doesn't have to be detected		GB 21710-2016
		Total number of bacterial colonies 菌落总数 (for products made from liquid, dry and frozen eggs)	5	2	5×10^4 CFU/g	10^6 CFU/g	GB 2749-2015
		Total number of bacterial colonies 菌落总数 (whole eggs, except wine pickled eggs)	5	2	10^4 CFU/g	10^5 CFU/g	
		Coliforms 大肠菌群	5	2	10 CFU/g	10^2 CFU/g	

[56] Chinese standards do not include this control item.

[57] Chinese standards do not include this control item.

1	2	3	4	5	6	7	8
2.4 Fishery products							
EU	2.4.1 Shelled and shucked products of cooked crustaceans and molluscan shellfish	*E. coli*[58]	5	2	1 MNP/g	10 MNP/g	
		Coagulase-positive staphylococci	5	2	100 CFU/g	1000 CFU/g	
		Criteria apply at the end of the manufacturing process.					
PRC	Aquatic products[59] • cooked (heat-treated) aquatic products • intended to be eaten raw aquatic animal products	Vibrio parahaemolyticus 副溶血性弧菌	5	1	100 MPN/g	1000 MPN/g	GB 29921-2013
		Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g	1000 CFU/g	
	Aquatic animal products	Total number of bacterial colonies 菌落总数	5	2	5×10^4 CFU/g	10^5 CFU/g	GB 10136-2015
		Coliforms 大肠菌群	5	2	10 CFU/g	10^2 CFU/g	
2.5. Vegetables, fruits and products thereof							
EU	2.5.1 Precut fruit and vegetables (ready-to-eat)[60]	*E. coli*[61]	5	2	100 CFU/g	1000 CFU/g	
		Criteria apply during the manufacturing process					
PRC	Fruit and vegetable products (including marinated products) intended for human consumption	Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g (ml)	1000 CFU/g (ml)	GB 29921-2013
		Escherichia coli O 157:H7[63] 大肠埃希氏菌	5	0	0	–	
EU	2.5.2 Unpasteurised fruit and vegetable juices (ready-to-eat)[64]	*E. coli*[65]	5	2	100 CFU/g	1000 CFU/g	
		Criteria apply during the manufacturing process					
PRC	Drinks (except packed waters and carbonated drinks)[66]	Staphylococcus aureus 金黄色葡萄球菌	5	1	100 CFU/g (ml)	1000 CFU/g (ml)	GB 29921-2013

[58] Chinese standards do not include this control item.

[59] Products made from fish, crustaceans, molluscs, invertebrates, echinoderms and other aquatic organisms that have undergone heat treatment (steamed, cooked, baked, deep fried, etc.), suitable for direct consumption. Products that have been cleaned but not thermally processed, suitable for direct consumption, including live, fresh, frozen fish (fish slices), shrimp, cephalopods, live crab, live molluscs, as well as products made from live snails, crabs, molluscs, caviar by non-thermal treatment (salting, marinating, alcoholization), suitable for direct consumption.

[60] There is no exact match for this category in the PRC system of standards.

[61] Chinese standards do not include this control item.

[62] Products intended for direct consumption, made from vegetables and fruits: frozen vegetables / fruits, dried vegetables / fruits, fruit in vinegar, oils or salt, comfiture, jam, marmalade, candied fruits, syrup fruits, pickled vegetables, vegetable pasta and sauces (except tomato), products from fermented vegetables and fruits.

[63] Only for vegetables and fruits intended to be eaten raw.

[64] There is no exact match for this category in the PRC system of standards.

[65] Chinese standards do not include this control item.

[66] Vegetable and fruit juices, protein drinks, water-based mixed drinks, tea, coffee, vegetable drinks, dry drinks, and other beverages.

Annexes

Annex 1. **PRC standards referred to in tables 1 and 2**

Annex 2. **National Standard of the People's Republic of China**

Annex 1

PRC standards referred to in tables 1 and 2

PRC National Standard	Publication date	Effective date	Full name	Full name (Chinese to English translation)
GB 2707-2016	23.12.2016	23.06.2017	食品安全国家标准 鲜（冻）畜、禽产品	National food safety standard Products from fresh (frozen) animals, poultry
GB 2733-2015	13.11.2015	13.11.2016	食品安全国家标准 鲜、冻动物性水产品	National food safety standard
GB 5420-2010	26.03.2010	01.12.2010	食品安全国家标准 干酪 National food safety standard Cheese	National food safety standard Dry cheese
GB 6783-2013	29.11.2013	01.06.2014	食品安全国家标准 食品添加剂 明胶	National food safety standard Food supplement gelatin
GB 10136-2015	13.11.2015	13.11.2016	食品安全国家标准 动物性水产制品	National food safety standard Water products of animal origin
GB 10765-2010	26.03.2010	01.04.2011	食品安全国家标准 婴儿配方食品 National food safety standard Infant formula	National food safety standard Infant formulae
GB 10767-2010	26.03.2010	01.04.2011	食品安全国家标准 较大婴儿和幼儿配方食品 National food safety standard Older infants and young children formula	National food safety standard Older infants and young children formula
GB 10769-2010	26.03.2010	01.04.2011	食品安全国家标准 婴幼儿谷类辅助食品 National food safety standard Cereal-based complimentary foods for infants and young children	National food safety standard Cereal-based complimentary foods for infants and young children
GB 11674-2010	26.03.2010	01.12.2010	食品安全国家标准 乳清粉和乳清蛋白粉 National food safety standard Whey powder and whey protein powder	National food safety standard Whey powder and whey protein powder (serum albumin)
GB 13102-2010	26.03.2010	01.12.2010	食品安全国家标准 炼乳 National food safety standard Evaporated milk, sweetened condensed milk and formulated condensed milk	National food safety standard Sweetened condensed milk

PRC National Standard	Publication date	Effective date	Full name	Full name (Chinese to English translation)
GB 14967-2015	22.09.2015	22.09.2016	食品安全国家标准 胶原蛋白肠衣	National food safety standard Collagen sausage casing
GB 16869-2005	23.03.2005	01.01.2006	鲜、冻禽产品	National food safety standard Products from fresh, frozen poultry
GB 19301-2010	26.03.2010	01.06.2010	食品安全国家标准 生乳 National food safety standard Raw milk	National food safety standard Raw milk
GB 19302-2010	26.03.2010	01.12.2010	食品安全国家标准 发酵乳 National food safety standard Fermented milk	National food safety standard Fermented milk
GB 19644-2010	26.03.2010	01.12.2010	食品安全国家标准 乳粉 National food safety standard Milk powder	National food safety standard Milk powder
GB 19645-2010	26.03.2010	01.12.2010	食品安全国家标准 巴士杀菌乳 National food safety standard Pasteurized milk	National food safety standard Pasteurized milk
GB 19646-2010	26.03.2010	01.12.2010	食品安全国家标准 稀奶油、奶油和无水奶油 National food safety standard Cream, butter and anhydrous milkfat	National food safety standard Cream, butter and anhydrous milkfat
GB 22556-2008	03.12.2008	01.06.2009	豆芽卫生标准 Hygienic standard for bean sprouts	Hygienic standard for bean sprouts
GB 25191-2010	26.03.2010	01.12.2010	食品安全国家标准 调制乳 National food safety standard Modified milk	National food safety standard Modified milk
GB 25192-2010	26.03.2010	01.12.2010	食品安全国家标准 再制干酪 National food safety standard Process(ed) cheese	National food safety standard Process(ed) cheese
GB 25596-2010	21.12.2010	01.01.2012	食品安全国家标准 特殊医学用途婴儿配方食品通则	National food safety standard Provisions on infant food products for special medical purposes intended for infants under 6 months
GB 29921-2013	26.12.2013	01.07.2014	食品安全国家标准 食品中致病菌限量	National food safety standard Restrictions on the content of pathogenic microorganisms in food products

PRC National Standard	Publication date	Effective date	Full name	Full name (Chinese to English translation)
GB 29922-2013	26.12.2013	01.07.2014	食品安全国家标准 特殊医学用途配方食品通则	National food safety standard Provisions on food products for special medical purposes
GB 31619-2014	24.12.2014	24.05.2015	食品安全国家标准 食品添加剂 决明胶	National food safety standard Food supplement gelatin
GB 31638-2016	23.12.2016	23.06.2017	食品安全国家标准 酪蛋白	National food safety standard Casein
GB 2749-2015	13.11.2015	13.11.2016	食品安全国家标准 蛋与蛋制品	National food safety standard Eggs and egg products
GB 2759-2015	13.11.2015	13.11.2016	食品安全国家标准 冷冻饮品和制作料	National food safety standard Frozen beverages and ready-to-cook foods
GB 9959.1-2001	20.07.2001	01.12.2001	鲜、冻片猪肉 Fresh and frozen demi carcass pork	National food safety standard Fresh and frozen half carcass pork
GB/T 9959.2-2008	12.08.2008	01.12.2008	分割鲜、冻猪瘦肉 Fresh and frozen pork lean, cuts	Cut-up fresh and frozen lean pork
GB/T 9960-2008	27.06.2008	01.10.2008	鲜、冻四分体牛肉 Fresh and frozen beef, quarters	Fresh and frozen beef, quarters
GB/T 9961-2008	12.08.2008	01.12.2008	鲜、冻胴体羊肉 Fresh and frozen mutton carcass	Fresh and frozen mutton carcass
GB/T 17238-2008	27.06.2008	01.10.2008	鲜、冻分割牛肉 Fresh and frozen beef, cuts	Cut-up fresh and frozen beef
GB/T 17239-2008	12.08.2008	01.10.2008	鲜、冻兔肉 Fresh and frozen rabbit meat	Fresh and frozen rabbit meat
GB 21710-2016	23.12.2016	23.12.2017	食品安全国家标准 蛋与蛋制品生产卫生规范	National food safety standard Hygienic standards for the production of eggs and egg products
GB 25596-2010	21.12.2010	01.01.2012	食品安全国家标准 特殊医学用途婴儿配方食品通则	National food safety standard Provisions on infant food products for special medical purposes intended for infants under 6 months

Annex 2

National Standard of the People's Republic of China

Translation from Chinese (unofficial)

GB

GB29921–2013

National Food Safety Standard Maximum permissible levels of the content of pathogenic microorganisms in food products

Published on 26.12.2013 Entered into force on 01.07.2014

Published by the State Committee of the People's Republic of China on health protection and birth control

1. Scope

This standard sets requirements for indicators and limits of pathogenic microorganisms in food products, as well as control methods.

This standard is applicable to pre-packaged food products.

This standard is not applicable to canned food products.

2. Applicable principles

2.1. Irrespective of the established limits for the presence of pathogenic microorganisms, food manufacturers and processors, as well as traders, must implement control measures to ensure maximum possible reduction of the level of pathogenic microorganisms in foods and, accordingly, the possibility of risks occurrence.

2.2. The control inspections are carried out based on the methods specified in Table to this standard after sampling in accordance with the rules of GB4789.1.

3. Requirements for the criteria

The limits of the amount of pathogenic microorganisms in food products are given in Table to this standard.

Note 1: Food products were categorized for the sole purpose of fixing the scope of application of the limits of pathogenic microorganisms. The categories are used only in this table.

Note 2: n — number of selected samples for one batch of products; c — the maximum number of samples with a deviation from index m; m — restriction on the permissible content level of pathogenic microorganisms.

M — maximum permissible safe limit of the content of pathogenic microorganisms.

Explanation to the National Standard of the People's Republic of China GB29921–2013

1. The purpose of this standard

Pathogenic microorganisms often cause various diseases of both humans and animals. Among the disease-causing microorganisms found in food products, *Salmonella*, *Vibrio parahaemolyticus, E.coli, Staphylococcus aureus,* etc., should be the first to mention. According to statistics, every year the number of diseases caused by pathogens present in food products is about 40–50% of all reported cases of diseases in the People's Republic of China.

The Food Safety Act stipulates that the food safety standards establish permissible levels of the content of pathogenic microorganisms, residues of plant protection products, residues of veterinary drugs, heavy metals, contaminants and other substances harmful to the human body in food products and related products. At present, there are more than 500 current standards in the PRC dealing with restrictions on the level of pathogenic microbes in foods, while the indicators in these documents are sometimes duplicated, overlapping, contradictory to each other or simply lacking.

In order to control the contamination of food products by pathogenic microorganisms and to prevent the emergence of diseases caused by microbes present in foodstuffs, as well as to consolidate all scattered norms regarding the permissible levels of pathogenic microbes, the State Committee of the People's Republic of China on Health and Birth Control commissioned the State Center for Food Safety Risks Assessment to prepare a draft standard GB29921–2013 "Maximum Permissible Levels of Pathogenic Microorganisms in Food Products." The document was reviewed and approved by the Committee for Assessing National Standards in Food Safety and published on December 26, 2013. It came into force on July 1, 2014.

GB 29921 is a general standard and applies to pre-packaged foods. In cases where there are differences in criteria between those in GB 29921 and other PRC standards, the requirements of GB 29921 must be applied. All requirements for the permissible levels of pathogenic microorganisms in food products as set out in other standards must be repealed or brought in line with this standard.

2. Requirements for the implementation of this standard

Before the standard entered into force (07.01.2014), manufacturers and distributors of food products could optionally comply with this standard and the authorities encouraged them to do so. Since its entry into force, manufacturers, food safety control authorities and inspection authorities have become obliged to comply with this standard. Control of the levels of pathogenic microorganisms is carried out in accordance with the verification methods provided in GB29921.

Manufacturers and distributors must strictly adhere to the standards and rules for the production and distribution of food products or take measures to strictly control pathogenic microorganisms in the production and distribution process in order to ensure that products meet the requirements of GB29921 standard.

The PRC's State Committee on Health and Birth Control will monitor and assess the implementation of this standard and, based on the results, will propose amendments to improve it.

3. Principles and procedure for developing this standard

1) The main objective is health protection. The purpose of GB29921 is to control the contamination of food by pathogenic microorganisms and to prevent diseases caused by them. Having analyzed the causes of diseases associated with microorganisms present in food products within 2005–2011, the editorial expert group carried out a comprehensive risk assessment of the line "pathogenic microorganisms — food products" taking into account international experience on food safety management. Based on the results of monitoring and risk assessment, the maximum levels of the content of pathogenic microorganisms in high-risk food products have been identified with the aim of reducing the risk of foodborne diseases.

2) Determination of criteria based on scientific approach. On the basis of monitoring and assessment of the risks associated with the presence of pathogenic microorganisms in food products the editorial expert group carried out a comprehensive analysis of:

- possible harmful effects of the influence of pathogenic microorganisms or microbial products on human health;
- the content of pathogenic microorganisms in raw materials;
- changes that occur to pathogenic microorganisms at each stage of processing, storage, sale and consumption of food products.

The research has fully taken into account the correlation factors of the consumer groups of each category of products and the cost price (economic effect) of compliance with the standard in terms of permissible levels of pathogenic microorganisms. In general, this led to the application of a scientific approach to the determination of the permissible levels of pathogenic microorganisms in food products.

3) Consideration of foreign assessments and standards. Standard GB29921 took into account the results of risk assessment associated with the presence of pathogenic microorganisms in food products conducted by relevant international organizations such as CAC, ICMSF, etc., and the principles they used to develop the standards. Regulations and standards of the United States, the EU, Australia, New Zealand, Japan, Canada and some other countries and regions regarding restrictions on the content of pathogenic microorganisms in food products were also taken into account.

4) Consideration of the proposals of all interested parties, ensuring openness and transparency. Preparation of the standards was supported by regular meetings and seminars, where the proposals of the relevant agencies, research organizations, industry professional associations and enterprises were heard, and open internet surveys were conducted. On the basis of this, the text of the standard was finalized and its approval was conducted in an open and transparent manner.

4. Scope of application and the main content of the standard

Standard GB 29921 applies to pre-packaged foods. GB 29921 establishes the permissible levels of five pathogenic microorganisms (*Salmonella, Listeria monocytogenes, E.coli O 157: H7, Staphylococcus aureus and Vibrio parahaemolyticus*) in 11 categories of food products (see paragraph 5).

Manufacturers and distributors of non-pre-packaged foods must strictly adhere to hygiene rules in the process of producing and distributing food products to minimize the risk of their contamination by pathogenic microorganisms.

Canned foods must meet the requirements of commercial sterility; therefore this standard is not applicable to them.

5. Main food categories to which the standard applies

1) Cooked meat products (thermally processed) or intended to be eaten raw: products from cooked (marinated, stewed, smoked, roasted, steamed, boiled, etc.) and raw (fermented or processed by special technologies) meat (pork, beef, lamb, chicken, rabbit, dog, etc.), suitable for direct consumption.
2) Aquatic products: cooked (thermally processed) aquatic products (products made from fish, crustaceans, molluscs, invertebrates, echinoderms and other aquatic organisms that have undergone heat treatment — steamed, cooked, baked, deep fried, etc.— suitable for direct consumption); raw aquatic products intended for the consumption (products that have been cleaned but not thermally processed, suitable for direct consumption, including live, fresh, frozen fish (fish slices), shrimp, cephalopods, live crab, live molluscs, as well as products made from live snails, crabs, molluscs, caviar by non-thermal treatment — salting, marinating, alcoholization,— suitable for direct consumption); vegetable aquatic products intended for consumption — algae (products made from algae, suitable for direct consumption, which have undergone a certain treatment, including thermal — boiled, deep fried).
3) Egg products intended for consumption: products suitable for direct consumption, made from poultry eggs, including cooked eggs.
4) Cereal products: cooked (thermally processed) grain products (including pastries); cooked (thermally processed) flour-rice products with filling; flour and rice instant (quick-cooking) products: products made from rice, wheat, other cereals, roots, corn, etc., whether or not filled, suitable for direct consumption (cereal flakes, cereals / cooked porridge / instant noodles, etc.), as well as bakery products made from cereals, fats, eggs, sugar and food additives, suitable for direct consumption (pastries, cakes, cookies, bread, etc.).
5) Bean products intended for consumption (fermented and not fermented): furu (soy-marinated bean cheese), fermented black bean sauce, natto and other products prepared by wet fermentation, as well as soy milk, tofu (soy cheese), hard soy cheese, soy protein and other products prepared by wet methods without fermentation.
6) Chocolate and cocoa products: chocolate, including made from cocoa butter substitutes, chocolate fillings and creams; cocoa products (liquid, solid, cocoa powder).

7) Fruit and vegetable products (including marinated) intended for consumption: products intended for direct consumption, made from fruits and vegetables: frozen vegetables / fruits, dried vegetables / fruits, fruit in vinegar, oils or salt, confiture, jam, marmalade, candied fruits, syrup fruits, pickled vegetables, vegetable pasta and sauces (except tomato), products from fermented vegetables and fruits.
8) Beverages (except packed potable water and carbonated drinks): fruit and vegetable juices, protein drinks, water-based mixed drinks, tea, coffee, vegetable drinks, dry drinks, and other beverages.
9) Frozen beverages (ice cream, food ice): all types of ice cream and food ice, made on the basis of drinking water, sugar, milk, fruit, bean products, edible fats and oils, with the addition of food additives.
10) Condiments intended for consumption: soy sauce (fermented and mixed), soy paste (fermented and mixed), condiments from aquatic products (fish, oysters, shrimp sauce), combined condiments (mayonnaise, broths, juices and other condiments with animal and plant bases). This standard does not apply to spices and condiments made therefrom.
11) Nuts and seeds: paste from nuts and seeds, pickled nuts etc.

6. Determination of criteria for pathogenic microorganisms within the framework of the standard

1) *Salmonella* (2nd risk group). The standard indicators were approved on the basis of similar standards in force at CAC, ICMSF, the EU, Australia, New Zealand, the USA, Canada, SAR Siangan (Hong Kong), Hong Kong, Taiwan. General requirements: n = 5, c = 0, m = 0.
2) *Listeria monocytogenes* (2nd risk group). Given the lack of sufficient data from clinical trials in the PRC, the standard criteria were approved based on the reporting data of FAO, WHO, and on the basis of the current standards of CAC, ICMSF, the EU etc. General requirements: n = 5, c = 0, m = 0.
3) *E.coli* O 157: H7 (2nd risk category). Although the PRC did not record cases of mass infection by this microorganism of consumers of cooked meat and meat products, in order to reduce the risk of disease this criteria was adopted at a high level. General requirements: n = 5, c = 0, m = 0.
4) *Staphylococcus aureus* (3rd risk group). For China, it is one of the major causes of food poisoning associated with the enterotoxins it produces. The standard indicators were approved on the basis of similar standards in force at CAC, ICMSF, Australia, New Zealand, SAR Siangan (Hong Kong), Taiwan. General requirements (for 8 product categories): n = 5, c = 1, m = 100 CFU / g (ml), M = 1000 CFU / g (ml); for condiments: n = 5, c = 2, m = 100 CFU / g (ml), M = 10 000 CFU / g (ml).
5) *Vibrio parahaemolyticus* (3rd risk group). For the seaside and a number of inland regions of the People's Republic of China it is one of the main causes of food poisoning. It is largely contained in products of the aquatic industry and in meat products in case of cross-contamination. The standard criteria were approved based on similar criteria in force at the ICMSF, the EU, Canada, Japan, Australia, New Zealand, SAR Siangan (Hong Kong). General requirements: n = 5, c = 1, m = 100 MPN / g (ml), M = 1000 MPN / g (ml).

7. Other

Permissible levels of pathogenic microorganisms for milk, dairy products, special products of supplementary feeding are determined by separate national food safety standards.

Since the risk of contamination with pathogenic microorganisms of such products (or raw materials) such as honey, fats and oils, emulsified fats, marmalades, sweets, edible fungi, etc., is extremely low, taking into account the norms and regulations of CAC, ICMSF, it was decided not to establish the corresponding criteria for these products for a while. However, criteria of the standards may be specified and amended based on the results of monitoring and risk assessment.

Infection of food products with the Shigella microorganism can occur due to contact with dirty hands or carrying flies, improper treatment of potable water, sewage leakage, etc. Considering the situation in the PRC and long-term monitoring data, this microorganism is extremely rare in processed foods. Subject to the norms and regulations in force at CAC, ICMSF, the EU, the USA, Canada, Australia, New Zealand, this position was not included in the list of food content restrictions under this standard.

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