MINISTRY OF COMMERCE

Interministerial Decree of 2 Moharram 1438 corresponding to 4 October, 2016 setting the microbiological criteria for foodstuffs.

The minister of commerce,

The minister of industry and mines,

The minister of agriculture, rural development and fisheries,

The minister of water resources and environment,

The minister of health, population and hospital reform,

Having regard to presidential Decree no. 15-125 of 25 Rajab 1436 corresponding to 14 May, 2015, as amended, for appointing the members of the Government;

Having regard to executive Decree no. 04-189 of 19 Joumada El Oula 1425 corresponding to 7 July, 2004, laying down hygiene and sanitary measures applicable to fishery and aquaculture products;

Having regard to executive Decree no. 15-172 of 8 Ramadhan 1436 corresponding to 25 June, 2015, laying down the conditions and procedures applicable to the microbiological specifications of foodstuffs, in particular Article 8 thereof;

Having regard to the Decree of 14 Safar 1415 corresponding to 23 July, 1994, as amended and supplemented, relating to the microbiological specifications of certain foodstuffs;

Having regard to the interministerial Decree of 22 Dhou El Hidja 1426 corresponding to 22 January, 2006, modified and completed, fixing the proportions of elements contained in natural mineral waters and spring waters, and the conditions of their treatment or the authorised additions;

Hereby decree:

Article 1. — In application of the provisions of Article 8 of executive Decree no. 15-172 of 8 Ramadhan 1436 corresponding to 25 June, 2015, as mentioned above, the purpose of this Decree is to set the microbiological criteria for foodstuffs.

Art. 2. — Within the provisions of this Decree, the following meanings are understood:

- compliance with microbiological criteria: obtaining satisfactory or acceptable results referred to in the Annexes to this Decree, for microbiological analyses based on the values fixed for said criteria, taking into account the regulations in force concerning the methods of taking samples and conducting the analysis;

— sampling plan: planned procedure allowing for the selection or taking of separate samples of a batch, in order to obtain the information sought, such as a decision on the conformity of the batch. A sampling plan defines the number of individual samples, and the rules to evaluate whether or not the batch conforms to the specification;

— interpretation of analysis results: conclusion on the quality of foodstuffs, as regards their acceptability for the health of consumers, in accordance with the criteria set out in the Annexes to this Decree;

— germ: product obtained through germination and growth of a seed in water or in another medium, harvested before the first leaves grow, and intended to be eaten whole, with the seed.

Art. 3. — The categories of foods to which the provisions of this Decree apply are:

— milk and dairy products;

— red and white meat and their derivatives;

— products of fishing and aquaculture;

— animal and vegetable fats;

— preserved and semi-preserved foods;

— foodstuff for infants and young children;

— cereals and derived products;

— pre-cooked meals;

— water, fruit and vegetable juices and non-alcoholic drinks;

— fruits, vegetables and plant-based products;

— eggs, egg products, pastries and cream pastries;

— confectionery;

— the other foodstuffs provided for in point 15 of Annex I to this Decree.

Art. 4. — The foodstuffs referred to in Article 3 above must not contain micro-organisms or their toxins, or metabolites in quantities which pose an unacceptable risk to the health of the consumer.

Art. 5.— Parties responsible for the release of foodstuffs must ensure compliance with the microbiological criteria set out in Annexes I and II to this Decree.

Art. 6. —The microbiological criteria relating to the foodstuffs listed in Article 3 above are set out in Annex I to this order.

Art. 7.— The techniques of test sampling and interpretation of the results of microbiological analyses of foodstuffs are laid down in Annex II to this order.

Art. 8. — The parameters n, c, m and M used in the Annexes of this order represent:

—- n: number of units constituting the sample;

— m: number of germs present in one gram or one millilitre of product analysed, which corresponds to the value below which the quality of the product is considered satisfactory;

— M: number of germs present in one gram or one millilitre of product analysed, which corresponds to the value above which the quality of the product is considered unacceptable;

— c: maximum number of sample units of the analysed product that may exceed "m" while being less than "M" without the batch being rejected.

Art. 9. — Preserved foods, whatever the nature of the packaging used, must satisfy, before their release for consumption, the stability tests envisaged by the regulation in force.

Art. 10. — Stability tests are excluded for preserved foods packed in metal packaging, glass, plastic, metal-plastic complexes or cardboard-metal-plastic complexes with major defects such as bulging, flaking and leakage.

Art. 11. — At the end of the various tests carried out on preserved food:

— no apparent defect, in particular bulging or leakage, should be noted;

— the pH variation between the parboiled sampling units and the control sample unit set at room temperature during the periods selected must not exceed 0.5 units.

Art. 12 — Any provision contrary to this Decree, in particular the provisions of the Decree of 14 Safar 1415 corresponding to 23 July, 1994, modified and supplemented, relating to the microbiological specifications of certain foodstuffs, are abrogated.

Art. 13. — The provisions of this Decree will enter into force one year after the date of its publication in the *Official Journal.*

Art. 14. — This Decree will be published in the *Official Journal* of the Democratic Republic of Algeria.

Issued in Algiers, on 2 Moharram 1438, corresponding to 4 October, 2016.

The minister of commerce — Bekhti BELAIB

The minister of industry and mines — Abdesselem BOUCHOUAREB

The minister of agriculture, rural development and fisheries — Abdesselam CHELGHOUM

The minister of water resources, the environment and fisheries — Abdelkader OUALI

The minister of health, population and hospital reform — Abdelmalek BOUDIAF

ANNEX 1

Microbiological criteria for foodstuffs

1 - Milk and dairy products

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (ufc (1)/g or ufc/ml)	
		n	c	m	M
raw milk	Aerobic germs at 30□C	5	2	3.10^5	3.10^6
	Coagulase + staphylococci	5	2	10^2	10^3
	Thermotolerant coliforms	5	2	5.10^2	5.10^3
	Salmonella	5	0	Absent in 25 ml	
	Antibiotics	1	—	Absent in 1 ml	
	Listeria monocytogenes	5	0	100	
Pasteurised milk and other dairy products pasteurised liquids	Aerobic germs at 30□C	5	2	10^4	10^5
	Enterobacteriaceae	5	0	10	
	Salmonella	5	0	Absent in 25 ml	
UHT milk and sterilised milk	Aerobic germs at 30□C	5	0	10/0.1ml	
Milk powder and whey powder	Enterobacteriaceae	5	2	10	10^2
	Coagulase + staphylococci	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	
Cheeses made from raw milk	*Escherichia coli*	5	2	10^4	10^5
	Coagulase + staphylococci	5	2	10^3	10^4
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Milk-based cheese that has undergone heat treatment lower than pasteurisation and cheese ripened by pasteurised milk or whey or having undergone heat treatment higher than pasteurisation	*Escherichia coli*	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Unripened soft cheeses (fresh cheese) made from pasteurised milk or whey or having undergone heat treatment higher than pasteurisation	*Escherichia coli*	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Cream made with raw milk	*Escherichia coli*	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10^3	10^4

	Salmonella	5	0	Absent in 25 g
	Listeria monocytogenes	5	0	100

1- Milk and dairy products
(continued)

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (ufc (1)/g or ufc/ml)	
		n	c	m	M
Pasteurised cream	Enterobacteriaceae	5	2	10	10^2
	Coagulase + staphylococci	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Ice-cream and frozen dairy desserts	Aerobic germs at 30□C	5	2	10^5	10^6
	Coagulase + staphylococci	5	2	10	10^2
	Enterobacteriaceae	5	2	10	10^2
	Enterobacteriaceae (2)	5	2	50	5.10^2
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Raw butter	*Escherichia coli*	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Pasteurised butter	Enterobacteriaceae	5	2	10	10^2
	Coagulase + staphylococci	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Concentrated butter	Aerobic germs at 30□C	5	2	5.10^2	5.10^3
	Coagulase + staphylococci	5	0	Absent	
	Total coliforms	5	0	Absent	
	Salmonella	5	0	Absent in 25 g	
Fermented milks (Lben, Raib etc.)	Total coliforms	5	2	3.10^4	3.10^5
	Thermotolerant coliforms	5	2	30	3.10^2
	Coagulase + staphylococci	5	2	3.10^2	3.10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Yoghurts or yoghurts and dairy desserts	Enterobacteriaceae	5	2	10	10^2
	Coagulase + staphylococci	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Casein-caseinates	Aerobic germs at 30□C	5	2	3.10^4	3.10^5
	Coagulase + staphylococci	5	0	Absent	
	Total coliforms	5	0	Absent in 0.1 g	
	Salmonella	5	0	Absent in 25 g	

(1) CFU: colony-forming unit

(2) This criterion applies to the stage of portioning in the retail trade, i.e. during fractioning or treatment for direct sale to the final consumer.

2- Red meats and derivatives

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Carcasses, half carcasses, quarter or parts of cattle, sheep, goats and horses (1)	Pseudomonas	5	2	10^4	10^5
	Coagulase + staphylococci	5	2	10^2	10^3
	Enterobacteriaceae	5	2	10^3	10^4
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	Absent in 25 g	
Unit portion of red meat, chilled or frozen (2)	Pseudomonas (3)	5	2	10^5	10^6
	Escherichia coli	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
Minced meat	Aerobic germs at 30°C	5	2	5.10^5	5.10^6
	Escherichia coli	5	2	50	5.10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
Whole red offal	Aerobic germs at 30°C	5	2	5.10^5	5.10^6
	Pseudomonas (3)	5	2	5.10^5	5.10^6
	Escherichia coli	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
Sliced red offal	Aerobic germs at 30°C	5	2	5.10^5	5.10^6
	Pseudomonas (3)	5	2	5.10^5	5.10^6
	Escherichia coli	5	2	10^3	10^4
	Salmonella	5	0	Absent in 25 g	
Mechanically separated meat (VSM) (4)	Aerobic germs at 30°C	5	2	5.10^5	5.10^6
	Escherichia coli	5	2	50	5.10^2
	Salmonella	5	0	Absent in 10 g	
Meat preparations	*Escherichia coli*	5	2	5.10^2	5.10^3
	Coagulase + staphylococci	5	2	5.10^2	5.10^3
	Salmonella	5	0	Absent in 25 g	

(1) The sample is taken after cauterisation of the surface.

(2) The sample concerns depth plus surface without cauterisation.

(3) This analysis is not carried out when the meat is in airtight packaging.

(4) These criteria apply to products using meat removed from bones, covered with flesh after deboning, by mechanical means, resulting in the destruction or alteration of the fibrous structure of the muscles.

3- Meats from poultry, rabbits and their derivatives

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Poultry, whole rabbits (1) and cuts of poultry with skin	*Escherichia coli*	5	2	5.10^3	5.10^4
	Coagulase + staphylococci	5	2	10^3	10^4
	Salmonella	5	0	Absent in 10 g	
Cuts of poultry without skin and cuts of rabbits	*Escherichia coli*	5	2	10^3	10^4
	Coagulase + staphylococci	5	2	5.10^2	5.10^3
	Salmonella	5	0	Absent in 10 g	
Poultry products to be consumed cooked	Escherichia coli	5	2	5.10^2	5.10^3
	Coagulase + staphylococci	5	2	5.10^2	5.10^3
	Campylobacter spp, thermotolerant	5	0	10^2	
	Salmonella	5	0	Absent in 25 g	
Raw poultry offal	*Escherichia coli*	5	2	10^3	10^4
	Coagulase + staphylococci	5	2	5.10^2	5.10^3
	Salmonella	5	0	Absent in 10 g	
Minced poultry meat	Aerobic germs at 30□C	5	2	5.10^6	5.10^7
	Escherichia coli	5	2	5.10^2	5.10^3
	Coagulase + staphylococci	5	2	5.10^2	5.10^3
	Campylobacter spp, thermotolerant	5	0	10^2	
	Salmonella	5	0	Absent in 25 g	
Mechanically separated meat (VSM) (2)	Aerobic germs at 30□C	5	2	5.10^5	5.10^6
	Escherichia coli	5	2	50	5.10^2
	Salmonella	5	0	Absent in 10 g	

(1) Samples are taken from the whole poultry carcasses on either side of the breast bone (pectoral muscles and skin). For rabbits, the sample is taken from the leg.

(2) These criteria apply to products using meat removed from bones, covered with flesh after deboning, or from poultry carcasses, by mechanical means, resulting in the destruction or alteration of the fibrous structure of the muscles.

4- Meat based cured products

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Raw meats for consumption cooked (1)	*Escherichia coli*	5	2	5.10^2	5.10^3
	Coagulase + staphylococci	5	2	5.10^2	5.10^3
	Sulphite-reducing anaerobes	5	2	30	3.10^2
	Salmonella	5	0	Absent in 25 g	
Cooked meats not containing starches (1)	Aerobic germs at 30□C	5	2	10^6	10^7
	Escherichia coli	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	50	5.10^2
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Cured meats cooked with starches (1)	Aerobic germs at 30□C	5	2	10^6	10^7
	Escherichia coli	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	50	5.10^2
	Bacillus cereus	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	

(1) Husks are only included in the sample submitted for analysis if they are intended for consumption.

5. Fish and aquaculture products

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Fish and aquaculture products made from fish species associated with a large amount of histidine (1) (2)	Histamine	9	2	100 mg/kg	200 mg/kg
Fish and aquaculture products having undergone enzyme maturing processing in brine, made from species of fish associated with a large amount of histidine with the exception of fish sauce (1)	Histamine	9	2	200 mg/kg	400 mg/kg
Fish sauce produced by fermentation of Fish and aquaculture products	Histamine	1	—	400 mg/kg	
Raw fish, cephalopods and molluscs (except live bivalve molluscs) (3)	Aerobic germs at 30□C	5	2	10^6	10^7
	Thermotolerant coliforms	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
Live bivalve molluscs and live marine echinoderms, tunicates and gastropods (4) (5)	*Escherichia coli*	5	1	230 MPN*/100g	700 MPN/100g
	Salmonella	5	0	Absent in 25 g	
Shelled raw crustaceans	Aerobic germs at 30□C	5	2	10^6	10^7
	Thermotolerant coliforms	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	
Whole raw crustaceans and raw echinoderms	Aerobic germs at 30□C	5	2	10^6	10^7
	Thermotolerant coliforms	5	2	10	10^2
	Sulphite-reducing anaerobes	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	
Cooked whole crustaceans and cooked echinoderms	Aerobic germs at 30□C	5	2	10^5	10^6
	Thermotolerant coliforms	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
	Aerobic germs at 30□C	5	2	5.10^5	5.10^6
	Escherichia coli	5	2	4	40

Shelled and shucked products of cooked crustaceans and molluscs	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	

* mpn: most probable number.

5- Fish and aquaculture products (continued)

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (ufc/g or ufc/ml)	
		n	c	m	M
Fish and other fishery products smoked, salted, pickled etc.	Aerobic germs at 30□C	5	2	10^6	10^7
	Thermotolerant coliforms	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Preparations of raw fish and other fishery products to be consumed cooked	Thermotolerant coliforms	5	2	5.10^3	5.10^4
	Coagulase + staphylococci	5	2	50	5.10^2
	Salmonella	5	0	Absent in 25 g	
Preparations of raw fish and other fishery products to be consumed as is	Thermotolerant coliforms	5	2	10^3	10^4
	Coagulase + staphylococci	5	2	50	5.10^2
	Bacillus cereus (6)	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Delicatessen made from fish and fishery products to be consumed as is	Aerobic germs at 30□C	5	2	10^6	10^7
	Thermotolerant coliforms	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Bacillus cereus (6)	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Shrimps, fish and dried echinoderms	Thermotolerant coliforms	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	50	5.10^2
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Frozen or deep-frozen shucked snails	Sulphite-reducing anaerobes	5	0	10^3	
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	Absent in 25 g	

(1) Especially fish species rich in histidine of the*Scombridae* (tuna, bonito, mackerel), *Clupeidae* (herring, sardines), *Engraulidae* (anchovy), *Coryfenidae* (mahi mahi), *Pomatomidae and Scombresosidae families.*

(2) The sampling is taken at the level of the flesh.

(3) The sample is taken at the surface and at depth after the skin has been removed for the fish.

(4) The sample at the level of the flesh and the intra-valvary fluid.

(5) Grouped sample comprising at least ten different animals.

(6) This analysis is carried out in the case where the preparation includes a starch.

6- Animal and vegetable fats

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Non rendered animal fats	Aerobic germs at 30□C	5	2	10^4	10^5
	Escherichia coli	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
Rendered animal fats	Aerobic germs at 30□C	5	2	5.10^2	5.10^3
	Escherichia coli	5	0	Absent	
	Coagulase + staphylococci	5	0	Absent	
	Salmonella	5	0	Absent in 25 g	
Anhydrous milkfat (AMF)	Aerobic germs at 30□C	5	2	5.10^2	5.10^3
	Total coliforms	5	0	Absent	
	Coagulase + staphylococci	5	0	Absent	
	Salmonella	5	0	Absent in 25 g	
S'men (clarified salted butter)	Aerobic germs at 30□C	5	2	5.10^2	5.10^3
	Total coliforms	5	0	Absent	
	Yeast and mildew	5	0	Absent	
	Salmonella	5	0	Absent in 25 g	
Margarine and other vegetable fats	Aerobic germs at 30□C	5	2	10^2	10^3
	Yeast and mildew	5	2	10	10^2
	Escherichia coli	5	2	4	40
	Coagulase + staphylococci	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	

7- Preserved and semi-preserved products

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Semi-preserved pasteurised products of animal origin (1)	Aerobic germs at 30□C	5	1	10^4	10^5
	Total coliforms	5	0	Absent	
	Sulphite-reducing anaerobes	5	0	Absent	
	Coagulase + staphylococci	5	0	Absent	
	Salmonella	5	0	Absent in 25 g	
Semi-preserved unpasteurised products of animal origin (anchovies salted or in oil etc.) (1)	Aerobic germs at 30□C	5	1	10^5	10^6
	Total coliforms	5	0	Absent	
	Sulphite-reducing anaerobes (2)	5	0	Absent	
	Coagulase + staphylococci	5	0	Absent	
	Salmonella	5	0	Absent in 25 g	
Semi-preserved products of vegetable origin	Aerobic germs at 30□C	5	2	10^4	10^5
	Escherichia coli	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	

Preserved products	Stability tests	Refer to the procedure laid down by the regulations in force.

(1) Revitalisation of the initial suspension for two (2) hours at laboratory temperature for pasteurised semis-preserved products during 30 minutes à 45 minutes for unpasteurised semi-preserved products.

(2) Special case of salted anchovies: Sulphite-reducing anaerobes: m = M = less than 10 cfu/g.

Foodstuffs for infants and young children

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (ufc/g or ufc/ml)	
		n	c	m	M
Preparations for infants	Aerobic germs at 30□C	5	2	10^3	10^4
	Yeast and mildew	5	2	10^2	10^3
	Bacillus cereus	5	1	50	5.10^2
	Coagulase + staphylococci	5	0	Absent	
	Enterobacteriaceae	10	0	Absent in 10 g	
	Cronobacter spp	5	0	Absent in 10 g	
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	Absent in 25 g	
Preparations for follow-on formulae for infants and young children	Aerobic germs at 30□C	5	2	10^3	10^4
	Coagulase + staphylococci	5	0	Absent	
	Enterobacteriaceae	5	0	Absent in 10 g	
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	Absent in 25 g	
Foods for infants more than six months old and young children	Aerobic germs at 30□C	5	2	10^3	10^4
	Bacillus cereus (1)	5	1	10^2	10^3
	Coagulase + staphylococci	5	0	Absent	
	Enterobacteriaceae	5	0	10	
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	Absent in 25 g	
Preparations requiring cooking before consumption (2)	Aerobic germs at 30□C	5	2	10^4	10^5
	Total coliforms	5	2	10^2	10^3
	Yeast and mildew	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	

(1) This criterion is only checked for cereal-based processed foodstuffs.

(2) "Cooking" means heating the product at a temperature of at least 100° C for at least 3 minutes.

9- Cereals and derived products

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Flour and semolina	*Escherichia coli*	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Bacillus cereus	5	2	10^3	10^4
	Mildew	5	2	10^3	10^4
	Sulphite-reducing anaerobes	5	2	10^2	10^3
Grain cereal grains for consumption and not for processing	Mildew	5	2	10^3	10^4
	Sulphite-reducing anaerobes	5	2	10^2	10^3
Couscous and pasta	Mildew	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	10^2	10^3
Pre-cooked dried pasta (diouls, ktaef, rechta etc.)	Yeast and mildew	5	2	10^4	10^5
	Escherichia coli	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10^3	10^4
	Salmonella	5	0	Absent in 25 g	
Fresh pasta (plain or stuffed)	*Escherichia coli*	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	10^2	10^3
	Bacillus cereus	5	2	10^3	10^4
	Mildew	5	2	10^4	10^5
	Salmonella	5	0	Absent in 25 g	
Biscuit products	Aerobic germs at 30□C	5	2	10^3	10^4
	Escherichia coli	5	2	3	30
	Mildew	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella (1)	5	0	Absent in 25 g	

9- Cereals and derived products (continued)

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Other products derived from cooked cereals (m'semen, baghrir, any type of breads etc.)	Aerobic germs at 30°C	5	2	10^3	10^4
	Escherichia coli	5	2	3	30
	Mildew	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella (1)	5	0	Absent in 25 g	

(1) Search for *Salmonella* only in cereal derivatives containing eggs.

Prepared dishes

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Prepared dishes where all ingredients are cooked	Aerobic germs at 30°C	5	2	3.10^5	3.10^6
	Escherichia coli	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	50	5.10^2
	Bacillus cereus (1)	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
Prepared dishes including one ingredient, at least, not cooked	Aerobic germs at 30°C	5	2	10^6	10^7
	Escherichia coli	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	50	5.10^2
	Bacillus cereus (1)	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Sandwiches	*Escherichia coli*	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	50	5.10^2
	Salmonella	5	0	Absent in 25 g	

(1) This analysis is carried out in the case where the preparation includes a starch.

11- Water, drinks and fruit and vegetable juices

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Natural mineral water and spring water	*Escherichia coli*	5	0	Absent in 250 ml	
	Enterococci	5	0	Absent in 250 ml	
	Sulphite-reducing anaerobe spores	5	0	Absent in 50 ml	
	Total coliforms	5	0	Absent in 250 ml	
	Pseudomonas aeruginosa	5	0	Absent in 250 ml	
Carbonated drinks	Aerobic germs at 30□C	5	3	10	10^2
	Yeast and mildew	5	2	10	10^2
Non-carbonated drinks heat treated	Total coliforms	5	0	10	
	Thermotolerant coliforms	5	0	Absent	
	Enterococci	5	0	Absent	
	Sulphite-reducing anaerobes	5	0	Absent in 20 ml	
	Yeast and mildew	5	2	10	10^2
Drinks based on fruit juice and milk	Aerobic germs at 30□C	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	1	10
	Enterobacteriaceae	5	2	1	10
	Yeast and mildew	5	2	10	10^2
	Salmonella	5	0	Absent in 25 ml	
Fruit and vegetable juices not pasteurised	*Escherichia coli*	5	2	10^2	10^3
	Yeast and mildew	5	2	10^4	10^5
	Salmonella	5	0	Absent in 25 ml	
Fruit and vegetable juices, nectars and pasteurised fruity drinks	Yeast and mildew	5	2	10	10^2

12- Vegetables, fruits, plants and plant-based products

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Fruits and fresh vegetables	*Escherichia coli*	5	2	10^2	10^3
Ready-to-eat fruit and vegetables (1)	Aerobic germs at 30□C	5	2	5.10^6	5.10^7
	Lactic flora	5	2	5.10^5	5.10^6
	Escherichia coli	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Spices, spice mixes and dried aromatic herbs	*Escherichia coli*	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	10^3	10^4
	Yeast and mildew	5	2	10^4	10^5
	Coagulase + staphylococci	5	2	10^2	10^3
	Bacillus cereus (2)	5	2	10^3	10^4
	Salmonella	5	0	Absent in 25 g	
Dried herbs (tea, chamomile etc.)	Aerobic germs at 30□C	5	2	10^4	10^5
	Thermotolerant coliforms	5	2	10	10^2
	Mildew	5	2	10^3	10^4
	Sulphite-reducing anaerobes	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	
Fresh aromatic herbs	Aerobic germs at 30□C	5	2	5.10^6	5.10^7
	Escherichia coli	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	

12- Vegetables, fruits, plants and plant-based products (continued)

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Germinated seeds ready to be consumed	*Escherichia coli*	5	2	10^2	10^3
	Bacillus cereus	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Germs (3)	*Escherichia coli* producers of shiga-toxins (STEC) 0157,026, 0111, 0103, 0145 and 0104: H4	5	0	Absent in 25 g	
Dried fruits (dry figs, dates, prunes, raisins etc.)	*Escherichia coli*	5	2	10	10^2
	Mildew	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
Oil seeds (walnuts, almonds, peanuts etc.)	*Escherichia coli*	5	2	2	20
	Mildew	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
Coffee and derivatives	Total coliforms	5	1	10	10^2
	Yeast and mildew	5	2	10^2	10^3
Fresh fruit mix preparations (fruit salad etc.)	Yeast and mildew	5	2	10^4	10^5
	Escherichia coli	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	

(1) Fruits and vegetables washed, peeled, drained, cut, grated, packed, under modified atmosphere or not.

(2) The *bacillus cereus* are only checked for spices and spice blends.

(3) Excluding germs which have undergone an effective heat treatment to eliminate *salmonella spp* and STEC.

13- Pastries and egg products

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (ufc/g or ufc/ml)	
		n	c	m	M
Eggs in the shell	*Salmonella* (1)	5	0	Absent in 25 g	
Pasteurised liquidised eggs, egg powder and albumen, other processed egg products	Aerobic germs at 30□C	5	2	5.10^4	5.10^5
	Total coliforms	5	0	10^2	
	Yeast and mildew (2)	5	0	10^2	
	Salmonella	5	0	Absent in 25 g	
Preparations for cakes containing eggs	Coagulase + staphylococci	5	2	10^2	10^3
	Mildew	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
Cream pastries, creams, fruit mousse, tiramisu etc.	Aerobic germs at 30□C	5	2	10^5	10^6
	Escherichia coli	5	2	10	10^2
	Sulphite-reducing anaerobes	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Any other egg product which has undergone heat treatment	Aerobic germs at 30□C	5	2	10^5	10^6
	Coagulase + staphylococci	5	0	Absent	
	Enterobacteriaceae	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	

(1) *Salmonella* must not be detected either inside or outside the egg shell.

(2) Applies to egg powder only.

14 - Confectionery

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Chocolate, compound chocolate and derivative products	Aerobic germs at 30□C	5	2	10^3	10^4
	Enterobacteriaceae	5	2	10^2	10^3
	Yeast and mildew	5	2	10^2	10^3
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
	Listeria monocytogenes	5	0	100	
Cocoa powder	Aerobic germs at 30□C	5	2	10^5	10^6
	Enterobacteriaceae	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Yeast	5	2	10^2	10^3
	Mildew	5	2	10^3	10^4
	Salmonella	5	0	Absent in 25 g	
Other confectionery products (caramels, sweets, nougats, halkouma etc.)	Aerobic germs at 30□C	5	2	10^5	10^6
	Total coliforms	5	2	2	10^2
	Mildew	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	

15- Other foodstuffs

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Aromas and additives powder	Aerobic germs at 30□C	1	—	10^4	
	Total coliforms	1	—	10^2	
	Escherichia coli	1	—	10	
	Yeast and mildew	1	—	10^3	
	Coagulase + staphylococci	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	
Flavoured ice cream and sorbets	Aerobic germs at 30□C	5	2	10^3	10^4
	Total coliforms	5	0	3	
	Yeast and mildew	5	0	10^2	
	Salmonella	5	0	Absent in 25 g	
Dehydrated soups	Aerobic germs at 30□C	5	2	3.10^5	3.10^6
	Escherichia coli	5	2	10	10^2
	Sulphite-reducing anaerobes	5	2	30	3.10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Bacillus cereus	5	2	10^3	10^4
	Salmonella	5	0	Absent in 25 g	
Yeast (dry and fresh)	Aerobic germs at 30□C	5	2	10^5	10^6
	Total coliforms	5	2	10^2	10^3
	Escherichia coli	5	2	3	30
	Salmonella	5	0	Absent in 25 g	
Sugar for human consumption and industries	Aerobic germs at 30□C	5	2	20	2.10^2
	Sulphite-reducing anaerobes	5	2	1	10
	Yeast and mildew	5	2	1	10
	Acidifying germs	5	2	5	50
Gelatine	Aerobic germs at 30□C	5	2	10^4	10^5
	Thermotolerant coliforms	5	2	10^2	10^3
	Sulphite-reducing anaerobes	5	2	10	10^2
	Coagulase + staphylococci	5	0	Absent	
	Salmonella	5	0	Absent in 25 g	

15- Other foodstuffs (continued)

Categories of foodstuffs	Micro-organisms/ metabolites	Sampling plan		Microbiological limits (cfu/g)	
		n	c	m	M
Unstabilised mayonnaise	Aerobic germs at 30□C	5	2	10^4	10^5
	Yeast and mildew	5	2	10^2	10^3
	Escherichia coli	5	2	10	10^2
	Coagulase + staphylococci	5	2	10^2	10^3
	Salmonella	5	0	Absent in 25 g	
Stabilised mayonnaise and other condiment sauces	Yeast and mildew	5	2	10	10^2
	Escherichia coli	5	2	4	40
	Coagulase + staphylococci	5	2	10	10^2
	Salmonella	5	0	Absent in 25 g	
Honey	Yeast and mildew	5	1	10^2	10^3
Vinegar	Aerobic germs at 30□C	5	1	30	10^2

Annex II

Test sample technique and interpretation of the results of microbiological analyses:

I. Test sample technique:

• For foodstuffs of the same kind, the sample must be divided into at least five (5) units from the same batch.

• The laboratory must use about 500g of product, i.e. 5 times 100g. This 100g may be taken in one or more parts. These samples must comply with the rules of asepsis and the rules of representativeness.

• For preserved foods, the sample must be divided into at least six (6) units from the same batch.

• The test sample for the preparation of the initial suspension and the decimal dilutions is carried out:

- On the superficial and deep sections, especially for products in chopped slices and pre-cooked dishes;

- On the deep section after cauterisation of the surface of the product, especially for meats (parts), poultry (parts), meat products (parts) and whole fish;

- On the homogenised product or on the superficial and deep sections, depending on the nature of the liquid or semi-liquid product, especially dairy products.

• In the case of microbiological examinations carried out following food poisoning, it is necessary to search for pathogenic germs, toxinogens and/or their toxins, both at the surface and in depth.

II. Interpretation of the results of microbiological analyses:

1. Interpretation according to a three-class plan:

The interpretation of the results is carried out according to a plan with three classes, in the case where the value "c" is different from zero (0).

The results are expressed as follows:

• if the result of the analysis is less than or equal to "m", the result of the microbiological criterion is satisfactory;

• if the result of the analysis does not exceed "M" and if the number of units in the sample gives a result greater than "m" and between "1" and "c", the result of the microbiological criterion is acceptable;

• if the result of the analysis exceeds "M", or if the number of units in the sample giving a result between « m "and" M "is greater than" c ", the result of the microbiological criterion is unsatisfactory.

❖ Special case for histamine in fish and fishery products made from fish species associated with a large amount of histidine, except in fish sauce produced by fermentation of fish and fishery products.

The results are expressed as follows:

• The result of the microbiological criterion is satisfactory when the following requirements are met:

1. the average value observed is less than or equal to « "m";

2. a maximum of c/n values observed are between « "m" and "M";

3. no values observed exceed the limit of "M".

• The result of the microbiological criterion is unsatisfactory when the observed average value exceeds "m", when more c/n values are between "m" and "M", or when one or more observed values are greater than "M";

2. Interpretation according to a two-class plan:

The interpretation of the results is carried out according to a plan with two classes, in the case where the value "c" is equal to zero (0).

The results are expressed as follows:

• For the term "absent in":

- the result of the microbiological criterion is satisfactory when the micro-organism is absent in all the units of the sample;

- the result of the microbiological criterion is unsatisfactory when the presence of the micro-organism is detected in at least one unit of the sample. In the case of the following microorganisms: *Listeria monocytogenes, Salmonella, Campylobacter spp* (thermotolerant), the result shows that the batch checked is unfit for consumption.

• For the limit "m = M":

if the result of the analysis is less than or equal to "m", the result of the microbiological criterion is satisfactory;

If the result of the analysis exceeds "m", the result of the microbiological criterion is unsatisfactory. In the case of *Listeria monocytogenes,* the result shows that the batch checked is unfit for consumption.

3. Special case:

The sample is considered toxic if the limit is greater than or equal to 10^5 for bacteria: Sulfite-reducing anaerobes, coagulase-plus staphylococci and *Bacillus cereus*.

III. Evaluation of the microbiological quality of the batch checked:

The results of the microbiological analyses of the sample reveal the microbiological quality of the batch:

• Satisfactory quality, if the results of all microbiological criteria are satisfactory;

• Unsatisfactory quality if at least one result of one of the microbiological criteria is unsatisfactory;

• Acceptable quality if, at a minimum, one result on one of the criteria is acceptable, no result being otherwise unsatisfactory;

• The sample is considered toxic if the limit is greater than or equal to 10^5 for bacteria: Sulfite-reducing anaerobes, coagulase+ staphylococci and *Bacillus cereus*