1.6. Fruit and Vegetable Products

Index, Product Group	Parameters	Maximum Admissible Levels, mg/kg	Comments
1	2	3	4
1.6.1. Fresh and quick-frozen vegetables, potato, water-melons, melons and gourds, fruit, berries, mushrooms	Toxic elements: Lead Arsenic Cadmium mercury	 0.5 0.4 0.2 0.5 0.03 0.1 0.02 0.05	 Fruit and berries Mushrooms Mushrooms Mushrooms
	Nitrates: Potato Early green head cabbage (before September 1) Late green head cabbage, Early carrot (before September 1) Late carrot Tomatoes Cucumbers Table beet Bulb onion Green onion Leaf vegetables (salads, spinach, salad cabbage, parsley, celery, coriander, fennel, etc.) sweet pepper marrow squash watermelon melon	 250 900 500 400 250 150 300 150 400 1400 80 600 800 2000 200 400 400 60 90	 Protected ground Protected ground Protected ground Protected ground
	Pesticides<*>: hexachlorocyclohexane (α,β,γ-isomers) DDT and its metabolites	 0.1 0.5 0.05 0.1	 Potato, green peas, sugar beet Vegetables, water-melons, melons and gourds, mushrooms Fruit, berries, grapes
Potato Vegetables water-melons, melons and gourds, fruit, berries grapes, berries mushrooms in wild nature	Radionuclides: cesium-137 strontium-90 cesium-137 strontium-90 cesium-137 strontium-90 cesium-137 strontium-90 cesium-137 strontium-90	 120 40 120 40 40 30 160 60 500 50	Bq/kg Same Same Same Same Same Same Same Same Same

Microbiological Characteristics						
Index, Product Group	MAFAC, CFU/g, max	Product portion (cm^3, g) in which is not admitted		Yeast (total) CFU/g, max	Moulds (total) CFU/g, max	Comments
		coliforms	pathogenic organisms, including Salmonella			
1	2	3	4	5	6	7
1.6.1.1. Vegetables and potatoes, fresh, fresh-frozen and processed:						
- whole fresh vegetables	1 x 1E4	1.0	25	1 x 1E2	1 x 1E2	L.monocytogenes in 1 g is not admitted
blanched, fresh-frozen						
- fresh whole vegetables, non-blanched, fresh-frozen	1 x 1E5 <*>	0.01	25	5 x 1E2	5 x 1E2	<*> for cut vegetables, including mixtures - 5 x 1E5
- green and leaf vegetables, fresh-frozen	5 x 1E5	0.01	25	5 x 1E2	5 x 1E2	in blanched vegetables L.monocytogenes in 25 g is not admitted
- fresh-frozen blanched mushrooms	1 x 1E4	1.0	25	1 x 1E2	1 x 1E2	
- potato semi-finished products, fresh-frozen (garnish potato, potato chops, meatballs, etc.)	5 x 1E4	0.01	25	1 x 1E3		
- salads and mixtures made of blanched vegetables, fresh-frozen	5 x 1E4	0.1	25	1 x 1E2	1 x 1E2	L.monocytogenes in 25 g is not admitted
- vegetable puree semi-finished products, fresh-frozen	5 x 1E4	0.1	25	2 x 1E2	2 x 1E2	Sulphite-reducing clostridia in 1g are not admitted
- vegetable chops, fresh-frozen (semi-finished products)	1 x 1E5	0.1	25	1 x 1E3		

1.6.1.2. Fruit, berries, quick-frozen and processed						
- , quick-frozen pome fruits, drupaceous fruits, smooth fruits	5 x 1E4	0.1	25	2 x 1E2	2 x 1E3	
- quick-frozen drupaceous floccose fruits	5 x 1E5	0.1	25	5 x 1E2	1 x 1E3	
- fresh berries in vacuum package and whole berries, quick-frozen	5 x 1E4	0.1	25	2 x 1E2	5 x 1E2	
- strained or crushed berries, quick-frozen	1 x 1E5	0.01	25	5 x 1E2	1 x 1E2	
- dessert fruit and berry dishes, fresh-frozen	1 x 1E3	1.0	25	1 x 1E2 <*>	1 x 1E2 <*>	<*> total amount of yeast and mould
- dessert fruit and berry semi-finished products	1 x 1E5	0.1	25	1 x 1E3 <*>	1 x 1E3 <*>	<*> same

Index, Product Group	Parameters	Maximum Admissible Levels, mg/kg	Comments
1	2	3	4
1.6.2. Dried vegetables, potato, fruit, berries, mushrooms	Toxic elements, nitrates, pesticides	According to p.1.6.1	Calculated on the raw product basis taking into account dry matter content in the raw and finished product
	Radionuclides:		
Potato	cesium-137	600	Bq/kg
	strontium-90	200	Same
Vegetables, water-melons, melons and gourds, fruit, berries	cesium-137	600	Same
	strontium-90	200	Same
grapes,	cesium-137	200	Same
	strontium-90	150	Same
berries	cesium-137	800	Same
	strontium-90	300	Same
mushrooms in wild nature	cesium-137	2500	Same
	strontium-90	250	Same
In the version of Supplement No 2 approved by Resolution of RF Head State Sanitary Physician No 41 of April 15, 2003.			

Microbiological Characteristics					
Index, Product Group	MAFAC, CFU/g, max	Product portion (cm^3, g) in which is not admitted		Mould, CFU/g, max	Comments
		coliforms	pathogenic organisms, including Salmonella		
1	2	3	4	5	6
1.6.2.1. Dried vegetables and potato:					
- dried vegetables, which were not blanched before drying	5 x 1E5	0.01	25	5 x 1E2	B.cereus: 1 x 1E3 CFU/g max
- dried potato puree	5 x 1E4	0.1	25	5 x 1E2	
- dried potato and other root crops, which were blanched before drying	2 x 1E4	0.01	25	5 x 1E2	
- potato chips	1 x 1E3	0.1	25	-	
- chips and extruded product with food additives	1 x 1E4	0.1	25	2 x 1E2	
1.6.2.2. Fried fruit and berries					
- fruit and berries	5 x 1E4	0.1	25	5 x 1E2	Yeast: 5 x 1E2 CFU/g max
- fruit and berries, fruit and berry sublimated puree	5 x 1E4	0.1	25	1 x 1E2	
- candied fruits	1 x 1E3	1.0	25	50	Yeast: 50 CFU/g max
In the version of Supplement No 2 approved by Resolution of RF Head State Sanitary Physician No 41 of April 15, 2003.					
1.6.2.3. Dried mushrooms	5 x 1E3	0.001	25	5 x 1E2	
1.6.2.4. Food concentrates:					
- vegetable and fruit desserts (heat-dried)	5 x 1E3	1.0	25	1 x 1E2	S.aureus in 1g, and B.cereus in 0.1g are not admitted
- vegetable powder (sublimation drying)	5 x 1E4	0.01	25	1 x 1E2	

Index, Product Group	Parameters	Maximum Admissible Levels, mg/kg	Comments
1	2	3	4
1.6.3. Vegetable, fruit, berry preserves	Toxic elements:		
	Lead	0.5 0.4 1.0	Fruits and berries in collapsed cans
	Arsenic	0.2	
	Cadmium	0.03 0.05	in collapsed cans
	Mercury	0.02	
	Tin	200.0	in collapsed cans
	Chrome	0.5	in chromium-plated package
	Mycotoxins: patuline	0.05	Apple, tomato, sea-buckthorn
	Nitrates, pesticides, radionuclides	According to p.1.6.1	

Microbiological parameters:	
Index, Product Group	Requirements
1.6.3.1. Vegetable preserves with pH 4.2 or more; apricot, peach, pear preserves with pH 3.8 or more prepared without acid addition	Should meet the requirements of industrial sterility for group “A” preserves in accordance with Supplement 8 to these Sanitary Rules.
1.6.3.2. Non-concentrated tomato products (whole tomato preserves) with dry matter content less than 12%	Should meet the requirements of industrial sterility for group “B” preserves in accordance with Supplement 8 to these Sanitary Rules.
1.6.3.3. Vegetable preserves with pH 3.7-4.2	Should meet the requirements of industrial sterility for group “C” preserves in accordance with Supplement 8 to these Sanitary Rules.
1.6.3.4. Vegetable preserves (with pH below 3.7), pasteurized fruit and berry preserves for public catering with sorbic acid and pH below 4.0; apricot, peach, pear preserves with pH below 3.8.	Should meet the requirements of industrial sterility for group “D” preserves in accordance with Supplement 8 to these Sanitary Rules.

Index, Product Group	Parameters	Maximum Admissible Levels, mg/kg	Comments
1	2	3	4
1.6.4. Mushroom preserves	Toxic elements: Lead Arsenic Cadmium Mercury Tin Chrome	 0.5 1.0 0.5 0.1 0.05 200.0 0.5	 In collapsed cans in collapsed cans in chromium-plated package
	Pesticides, radionuclides	According to p.1.6.1	
Microbiological parameters:			
Should meet the requirements of industrial sterility for group “A” preserves (made of natural mushrooms) or group “B” preserves (made of vinegar-pickled mushrooms) in accordance with Supplement 8 to these Sanitary Rules.			

Index, Product Group	Parameters	Maximum Admissible Levels, mg/kg	Comments
1	2	3	4
1.6.5. Juices, nectars, beverages, concentrates, semi-finished vegetable, fruit, and berry products (preserved); fruit, fruit and berry, flavoured ice-cream and food grade ice - juices, nectars, semi-finished products, and ice-creams	Toxic elements: Lead Arsenic Cadmium Mercury Tin Chrome	 0.5 0.4 1.0 0.2 0.03 0.05 0.02 200 0.5	 Vegetable, fruit, and berry in collapsed cans in collapsed cans in collapsed cans in chromium-plated package
- beverages, food-grade ice - concentrates	Lead Arsenic Cadmium Mercury	0.3 0.1 0.03 0.005 according to p. 1.6.1	 Calculated on the raw product basis taking into account dry matter content in the raw and finished product

- juices, beverages, concentrates - vegetable and fruit semi-finished products	Mycotoxins: patuline patuline	 0.05 0.05	 Apple, tomato, sea-buckthorn. Tomato pulp, apple pulp
- juices, beverages, concentrates	Nitrates, pesticides	according to p. 1.6.1	For beverages and concentrates: calculated on the raw product basis taking into account dry matter content in the raw and finished product
- juices, beverages - concentrates	Radionuclides: cesium-137 strontium-90 cesium-137 strontium-90	 According to p.1.6.1 1200 240	 Bq/kg Bq/kg

In the version of Supplement No 2 approved by Resolution of RF Head State Sanitary Physician No 41 of April 15, 2003.

Microbiological parameters:	
Index, Product Group	Requirements
1.6.5.1. Preserved vegetable juices with pH 4.2 or more	Should meet the requirements of industrial sterility for group “A” preserves in accordance with Supplement 8 to these Sanitary Rules.
1.6.5.2. Preserved tomato beverages with dry matter content less than 12%	Should meet the requirements of industrial sterility for group “B” preserves in accordance with Supplement 8 to these Sanitary Rules.
1.6.5.3. Concentrated tomato products with dry matter content more than 12% (tomato paste and tomato sauces)	Should meet the requirements of industrial sterility for group “B” preserves in accordance with Supplement 8 to these Sanitary Rules. Mould content by Goward in tomato paste should not exceed 40% 0f visual field.
1.6.5.4. Sterilized tomato ketchups with dry matter content more than 12%	Should meet the requirements of industrial sterility for group “B” preserves in accordance with Supplement 8 to these Sanitary Rules.
1.6.5.5. Vegetable juices with pH 3.7-4.2 (with acid addition)	Should meet the requirements of industrial sterility for group “C” preserves in accordance with Supplement 8 to these Sanitary Rules.
1.6.5.6. Vegetable juices with pH below 3.7 fruit (made of citruses), fruit and berry including those with sugar, natural with pulp, concentrated, pasteurized; preserved apricot, peach and pear juices with pH 3.8 and less.	Should meet the requirements of industrial sterility for group “D” preserves in accordance with Supplement 8 to these Sanitary Rules.

Microbiological Characteristics						
Index, Product Group	MAFAC, CFU/cm^3, max	Product portion (cm^3, g) in which is not admitted		Yeast (total) CFU/ cm^3, max	Moulds (total) CFU/ cm^3, max	Comments
		coliforms	pathogenic organisms, including Salmonella			
1	2	3	4	5	6	7
1.6.5.7. Fruit and berry juices and beverages, pasteurized, carbonated with pH 3.7 or less	50	1000	-	1.0 <*>	5.0	Lactic acid microorganisms in 1cm^3 are not admitted <*> - weight of cm^3, in which is not admitted

1.6.5.8. Concentrates of fruit, fruit and berry and berry juices for industrial processing and pasteurized	Should meet the requirements of industrial sterility for group “D” preserves in accordance with Supplement 8 to these Sanitary Rules.					
non-pasteurized including quick-frozen	5 x 1E3	1.0	25	2 x 1E3	5 x 1E2	
1.6.5.9. Non-sterilized tomato sauces and ketchups, including those with preservative addition	5 x 1E3	1.0	25	50	50	sulphite-reducing clostridia in 1g are not admitted.
1.6.5.10. Fruit and berry ice-cream and fruit ice based on sugar syrup, including flavoured	1 x 1E5	0.01	25	100	100	
In the version of Supplement No 2 approved by Resolution of RF Head State Sanitary Physician No 41 of April 15, 2003.						
1.6.5.11. Mixtures for fruit and berry ice cream and fruit ice	5 x 1E4	0.01	25	100	100	Dry mixtures are controlled after reconstitution with water
1.6.5.12. Vegetable and fruit juices, which are fresh-squeezed and sold without storage	According to p.1.9.15.16					

Index, Product Group	Parameters	Maximum Admissible Levels, mg/kg	Comments
1	2	3	4
1.6.6. Jams, fruit pastes, confitures, fruit and berries crushed with sugar and other fruit and berry concentrates with sugar	Toxic elements:		
	Lead	0.5	
		1.0	in collapsed cans
	Arsenic	1.0	
	Cadmium	0.05	
	Mercury	0.02	
	Tin	200.0	in collapsed cans
	Chrome	0.5	in chromium-plated package
	Mycotoxins:		
	patuline	0.05	Apple, sea-buckthorn
	Radionuclides:		
	cesium-137	80	Bq/kg
	strontium-90	70	same

Microbiological Characteristics						
Index, Product Group	MAFAC, CFU/g, max	Product portion (cm^3, g) in which is not admitted		Yeast (total) CFU/ g, max	Moulds (total) CFU/g, max	Comments
		coliforms	pathogenic organisms, including Salmonella			
1	2	3	4	5	6	7

1.6.6.1. Jams, fruit pastes, confitures, fruit and berries crushed with sugar and other fruit and berry concentrates with sugar, non-sterilized	5 x 1E3	1.0	25	50	50	
1.6.6.2. Jams, fruit pastes, confitures, fruit and berries crushed with sugar and other fruit and berry concentrates with sugar, exposed to various thermophysical treatment	Should meet the requirements of industrial sterility for group “D” preserves in accordance with Supplement 8 to these Sanitary Rules.					

Index, Product Group	Parameters	Maximum Admissible Levels, mg/kg	Comments
1	2	3	4
1.6.7. Vegetables and fruits, mushrooms brined, pickled, sour, soaked.	Toxic elements, nitrates, pesticides, radionuclides	According to p. 1.6.1	

Microbiological parameters		
Index, Product Group	Product portion (cm^3, g) in which is not admitted	
	Mesophilic sulphite-reducing clostridia	Pathogenic organisms, including Salmonella
1.6.7.1. Ready to use vegetables sour and brined (cabbage, cucumbers, tomato etc.); Fruits soaked and brined, including water-melons and melons (packaged and non-packaged)	-	25
1.6.7.2. Mushrooms preserved: brined and pickled in barrels, cooked in barrels	0.1	25

Index, Product Group	Parameters	Maximum Admissible Levels, mg/kg	Comments
1	2	3	4
1.6.8. Spices and dried vegetable herbs	Toxic elements: lead arsenic cadmium	 5.0 3.0 0.2	
	Radionuclides: cesium-137 strontium-90	 200 100	 Bq/kg same

Microbiological Characteristics						
Index, Product Group	MAFAC, CFU/g, max	Product portion (cm^3, g) in which is not admitted			Mould, CFU/g, max	Comments
		coliforms	Sulphite-reducing clostridia	pathogenic organisms, including Salmonella		
1	2	3	4	5	6	7
1.6.8.1. Spices: - ready to use - spices, raw materials: whole black pepper, bayberry, red pepper, coriander, cinnamon, nutmeg, etc.	5 x 1E5 2 x 1E6	0.01 0.001	0.01	25 25	5 x 1E3 5 x 1E4	
1.6.8.2. Complex food additives with spices and spicy vegetables	5 x 1E5	0.01	0.01	25	2 x 1E2	
1.6.8.3. Flavourings – table mustard and horse reddish	5 x 1E4	0.01	0.01	25	2 x 1E2	
1.6.8.4. Garlic powder (sublimated)	5 x 1E3	1.0	-	25	1 x 1E2	B.cereus 1 x 1E2 CFU/g max

Index, Product Group	Parameters	Maximum Admissible Levels, mg/kg	Comments
1	2	3	4
1.6.9. Nuts	Toxic elements: lead arsenic cadmium mercury	 0.5 0.3 0.1 0.05	
	Pesticides<*>: hexachlorocyclohexane (α,β,γ-isomers) DDT and its metabolites	 0.5 0.15	
	Mycotoxins: aflatoxin B1	 0.005	
	Radionuclides: cesium-137 strontium-90	 200 100	 Bq/kg same

Index, Product Group	Product portion (cm^3, g) in which is not admitted		Mould, CFU/g, max	Comments
	coliforms	pathogenic organisms, including Salmonella		
1	2	3	4	5
1.6.9.1. Natural nuts (almond, walnut, peanut, pistachio, butternut, hickory, coconut) pealed, non-roasted	0.01	25	1 x 1E3	
1.6.9.2. Roasted nuts	0.1	25	5 x 1E2	
In the version of Supplement No 2 approved by Resolution of RF Head State Sanitary Physician No 41 of April 15, 2003.				

1.6.9.3. Chopped dried coco-nuts	0.01	25	1 x 1E2	
1.6.9.4. Chopped coco-nuts	0.01	25	1 x 1E2	

Index, Product Group	Parameters	Maximum Admissible Levels, mg/kg	Comments
1	2	3	4
1.6.10 Tea (lack, green, brick)	Toxic elements: lead arsenic cadmium mercury	 10.0 1.0 1.0 0.1	
	Mycotoxins: aflatoxin B1	 0.005	
	Radionuclides: cesium-137 strontium-90	 400 200	 Bq/kg same
	Microbiological parameters: mould	 1 x 1E3	 CFU/g max
1.6.11 Coffee (beans, ground, instant)	Toxic elements: lead arsenic cadmium mercury	 1.0 1.0 0.05 0.02	
	Mycotoxins: aflatoxin B1	 0.005	
	Radionuclides: cesium-137 strontium-90	 300 100	 Bq/kg same
	Microbiological parameters: mould	 5 x 1E2	 CFU/g max, green coffee beans

<*> Residual pesticides, which were in raw food products, should be monitored as well (see pp. 3.12, 3.13).
<**> Nitrates and pesticides are calculated are calculated from main kind(s) of raw material, both on mass fraction basis, and for allowable levels of these contaminants.