ZOONOSES MONITORING

Montenegro

TRENDS AND SOURCES OF ZOONOSES AND ZOONOTIC AGENTS IN FOODSTUFFS, ANIMALS AND FEEDINGSTUFFS

including information on foodborne outbreaks, antimicrobial resistance in zoonotic and indicator bacteria and some pathogenic microbiological agents

IN 2023

PREFACE

This report is submitted to the European Commission in accordance with Article 9 of Council Directive 2003/99/ EC*. The information has also been forwarded to the European Food Safety Authority (EFSA).

The report contains information on trends and sources of zoonoses and zoonotic agents in Montenegro during the year 2023.

The information covers the occurrence of these diseases and agents in animals, foodstuffs and in some cases also in feedingstuffs. In addition the report includes data on antimicrobial resistance in some zoonotic agents and indicator bacteria as well as information on epidemiological investigations of foodborne outbreaks.
Complementary data on susceptible animal populations in the country is also given. The information given covers both zoonoses that are important for the public health in the whole European Union as well as zoonoses, which are relevant on the basis of the national epidemiological situation.
The report describes the monitoring systems in place and the prevention and control strategies applied in the country. For some zoonoses this monitoring is based on legal requirements laid down by the European Union legislation, while for the other zoonoses national approaches are applied.

The report presents the results of the examinations carried out in the reporting year. A national evaluation of the epidemiological situation, with special reference to trends and sources of zoonotic infections, is given. Whenever possible, the relevance of findings in foodstuffs and animals to zoonoses cases in humans is evaluated.
The information covered by this report is used in the annual European Union Summary Reports on zoonoses and antimicrobial resistance that are published each year by EFSA.

The national report contains two parts: tables summarising data reported in the Data Collection Framework and the related text forms. The text forms were sent by email as pdf files and they are incorporated at the end of the report.

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* Directive 2003/ 99/ EC of the European Parliament and of the Council of 12 December 2003 on the monitoring of zoonoses and zoonotic agents, amending Decision 90/ 424/ EEC and repealing Council Directive 92/ 117/ EEC, OJ L 325, 17.11.2003, p. 31

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Table Susceptible animal population

No data returned for this view. This might be because the applied filter excludes all data.

DISEASE STATUS TABLES

TABLE NAME	REGION	Zoonotic Agent	DISEASE STATUS UNIT	Number of infected herds	Total number of herds
Bovine brucellosis in countries and regions that do not receive Community co-financing for eradication programme	Montenegro	Brucella		0	73,893

TABLE NAME	REGION	Zoonotic Agent	DISEASE STATUS UNIT	Number of infected herds	Total number of herds
Ovine or Caprine brucellosis in countries and regions that do not receive Community co-financing for eradication programme	Montenegro	Brucella		0	169,821

DISEASE STATUS TABLES

TABLE NAME	REGION	Zoonotic Agent	DISEASE STATUS UNIT	Number of infected herds	Total number of herds
Bovine tuberculosis in countries and regions that do not receive Community co-financing for eradication programme	Montenegro	Mycobacterium tuberculosis complex (MTC)		0	73,893

PREVALENCE TABLES

Table CAMPYLOBACTER:Campylobacter in food

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	Method	total units tested	total units positive	Zoonoses	N units positive
Not Available	Meat from broilers (Gallus gallus) - carcase - chilled - Slaughterhouse - Not Available - food sample - neck skin - Surveillance - based on Regulation 2073 - Industry sampling - Objective sampling	single (food/feed)	10	Gram	N_A	ISO 10272-2:2017 Campylobacter	50	4	Campylobacter, unspecified sp.	4
	Meat from broilers (Gallus gallus) - carcase - chilled - Slaughterhouse - Not Available - food sample - neck skin - Surveillance - based on Regulation 2073 - Official, based on Regulation 2019/627 - Objective sampling	single (food/feed)	10	Gram	N_A	ISO 10272-2:2017 Campylobacter	10	0	Campylobacter	0

Table LISTERIA: in food

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	total units tested	total units positive	Method	Zoonoses	N units tested	N units positive
Not Available	Cheeses made from cows' milk - fresh - made from pasteurised milk - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	25	0	<=100	Listeria monocytogenes	25	0
								>100	Listeria monocytogenes	25	0
					N_A	50	0	<=100	Listeria monocytogenes	50	0
								>100	Listeria monocytogenes	50	0
	Cheeses made from cows' milk - hard - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	5	0	<=100	Listeria monocytogenes	5	0
								>100	Listeria monocytogenes	5	0
					N_A	20	0	<=100	Listeria monocytogenes	20	0
								>100	Listeria monocytogenes	20	0
	Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	139	0	<=100	Listeria monocytogenes	139	0
								>100	Listeria monocytogenes	139	0
					N_A	195	0	<=100	Listeria monocytogenes	195	0
								>100	Listeria monocytogenes	195	0
	Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - Household - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	N_A	15	0	detection	Listeria monocytogenes	15	0
	Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - Retail - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	N_A	20	0	<=100	Listeria monocytogenes	20	0
								>100	Listeria monocytogenes	20	0
	Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - Household - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	Data from PHI	937	0	detection	Listeria monocytogenes	937	0
					N_A	1864	2	detection	Listeria monocytogenes	1,864	2
	Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	N_A	15	0	<=100	Listeria monocytogenes	15	0
								>100	Listeria monocytogenes	15	0
	Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - Household - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	Data from PHI	7	0	detection	Listeria monocytogenes	7	0
	Cheeses made from goats' milk - soft and semi-soft - made from raw or low heat-treated milk - Household - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	Data from PHI	7	0	detection	Listeria monocytogenes	7	0
	Dairy products (excluding cheeses) - butter - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	N_A	15	0	<=100	Listeria monocytogenes	15	0
								>100	Listeria monocytogenes	15	0
	Dairy products (excluding cheeses) - cream - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	42	0	<=100	Listeria monocytogenes	42	0
								>100	Listeria monocytogenes	42	0
					N_A	30	0	<=100	Listeria monocytogenes	30	0
								>100	Listeria monocytogenes	30	0
	Dairy products (excluding cheeses) - cream - Household - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	N_A	63	0	detection	Listeria monocytogenes	63	0
	Dairy products (excluding cheeses) - yoghurt - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	80	0	<=100	Listeria monocytogenes	80	0
								>100	Listeria monocytogenes	80	0
					N_A	25	0	<=100	Listeria monocytogenes	25	0
								>100	Listeria monocytogenes	25	0
	Fish - smoked - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	5	0	<=100	Listeria monocytogenes	5	0
								>100	Listeria monocytogenes	5	0
					N_A	35	0	<=100	Listeria monocytogenes	35	0
								>100	Listeria monocytogenes	35	0
	Fish - smoked - Retail - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	N_A	7	1	<=100	Listeria monocytogenes	7	1
								>100	Listeria monocytogenes	7	0
	Fish - smoked - Retail - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	N_A	7	1	detection	Listeria monocytogenes	7	1
	Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	58	0	<=100	Listeria monocytogenes	58	0
								>100	Listeria monocytogenes	58	0
					N_A	20	0	<=100	Listeria monocytogenes	20	0
								>100	Listeria monocytogenes	20	0
	Meat from other animal species or not specified - meat products - cooked, ready-to-eat - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	N_A	30	0	<=100	Listeria monocytogenes	30	0
								>100	Listeria monocytogenes	30	0

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	total units tested	total units positive	Method	Zoonoses	N units tested	N units positive
Not Available	Meat from other animal species or not specified - meat products - fermented sausages - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	51	0	<=100	Listeria monocytogenes	51	0
								>100	Listeria monocytogenes	51	0
					N_A	15	0	<=100	Listeria monocytogenes	15	0
								>100	Listeria monocytogenes	15	0
	Meat from other animal species or not specified - meat products - ready-to-eat - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	10	0	<=100	Listeria monocytogenes	10	0
								>100	Listeria monocytogenes	10	0
	Meat from pig - meat products - fermented sausages - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	31	0	<=100	Listeria monocytogenes	31	0
								>100	Listeria monocytogenes	31	0
	Meat from pig - meat products - ready-to-eat - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	227	0	<=100	Listeria monocytogenes	227	0
								>100	Listeria monocytogenes	227	0
	Meat from pig - meat products - ready-to-eat - Retail - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	18	0	<=100	Listeria monocytogenes	18	0
								>100	Listeria monocytogenes	18	0
					N_A	50	0	<=100	Listeria monocytogenes	50	0
								>100	Listeria monocytogenes	50	0
	Meat from turkey - meat products - ready-to-eat - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	10	0	<=100	Listeria monocytogenes	10	0
								>100	Listeria monocytogenes	10	0
					N_A	10	0	<=100	Listeria monocytogenes	10	0
								>100	Listeria monocytogenes	10	0
	Milk, cows' - pasteurised milk - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	Data from PHI	7	0	<=100	Listeria monocytogenes	7	0
								>100	Listeria monocytogenes	7	0

Table SALMONELLA:Salmonella in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Number of Flocks Under Control Programme	Target Verification	Sampling Details	Method	total units tested	total units positive	Zoonoses	Units positive
Not Available	Gallus gallus (fowl) - breeding flocks for egg production line - hatching eggs - Hatchery - Not Available - animal sample - eggs - Surveillance - Official sampling - Objective sampling	herd/flock		N_A	N_A	Not Available	60	1	Salmonella Enteritidis	1
	Gallus gallus (fowl) - breeding flocks for egg production line - hatching eggs - Hatchery - Not Available - animal sample - eggshells - Surveillance - Official sampling - Objective sampling	herd/flock		N_A	N_A	Not Available	29	2	Salmonella Enteritidis	1
									Salmonella Tennessee	1
	Gallus gallus (fowl) - broilers - before slaughter - Border Control Posts - Not Available - environmental sample - boot swabs - Surveillance - Official sampling - Objective sampling	herd/flock		N_A	N_A	Not Available	94	17	Salmonella Enteritidis	11
									Salmonella group O:7	1
									Salmonella Infantis	2
									Salmonella Tennessee	2
									Salmonella Typhimurium	1
	Gallus gallus (fowl) - broilers - day-old chicks - Border Control Posts - Not Available - environmental sample - delivery box liner - Surveillance - Official sampling - Objective sampling	herd/flock		N_A	N_A	Not Available	128	25	Salmonella Enteritidis	20
									Salmonella Montevideo	1
									Salmonella Newport	2
									Salmonella Senftenberg	1
									Salmonella Tennessee	1
	Gallus gallus (fowl) - broilers - Farm - Not Available - animal sample - faeces - Surveillance - Official sampling - Objective sampling	herd/flock		N_A	N_A	Not Available	13	2	Salmonella Enteritidis	1
									Salmonella Taksony	1
	Gallus gallus (fowl) - broilers - Farm - Not Available - environmental sample - fabric swab - Surveillance - Official sampling - Objective sampling	herd/flock		N_A	N_A	Not Available	250	7	Salmonella Enteritidis	7
	Gallus gallus (fowl) - laying hens - adult - Farm - Not Available - animal sample - faeces - Surveillance - Official sampling - Objective sampling	herd/flock		N_A	N_A	Not Available	99	10	Salmonella Enteritidis	2
									Salmonella Mbandaka	5
									Salmonella Senftenberg	1
									Salmonella Tennessee	2

Table SALMONELLA:Salmonella in food

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	Method	total units tested	total units positive	Zoonoses	N units positive
Not Available	Cheeses made from cows' milk - hard - made from raw or low heat-treated milk - Household - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	1864	0	Salmonella	0
	Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - Household - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	Data from PHI	ISO 6579-1:2017 Salmonella	937	0	Salmonella	0
	Cheeses made from goats' milk - soft and semi-soft - made from raw or low heat-treated milk - Household - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	Data from PHI	ISO 6579-1:2017 Salmonella	7	0	Salmonella	0
	Dairy products (excluding cheeses) - cream - Household - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	63	0	Salmonella	0
	Meat from bovine animals - carcase - Slaughterhouse - Not Available - food sample - carcase swabs - Surveillance - based on Regulation 2073 - Industry sampling - Objective sampling	single (food/feed)	400	Square centimetre	N_A	ISO 6579-1:2017 Salmonella	121	0	Salmonella	0
	Meat from bovine animals - carcase - Slaughterhouse - Not Available - food sample - carcase swabs - Surveillance - based on Regulation 2073 - Official, based on Regulation 2019/627 - Objective sampling	single (food/feed)	400	Square centimetre	N_A	ISO 6579-1:2017 Salmonella	22	0	Salmonella	0
	Meat from broilers (Gallus gallus) - carcase - chilled - Slaughterhouse - Not Available - food sample - neck skin - Surveillance - based on Regulation 2073 - Industry sampling - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	50	0	Salmonella	0
	Meat from broilers (Gallus gallus) - carcase - chilled - Slaughterhouse - Not Available - food sample - neck skin - Surveillance - based on Regulation 2073 - Official, based on Regulation 2019/627 - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	10	0	Salmonella	0
	Meat from other animal species or not specified - meat preparation - intended to be eaten cooked - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	N_A	ISO 6579-1:2017 Salmonella	10	0	Salmonella	0
	Meat from pig - carcase - Slaughterhouse - Not Available - food sample - carcase swabs - Surveillance - based on Regulation 2073 - Official, based on Regulation 2019/627 - Objective sampling	single (food/feed)	400	Square centimetre	N_A	ISO 6579-1:2017 Salmonella	5	0	Salmonella	0
	Meat from poultry, unspecified - fresh - frozen - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	Data from PHI	ISO 6579-1:2017 Salmonella	638	36	Salmonella spp., unspecified	36
					N_A	ISO 6579-1:2017 Salmonella	235	17	Salmonella spp., unspecified	17
	Meat from sheep - carcase - Slaughterhouse - Not Available - food sample - carcase swabs - Surveillance - based on Regulation 2073 - Industry sampling - Objective sampling	single (food/feed)	400	Square centimetre	N_A	ISO 6579-1:2017 Salmonella	7	0	Salmonella	0
	Meat from sheep - carcase - Slaughterhouse - Not Available - food sample - carcase swabs - Surveillance - based on Regulation 2073 - Official, based on Regulation 2019/627 - Objective sampling	single (food/feed)	400	Square centimetre	N_A	ISO 6579-1:2017 Salmonella	10	0	Salmonella	0
	Meat from turkey - minced meat - intended to be eaten cooked - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	5	0	Salmonella	0

Table SALMONELLA:Salmonella in feed

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	Method	total units tested	total units positive	Zoonoses	N units positive
Not Available	Compound feedingstuffs for fish - Border Control Posts - Not Available - feed sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	4	0	Salmonella	0
	Compound feedingstuffs for poultry (non specified) - Border Control Posts - Not Available - feed sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	2	0	Salmonella	0
	Pet food - Border Control Posts - Not Available - feed sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	14	0	Salmonella	0

FOODBORNE OUTBREAKS TABLES

Foodborne Outbreaks: summarized data

when numbers referring to cases, hospitalized people and deaths are reported as unknown, they will be not included in the sum calculation

		Outbreak strenght	Weak		
Causative agent	**Food vehicle**	**N outbreaks**	**N human cases**	**N hospitalized**	**N deaths**
Salmonella Enteritidis	Bakery products - cakes - containing raw cream	1	3	1	0
	Eggs - raw material (liquid egg) for egg products	1	5	2	0
Unknown	Unknown	2	24	0	0

Strong Foodborne Outbreaks: detailed data

No data returned for this view. This might be because the applied filter excludes all data.

Weak Foodborne Outbreaks: detailed data

Causative agent	H	AG	VT	Other Causative Agent	FBO nat. code	Outbreak type	Food vehicle	More food vehicle info	Nature of evidence	Setting	Place of origin of problem	Origin of food vehicle	Contributory factors	Comment	N outbreaks	N human cases	N hosp.	N deaths
Salmonella Enteritidis	Not Available	Not Available	Not Available	Not Available	2023MEFBO-03	Household	Bakery products - cakes - containing raw cream	N_A	Descriptive epidemiological evidence	Nursing home	Domestic premises	Montenegro	Unknown	N_A	1	3	1	0
					2023MEFBO-04	General	Eggs - raw material (liquid egg) for egg products	N_A	Unknown	Canteen or workplace catering	Canteen or workplace catering	Montenegro	Inadequate heat treatment	N_A	1	5	2	0
Unknown	Not Available	Not Available	Not Available	Not Available	2023MEFBO-02	General	Unknown	N_A	Unknown	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Montenegro	Unknown	N_A	1	5	0	0
					2023MEFBO-06	General	Unknown	N_A	Unknown	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Montenegro	Unknown	N_A	1	19	0	0

ANTIMICROBIAL RESISTANCE TABLES FOR SALMONELLA

Table Antimicrobial susceptibility testing of Salmonella Mbandaka in Pigs - fattening pigs

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Micromethod dilution (in microtiter plate)

Country Of Origin:Montenegro

Sampling Details:

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	4	8	16	0.5	2	16	0.064	2
				Lowest limit	4	1	2	0.25	0.25	8	0.015	1
				Highest limit	128	32	64	4	8	64	8	16
				N of tested isolates	3	3	3	3	3	3	3	3
				N of resistant isolates	0	0	0	0	0	0	0	0
Not Available	Not Available	Not Available	<=0.015								3	
			<=0.25					3				
			0.5						3			
			<=1			2						3
			2			1						
			<=4		3							
			<=8							3		
			8				3					

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**3**	**3**	**3**	**3**	**3**	**3**	**3**
			MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.03			3					
			<=0.25							3	
			<=0.5		3						
			0.5								3
			<=2						3		
			<=4				3				
			16					1			
			64					1			
			128					1			

Table Antimicrobial susceptibility testing of Salmonella Typhimurium in Pigs - fattening pigs

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Micromethod dilution (in microtiter plate)

Country Of Origin:Montenegro

Sampling Details:

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**4**	**8**	**16**	**0.5**	**2**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.015								1	
			<=0.25					1	1			
			<=1									1
			2			1						
			<=4		1							
			4				1					
			<=8							1		

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
			ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
			Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
			Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
			N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**
			N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	**MIC**							
			<=0.03		1					
			<=0.25						1	1
			<=0.5	1						
			<=2					1		
			<=4			1				
			64				1			

ANTIMICROBIAL RESISTANCE TABLES FOR ESCHERICHIA COLI

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Pigs - fattening pigs

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON pnl2

Analytical Method: Micromethod dilution (in microtiter plate)

Country Of Origin:Montenegro

Sampling Details:

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
				ECOFF	**0.25**	**0.25**	**0.25**	**8**	**0.5**	**0.5**	**0.064**	**0.5**	**0.125**	**16**
				Lowest limit	**0.064**	**0.25**	**0.064**	**0.5**	**0.25**	**0.125**	**0.015**	**0.125**	**0.03**	**0.5**
				Highest limit	**32**	**64**	**64**	**64**	**128**	**128**	**2**	**16**	**16**	**128**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.015								1			
			<=0.03										1	
			<=0.064				1							
			0.25							1		1		
			4		1									
			8					1	1					1
			64			1								

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Pigs - fattening pigs

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Micromethod dilution (in microtiter plate)

Country Of Origin:Montenegro

Sampling Details:

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	8	8	16	0.25	0.5	16	0.064	2
				Lowest limit	4	1	2	0.25	0.25	8	0.015	1
				Highest limit	128	32	64	4	8	64	8	16
				N of tested isolates	41	41	41	41	41	41	41	41
				N of resistant isolates	0	12	2	1	1	9	18	0
Not Available	Not Available	Not Available	<=0.015								21	
			0.03								1	
			0.064								1	
			0.125								4	
			<=0.25					40	39			
			0.25								7	
			0.5						1			
			<=1			1						41
			<=2				11					
			2			11						
			<=4		41							
			4			15	20		1			
			>4					1				
			<=8							30		
			8			2	7					
			>8								7	

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
			ECOFF	**8**	**8**	**16**	**0.25**	**0.5**	**16**	**0.064**	**2**
			Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
			Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
			N of tested isolates	**41**	**41**	**41**	**41**	**41**	**41**	**41**	**41**
Not Available	Not Available	Not Available	**MIC N of resistant isolates**	**0**	**12**	**2**	**1**	**1**	**9**	**18**	**0**
			16			1			2		
			32			2					
			>32		12						
			64						2		
			>64						7		

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**41**	**41**	**41**	**41**	**41**	**41**	**41**
				N of resistant isolates	**3**	**0**	**14**	**14**	**25**	**0**	**12**
Not Available	Not Available	Not Available	<=0.03			41					
			<=0.25							41	24
			<=0.5	36							
			0.5								5
			1	1							
			<=2						16		
			2	1							
			<=4				22				
			4	2							
			<=8					21			
			8				5				
			16				5	5	1		
			>16	1							12
			32					1	1		
			>32						23		
			>64				9				
			>512					14			

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from bovine animals - fresh - chilled

Sampling Stage: Border Control Posts

Sampling Type: food sample - meat

Sampling Context: Monitoring

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Micromethod dilution (in microtiter plate)

Country Of Origin:Belgium

Sampling Details:

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**8**	**8**	**16**	**0.25**	**0.5**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**1**	**1**	**0**	**0**	**1**	**1**	**0**
Not Available	Not Available	Not Available	<=0.25					1	1			
			<=1									1
			<=4	1								
			>8								1	
			32				1					
			>32			1						
			>64							1		

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**1**	**1**	**1**	**0**	**1**
Not Available	Not Available	Not Available		<=0.03		1					
				<=0.25						1	
				<=0.5	1						
				>16							1
				>32					1		
				>64			1				
				>512				1			

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from bovine animals - fresh - chilled

Sampling Stage: Border Control Posts

Sampling Type: food sample - meat

Sampling Context: Monitoring

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Micromethod dilution (in microtiter plate)

Country Of Origin:Germany

Sampling Details:

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**8**	**8**	**16**	**0.25**	**0.5**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.015								1	
			<=0.25					1	1			
			<=1									1
			<=4	1								
			4				1					
			<=8							1		
			>32			1						

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**0**	**1**	**1**	**0**	**1**
Not Available	Not Available	Not Available		<=0.03		1					
				<=0.25						1	
				<=0.5	1						
				<=4			1				
				>16							1
				32					1		
				>512				1			

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from pig - fresh - chilled

Sampling Stage: Border Control Posts

Sampling Type: food sample - meat

Sampling Context: Monitoring

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Micromethod dilution (in microtiter plate)

Country Of Origin:Spain

Sampling Details:

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**8**	**8**	**16**	**0.25**	**0.5**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
Not Available	Not Available	Not Available	<=0.25					1	1			
			0.25								1	
			<=1									1
			<=2				1					
			<=4		1							
			4			1						
			<=8							1		

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**1**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.03			1					
			<=0.25							1	1
			<=0.5		1						
			<=2						1		
			<=8					1			
			>64				1				

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from pig - fresh - chilled

Sampling Stage: Border Control Posts

Sampling Type: food sample - meat

Sampling Context: Monitoring

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Micromethod dilution (in microtiter plate)

Country Of Origin:Hungary

Sampling Details:

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**8**	**8**	**16**	**0.25**	**0.5**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.015								1	
			<=0.25					1	1			
			<=1									1
			<=4	1								
			4			1	1					
			<=8							1		

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.03			1					
			<=0.25							1	
			<=0.5		1						
			1								1
			<=2						1		
			<=4				1				
			16					1			

OTHER ANTIMICROBIAL RESISTANCE TABLES

Specific monitoring of ESBL-/AmpC-/carbapenemase-producing bacteria and specific monitoring of carbapenemase-producing bacteria, in the absence of isolate detected

No data returned for this view. This might be because the applied filter excludes all data.

Specific monitoring of ESBL-/AmpC-/carbapenemase-producing bacteria and specific monitoring of carbapenemase-producing bacteria, in the absence of isolate detected

Latest Transmission set

Table Name	Last submitted dataset transmission date
Antimicrobial Resistance	19-Jul-2024
Disease Status	19-Jul-2024
Food Borne Outbreaks	19-Jul-2024
Prevalence	19-Jul-2024

ZOONOSES MONITORING

MONTENEGRO

TEXT FORMS FOR THE TRENDS AND SOURCES OF ZOONOSES AND ZOONOTIC AGENTS IN FOODSTUFFS, ANIMALS AND FEEDINGSTUFFS

including information on foodborne outbreaks, antimicrobial resistance in zoonotic and indicator bacteria and some pathogenic microbiological agents

IN 2023

Table of contents

1. Institutions and Laboratories involved in zoonoses monitoring and reporting

- Ministry of Agriculture, Forestry and Water Management (MAFWM)
- Administration for Food Safety, Veterinary and Phytosanitary Affairs (AFSVPA)
- Public Health Institute (PHI)
- Diagnostic Veterinary Laboratory (SVL)

The Ministry of Agriculture, Forestry and Water Management (MAFWM) develops strategies and prepares and adopts legislation in food safety, veterinary and phytosanitary area.
The Administration for Food Safety, Veterinary and Phytosanitary Affairs (AFSVPA) is the competent authority for the implementation of food safety, veterinary and phytosanitary policies as well as organisation and implementation of official controls and other official activities.
PHI laboratories for chemistry and sanitary microbiology are the official laboratories for microbiological and chemical analyses of drinking water and foodstuffs (food, dietary products and dietary supplements), designated by MAFWM. Laboratories are MEST EN ISO / IEC 17025:2018 accredited by the Accreditation Body of Montenegro.
PHI is responsible to monitor, report, evaluate, propose and implement measures related to public health protection and food safety incidents.
Scope of accreditation can be found at: Dodatak Sertifikatu o akreditaciji broj: Li 08 (akreditacija.me)
Diagnostic Veterinary Laboratory (DVL), founded by the Veterinary law, performs the following tasks:
- monitors and evaluates epidemiological situation in Montenegro;
- proposes measures for prevention, detection and eradication of infectious, parasites and other animal diseases;
- laboratory and pathoanatomic diagnostics of infectious diseases and other animal diseases;
- microbiological laboratory analyses and testing of food of animal origin and feed;
- laboratory analyses and testing of semen and ovaries for artificial insemination and monitors and proposes measures for productivity of animals;
- participates in implementation of training strategies for veterinarians and animal keepers.

DVL is MEST EN ISO / IEC 17025:2018 accredited by the Accreditation Body of Montenegro.
Scope of accreditation can be found at: Redni (akreditacija.me)

2. Animal population

2.1. Sources of information and the date(s) (months, years) the information relates to [(a)]

Data source on animal population (number of animals) is the Veterinary Information System (VIS) operating within AFSVPA. VIS includes data on bovine (since 2009), sheep, goats (since 2011) and pigs (since 2014). The data on animal population from 2023 are not submitted, due to mal functioning of the data base due to previous cyber-attack, problems in operation of the VIS and uncertainty in exact data available. However, estimated data on animal population can be used from previous year (2022) and these are displayed in data sets for animal diseases.

2.2. Definitions used for different types of animals, herds, flocks and holdings as well as the production types covered

- **the animals** are domestic or other animals;
- **domestic animals** are all kinds of cattle, including buffalo (Bubalus bubalis) and buffalo (Bison bison), sheep, goats, pigs and ungulates;
- **other animals** are animals not covered by the definition of domestic animals (pets, poultry, bees);
- **the bovine keeper** is the owner of the bovine animal or any natural or legal person responsible for the animal, whether permanent or temporary, as well as during transport
- **the sheep or goat keeper** is the owner of the sheep or goats or any natural or legal person responsible for the animal, whether permanent or temporary
- **the pig-keeper** is the owner of the pigs or any natural or legal person responsible for the animal, whether permanent or temporary;
- **the equine keeper** is the owner of the equidae, or any natural or legal person responsible for keeping them, with or without compensation, permanently or temporarily, as well as during transportation, at fairs or during competitions, races or cultural events;
- **the keeper of other animals** is the owner or any natural or legal person responsible for the animal, including temporary animal care;
- **cattle holding** is any establishment or building, and in the case of open-air breeding, the land where the cattle are kept, kept or bred;
- **sheep and goat** holding is any establishment, building or, in the case of open-air breeding, the land on which sheep and goats are kept permanently or temporarily
- **pig holding** is any establishment, building or, in the case of outdoor breeding, the place where pigs are kept
- **holding for other animals** is any establishment, indoor or open space where animals are kept;
- **products of animal origin are:**
    - products of animal origin intended for human consumption:
    - food of animal origin, including honey and blood,
    - live bivalve molluscs, live echinoderms, live tunicates, live gastropodsintended for human consumption,
    - other animals intended for preparation, for the purpose of delivery to the final consumer (live);
    - products of animal origin intended for animal nutrition:
    - meat meal, fish meal, bone meal, liver meal, blood meal, feather meal,
    - feed containing products referred to in sub items a) and c) of this item,
    - other products of animal origin;
    - products of animal origin intended for industrial use: raw skin, fur, wool, hair, bristle, feathers, hoofs, bones, horns, blood, intestines and otherproducts of animal origin intended for industrial use;
    - products of animal origin intended for pharmaceutical use: organs, glands, animal tissue and bodily fluids, which are used in preparation of pharmaceutical products;
    - reproductive material;

Montenegro

- **trader** is a natural or legal person engaged in commercial buying or selling of animals, either directly or indirectly, who regularly trades animals and who, in a period not longer than 30 days from the day of purchase, sells or relocates animals from one facility into other facilities that are not in his ownership;
- **animals** means animals from the family of hoofed animals (equines, donkeys, mules, hinny), animals from the family of cloven-hoofed animals (bovine, ovine, caprine, porcine animals), poultry (chicken, turkeys, geese, ducks and other birds reared or kept for the production of meat, breeding or for laying eggs and other products and wild birds for rearing and breeding), ornamental, exotic and wild birds and mammals, dogs, cats, hares, bees, silkworm, pollinating insects and other arthropods, fish, crustaceans, frogs, snails, and other molluscs, echinoderms, turtles and other reptiles, annelids, wild game, experimental animals and reproductive material;
- **food business operator** means the natural or legal person or entrepreneur responsible for ensuring that the requirements of food law are met within the food business under their control;
- **feed business operator** means the natural or legal person or entrepreneur responsible for ensuring that the requirements of food law are met within the feed business under their control;
- **retail** means the handling and/or processing, preparation and storage of food at the point of sale or delivery to the final consumer, and includes distribution terminals, catering operations, factory canteens, restaurants and other food service operations, shops, supermarket distribution centres and wholesale outlets;
- wholesale market means handling of food in one or more separate units that have common equipment and premises where food is sold to the operators of food;
- primary production means the production, rearing or growing of primary products including harvesting, milking and farmed animal production prior to slaughter, as well as hunting and fishing and the harvesting of products (wild fruits and plants) from nature;
- primary product means a product obtained from primary production, including products obtained from the soil, livestock breeding, hunting and fishing;
- holding: any establishment, construction or, in the case of an open-air farm, any place in which animals are held, kept or handled.
- a geographical entity is a unit of one building or a complex of buildings included grounds and territories where an animal species is or could be hold.
- herd: an animal or group of animals kept on a holding as an epidemiological unit; if more than one herd is kept on a holding, each of these herds shall form a distinct unit and shall have the same health status.
-

2.3. National changes of the numbers of susceptible population and trends

Over the last years, total number of holdings of bovines, porcine, sheep and goats and poultry have a steady number. Dominant type of holding is small family farm with few exceptions of larger farms. The characteristic of Montenegro is that holdings are small in more than 90% of cases resulting in a low average number of animals per holding. The data on animal population from 2023 are not submitted, due to mal functioning of the data base from previous cyber-attack, problems in operation of the VIS and uncertainty in exact data available.

However, estimated data on animal population can be used from previous year (2022) and these are also displayed in data sets for animal diseases.

2.4. Geographical distribution and size distribution of the herds, flocks and holdings[(b)]

According to the Statistical Office of Montenegro (MONSTAT), Montenegro is one statistical region on all three NUTS levels. Further subdivision into local administrative units: LAU1 (Local Administrative Unit 1) is equivalent to number of Montenegrin municipalities (25 in total), and LAU2 settlements, 1,307.

VIS upgrade will contain geographical coordinates of animals and holdings.

2.5. Additional information

(a): National identification and registration system(s), source of reported statistics (Eurostat, others)
(b): Link to website with density maps if available, tables with number of herds and flocks according to geographical area

3. General evaluation*: Bovine Tuberculosis

3.1. History of the disease and/or infection in the country[(a)]

No confirmed cases in 2023. Last confirmed case (one case) of bovine animals was in 2019.

3.2. Evaluation of status, trends and relevance as a source for humans

No recent evaluation performed.

3.3. Any recent specific action in the Member State or suggested for the European Union[(b)]

No

3.4. Additional information

* **For each zoonotic agent**

(a): Epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, feed, animal). If relevant: the official "disease status" to be specified for the whole country and/or specific regions within the country

(b): If applicable

4. Description of Monitoring/Surveillance/Control programmes system*: Bovine Tuberculosis

4.1. Monitoring/Surveillance/Control programmes system[(a)]

Active surveillance

For the timely detection and control of tuberculosis in all bovine animals older than six weeks, an intradermal tuberculin test is carried out by veterinary ambulances (veterinarians) having contract to perform annual preventive measures on animals in order to detect and eradicate disease and to create conditions for obtaining and maintaining the health status of tuberculosis-free holdings in the territory of Montenegro.

Responsible institution: AFSVPA, veterinary inspection

Implementation: Veterinary ambulances, Veterinary inspection, DVL

For more than 12 years, in accordance with the annual programmes of measures, diagnostic examination of bovine animals for tuberculosis has been carried out on all bovine animals older than 6 weeks in all holdings, on the whole territory of Montenegro, in accordance with the Veterinary Law and the Rulebook for measures for detection, control and eradication of bovine tuberculosis ("Official Gazette of MNE", no. 64/08) harmonized with the Council Directive 64/432, 77/391/EEC, 78/52/EEC and 82/400/EEC, defines the measures of identification, control and eradication of bovine tuberculosis.
and in accordance with the manufacture instructions and technical instrcation.

Passive surveillance

In accordance with the Rulebook on classification of infectious animal diseases, manner of notification of occurrence or suspicion and declaring infectious animal diseases resolved (Official Gazette of MNE No. 92/17) and Compulsory Programme of Animal Health Measures the monitoring of epizootiological situation and diagnostics in case of suspected infectious and parasitic diseases are carried out in order to detect and suppress the occurrence and spread of infectious diseases in a timely manner and to maintain a stable epizootiological situation in Montenegro.

In case of clinical symptoms on the basis of which possible presence of bovine tuberculosis is suspected: persistent cough, weight loss and swelling of accessible lymph nodes or granulomatous or other changes in organs of in case of slaughtered or dead animals, the veterinarian at the filed or authorised veterinarian at the slaughter line has the obligation to report the suspicion to veterinary inspector (competent authority) in accordance with the Rulebook on the classification of infectious animal diseases, manner of notification of occurrence or suspicion and declaring infectious animal diseases resolved (Official Gazette of MNE No. 92/2017).

After reporting the suspicious case of live animals, the veterinary inspector orders the measures to either rule out or confirm the disease.

The pathogenic material for confirmation of M. bovis is taken from the changed lymph nodes and parenchymal organs such as: lungs, liver, spleen, etc. In cases where no pathological changes are present in animals, samples of retropharyngeal, bronchial, mediastinal, supramammary, mandibular and some mesenteric lymph nodes and the liver are taken for testing and cultivation. Further measures are taken in accordance with the Law.

4.2. Measures in place[(b)]

Rulebook for measures for detection, control and eradication of bovine tuberculosis ("Official Gazette of MNE", no. 64/08) harmonized with the Council Directive 64/432, 77/391/EEC, 78/52/EEC and 82/400/EEC, defines the measures of identification, control and eradication of bovine tuberculosis.

Clinical signs or reasons on which the suspicion of the possible presence of bovine tuberculosis is based on:

- Persistent cough, weight loss, and swelling of the lymph nodes on the basis of which may be suspected tuberculosis;

- Granulomatous or other changes in the organs of slaughtered or dead animals on the basis of which may be suspected tuberculosis;

- When it's considered that the animals reacted positively to an intradermal tuberculin test:

a) Positive or suspect - in the case of using single disposable intradermal tuberculin test,

b) Positive in the case when the first test used was a comparative intradermal tuberculin test,

c) Unclear or positive in the case when as the second (repeated) test used is a comparative intradermal tuberculin test.

A method of performing intradermal tuberculin test and evaluation of the reaction is carried out in accordance with Annex I of the Rulebook.

In the event that the response to a single tuberculin test is suspicious or positive, the veterinary inspector orders to perform comparative intradermal tuberculin test on animal and other prescribed measures. The measures shall remain in force until the results of the comparative intradermal tuberculin test are received.

In the case when suspicion on tuberculosis is not ruled out, the veterinary inspector immediately puts the farm under official surveillance, conducts epizootic research and requires the implementation of a prescribed diagnostic procedure to confirm or ruled out the presence of disease.

Veterinary inspector suspends the status of herd officially free of tuberculosis and orders other prescribed measures. The veterinary inspector shall immediately inform the competent authority on a suspension of the status of the herd. At the slaughterhouse during post-mortem examination of suspected animal, all tbc changes on organs are sampled and sent to laboratory testing. In the case that changes were not notices, samples of liver and retro pharyngeal, bronchial, mediastinal, supramammary, mandibular and mesenteric lymph nodes must be sent to laboratory testing. The same procedure is conducted in the case of euthanasia of suspected animal.

The measures shall remain in force until suspicion on presence of bovine tuberculosis in a herd is officially confirmed or ruled out.

Bovine tuberculosis is officially confirmed upon isolation of Mycobacterium bovis.

When bovine tuberculosis has been officially confirmed in a herd, veterinary inspector withdrawn the status of herd free from tuberculosis and orders other prescribed measures.

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When bovine tuberculosis has been officially confirmed in a herd, a veterinary inspector conducts official supervision of facilities for processing of non-edible products of animal origin to prevent the spread of bovine tuberculosis.

On the withdrawal of the status of the herd referred, the veterinary inspector immediately informs the competent authority.

The measures shall remain in force until it restored the status of the herd officially free from bovine tuberculosis, in accordance with procedure stipulated in the Rulebook.

4.3. Notification system in place to the national competent authority[(c)]

Notification is performed in accordance with the Rulebook on the classification of infectious animal diseases, manner of notification of occurrence or suspicion and declaring infectious animal diseases resolved (Official Gazette of MNE No. 92/2017).

In the event that the response to a single tuberculin test is suspicious or positive, the authorised veterinarian notifies the veterinary inspector (competent authority).

In the case when suspicion on tuberculosis is not ruled out (after conduction of comparative test), the authorised veterinarian notifies the veterinary inspector (competent authority).

In the case when tbc is officially confirmed, official laboratory notifies the veterinary inspector (competent authority).

In the case of clinical sings of tbc (suspicion) or tbc changes at the slaughter, veterinarian or authorised veterinarian notifies the veterinary inspector (competent authority) that orders the measures to either rule out or confirm the disease.

4.4. Results of investigations and national evaluation of the situation, the trends [(d)] and sources of infection[(e)]

There were no positive cases in 2023. Case from 2019, was confirmed in the imported animal for slaughtering.

4.5. Additional information

No

*** For all combinations of zoonotic agents and matrix (Food, Feed and Animals) for 'Prevalence' and 'Disease Status': one text form reported per each combination of matrix/zoonoses or zoonotic agent**

(a): Sampling scheme (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) + testing scheme (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow (parallel testing, serial testing) to assign and define cases. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.

(b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.

(c): Mandatory: Yes/No.

(d): Minimum five years.

(e): Relevance of the findings in animals to findings in foodstuffs and for human cases (as a source of infection).

5. General evaluation*: Brucellosis of cattle, sheep and goats

3.1. History of the disease and/or infection in the country[(a)]

The testing has been covering the entire bovine population (older than 12 months), and the presence of specific antibodies against Brucella spp. has not been confirmed in any of the samples delivered and tested thus far.

Since 2020, the testing covers the entire ovine and caprine population (older than 6 months). Previously, the testing was carried out only in municipalities bordering other countries. The presence of specific antibodies against Brucella spp. has not been established in any of the samples delivered and tested thus far.

3.2. Evaluation of status, trends and relevance as a source for humans

No recent evaluation performed.

3.3. Any recent specific action in the Member State or suggested for the European Union[(b)]

no

3.4. Additional information

Write text here please

* **For each zoonotic agent**

(a): Epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, feed, animal). If relevant: the official "disease status" to be specified for the whole country and/or specific regions within the country

(b): If applicable

6. Description of Monitoring/Surveillance/Control programmes system*: Brucellosis of cattle, sheep and goats

6.1. Monitoring/Surveillance/Control programmes system[(a)]

Active surveillance

In accordance with the Compulsory Programme of Animal Health Measures and in order to detect and control brucellosis in a timely manner, diagnostic testing of blood sera is carried out in all bovine animals over 12 months of age, except males intended for fattening, and in sheep and goats over six months of age, in order to create the preconditions for obtaining and maintaining the health status of holdings free of this disease. in the territory of Montenegro, in accordance with the Rulebook on measures for the detection, control, and eradication of bovine brucellosis (Official Gazette MNE No. 64/2008), harmonized with the Council Directive 64/432, 77/391/EEC, 78/52/EEC and 82/400/EEC and the Rulebook on the measures for the prevention of occurrence, detection, control, and eradication of ovine and caprine brucellosis (B. melitensis) (Official Gazette of MNE No. 33/14).

Responsible institution: AFSVPA, Veterinary Inspection

Operator: Veterinary ambulances, veterinary inspection, DVL.

Passive surveillance

In accordance with the Rulebook on classification of infectious animal diseases, manner of notification of occurrence or suspicion and declaring infectious animal diseases resolved (Official Gazette of MNE No. 92/17) and Compulsory Programme of Animal Health Measures the monitoring of epizootiological situation and diagnostics in case of suspected infectious and parasitic diseases are carried out in order to detect and suppress the occurrence and spread of infectious diseases in a timely manner and to maintain a stable epizootiological situation in Montenegro.

The mandatory diagnostic examination has been foreseen of bovine, ovine and caprine animals: in cases of abortion - 15 days following abortion; when the clinical signs of brucellosis are established - abortion, placental retention, orchitis, and epididymitis, arthritis that may be associated with other clinical signs or other changes on the basis of which brucellosis may be suspected; animals that were in contact with people or animals suspected of being infected or diagnosed with brucellosis.

6.2. Measures in place[(b)]

Bovine Brucellosis

Rulebook on measures for the detection, control, and eradication of bovine brucellosis (Official Gazette MNE No. 64/2008), harmonized with the Council Directive 64/432, 77/391/EEC, 78/52/EEC and 82/400/EEC defines the measures of identification, control and eradication of bovine brucellosis.
In accordance with the Rulebook the following bovine animals shall be regarded as suspected of brucellosis:

- those with the positive or suspicious result of the serological test (RB test, ELISA test, CFT test, MRT, SAT);
- those showing one or more clinical signs: abortion, placental retention, orchitis and epididymitis, arthritis that may be associated with other clinical signs or other changes on the basis of which brucellosis may be suspected;
- those that were in contact with people or animals suspected of being infected or diagnosed with brucellosis.

Authorised veterinarians take blood samples on farms and deliver them to the Diagnostic Veterinary Laboratory, which performs laboratory testing using the Rose Bengal test as a screening test.

Procedure of conducting serological test and microbiological research is conducted in accordance with Annex I of the Rulebook that is according to the methods of International organisation for animal health (OIE).
In case of suspicion on brucellosis, veterinary inspector immediately puts the holding under official surveillance in order to confirm or ruled out the presence of the disease, suspends the status of herd officially brucellosis free, conducts epizootic research and orders other measures prescribed with the Rulebook. The measures shall remain in force until suspicion on presence of bovine brucellosis in a herd is officially confirmed or ruled out.
Bovine animals diagnosed with brucellosis shall be:

- Those with a positive reaction to at least two serological tests set out in Annex I (RB test, ELISA test, CFT test, MRT, SAT);
- Those for which microbiological testing confirmed the presence of the causative agent of bovine brucellosis.

When bovine brucellosis is officially confirmed in herd, veterinary inspector withdraws the status of herd officially free from brucellosis, conducts epizootic research and orders other prescribed measures.
When brucellosis is officially confirmed in the herd, veterinary inspector conducts official supervision of premises and procedures for safe disposal of corps and by products of anima origin in order to stop spread of brucellosis trough this sources.
On the withdrawal of the status of the herd, the veterinary inspector immediately informs the competent authority.
Measures shall remain in force until it is restored the status of the herd officially free from bovine brucellosis.
Ovine and Caprine Brucellosis
Rulebook on the measures for the prevention of occurrence, detection, control, and eradication of ovine and caprine brucellosis (B. melitensis) (Official Gazette of MNE No. 33/14) defines the measures of identification, control and eradication of ovine and caprine brucellosis.
In accordance with the Rulebook the following ovine and caprine animals shall be regarded as suspected of brucellosis:

- those with the positive or suspicious result of the serological test Rose Bengal;
- those showing one or more clinical signs: abortion, placental retention, orchitis and epididymitis, arthritis that may be associated with other clinical signs or other changes on the basis of which brucellosis may be suspected;
- those that were in contact with people or animals suspected of being infected or diagnosed with brucellosis.

Authorised veterinarians take blood samples on farms and deliver them to the Diagnostic Veterinary Laboratory, which performs laboratory testing using the Rose Bengal test as a screening test.
Procedure of conducting serological test and microbiological research is conducted in accordance with Annex I of the Rulebook that is according to the methods of International organisation for animal health (OIE).
In case of suspicion on brucellosis, veterinary inspector immediately puts the holding under official surveillance in order to confirm or ruled out the presence of the disease, suspends the status of herd officially brucellosis free and orders other measures prescribed with the Rulebook. The measures shall remain in force until suspicion on presence of ovine and caprine brucellosis in a herd is officially confirmed or ruled out.
Ovine and caprine animals diagnosed with brucellosis shall be:

- Those with a positive reaction (RB test, RVK, ELISA test, TFP, Brucelin test, and other test in accordance OIE manual);
- Those for which bacteriological testing, phato-anatomic, molecular and serological testing confirms the presence of the causative agent of bovine brucellosis.

When ovine/caprine brucellosis is officially confirmed in herd, veterinary inspector conducts epizootic research, withdraw of the status of the herd and orders other prescribed measures.
When brucellosis is officially confirmed in the herd, veterinary inspector conducts official supervision of premises and procedures for safe disposal of corps and by products of anima origin in order to stop spread of brucellosis trough this sources.

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On the withdrawal of the status of the herd, the veterinary inspector immediately informs the competent authority.
Measures shall remain in force until it is restored the status of the herd officially free from ovine/caprine brucellosis.

6.3. Notification system in place to the national competent authority[(c)]

Notification is performed in accordance with the Rulebook on the classification of infectious animal diseases, manner of notification of occurrence or suspicion and declaring infectious animal diseases resolved (Official Gazette of MNE No. 92/2017).

In the event of suspicious or positive case on brucellosis, DVL notifies the veterinary inspector (competent authority).

6.4. Results of investigations and national evaluation of the situation, the trends [(d)] and sources of infection[(e)]

No confirmed cases so far in Montenegro.

6.5. Additional information

Write text here please

*** For all combinations of zoonotic agents and matrix (Food, Feed and Animals) for 'Prevalence' and 'Disease Status': one text form reported per each combination of matrix/zoonoses or zoonotic agent**

(a): Sampling scheme (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) + testing scheme (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow (parallel testing, serial testing) to assign and define cases. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.

(b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.

(c): Mandatory: Yes/No.

(d): Minimum five years.

(e): Relevance of the findings in animals to findings in foodstuffs and for human cases (as a source of infection).

7. General evaluation*: *L. monocytogenes,* All foodstuffs - food sample

3.1. History of the disease and/or infection in the country[(a)]

No available data

3.2. Evaluation of status, trends and relevance as a source for humans

There are no aggregated and compiled data from food **testing** and results of testing through official controls**, FBOs programmes** and **testing at borders**. There are no integration, evaluation and analysis of data from human and animal and food safety sector.

3.3. Any recent specific action in the Member State or suggested for the European Union[(b)]

N/A

3.4. Additional information

No

* **For each zoonotic agent**

(a): Epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, feed, animal). If relevant: the official "disease status" to be specified for the whole country and/or specific regions within the country

(b): If applicable

8. Description of Monitoring/Surveillance/Control programmes system*: *L. monocytogenes* in food - All foodstuffs - food sample

Montenegro

8.1. Monitoring/Surveillance/Control programmes system[a]

Official controls

In case of microbiological testing (L. monocytogenes), there is no specific official sampling plan adopted for sampling in establishments. Samples in the establishments are taken during implementation of the official controls, in accordance with the Annual Plan of Official Control of establishments and individual orders for staff performing official controls/inspectors. Decision on sampling is taken by the staff performing official controls (inspectors), based on the findings and eventual non-compliances in food hygiene procedures (including HACCP procedures) and own checks of FBO.

Requirement for microbiological sampling and testing are defined in the Law on Food Safety ("Official Gazette of the Republic of Montenegro", No. 57/2015), specifically in the Article 43. Requirements are further defined in the Regulation on microbiological criteria ("Official Gazette of Montenegro", no. 79/2020 and 8/2023). This regulation transposes Regulation no. 2073/2005.

Monitoring

Monitoring of food for zoonotic agents, at the market, including L. monocytogenes has been foreseen through the yearly monitoring of microbiological criteria - official laboratories for monitoring programme are SVL and IPH.

Matrices tested under the dedicated monitoring of listeria monocytogenes are defined in Regulation on microbiological criteria on food safety - food safety criteria, harmonised with Commission Regulation (EC) No 2073/2005. The mostly tested food product was Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk, but also meat and other ready to eat food of meat and fish origin.

The implementation of monitoring is the responsibility of AFSVPA – veterinary and food safety inspectors and official laboratories (SVL and PHI).

Sampling by FBOs

Requirement for microbiological sampling and testing for FBOs are defined in the Law on Food Safety ("Official Gazette of the Republic of Montenegro", No. 57/2015), specifically in the Article 43.

Requirements are further defined in the Regulation on microbiological criteria ("Official Gazette of Montenegro", no. 79/2020 and 8/2023). This regulation prescribes process hygiene criteria and food saftey criteria, frequency for sampling, food study tests and methods of taking samples and methods for testing. This regulation transposes Regulation no. 2073/2005.

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8.2. Measures in place[b]

In case of testing of food and laboratory results above legal limits veterinary or food safety inspectors undertakes measures in accordance with the Food safety law, risk analyse and the Regulation on microbiological criteria for food safety, including recall from the market, inspection of FBOs premises and PRP and HACCP, programmes, as well as FBOs own sampling plan and laboratory checks, etc. FBOs take measures prescribed in Regulation on microbiological criteria for food safety.

8.3. Notification system in place to the national competent authority[c]

In case of official testing of food and laboratory results above legal limits, official laboratory notifies veterinary and food safety inspector immediately.

In case of testing by FBO, FBO has to announce the results or submit the isolates at the request of the competent authority.

8.4. Results of investigations and national evaluation of the situation, the trends [d] and sources of infection[e]

No available information at national level.

8.5. Additional information

No

* **For all combinations of zoonotic agents and matrix (Food, Feed and Animals) for 'Prevalence' and 'Disease Status': one text form reported per each combination of matrix/zoonoses or zoonotic agent**

(a): Sampling scheme (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) + testing scheme (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow (parallel testing, serial testing) to assign and define cases. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.

(b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.

(c): Mandatory: Yes/No.

(d): Minimum five years.

(e): Relevance of the findings in animals to findings in foodstuffs and for human cases (as a source of infection).

9. General evaluation, Salmonella

3.1. History of the disease and/or infection in the country[(a)]

No data available

3.2. Evaluation of status, trends and relevance as a source for humans

There are no aggregated and compiled data from poultry (primary production) monitoring programs and food monitoring and results of testing through official controls and border inspection posts. There is no integration, evaluation and analysis of data from human and animal and food safety sector.

3.3. Any recent specific action in the Member State or suggested for the European Union[(b)]

N/A

3.4. Additional information

No

* **For each zoonotic agent**

(a): Epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, feed, animal). If relevant: the official "disease status" to be specified for the whole country and/or specific regions within the country

(b): If applicable

10. Description of Monitoring/Surveillance/Control programmes system*: *Salmonella programme*

10.1. Monitoring/Surveillance/Control programmes system[(a)]

Primary production

Systematic sampling of domestic poultry of the Gallus gallus species is carried out from registered facilities, namely: poultry in rearing, flocks of laying hens in production, broilers - flocks for fattening and in incubators was foreseen through national programme for control of Salmonella in accordance with EU requirements, but have not been implement as such.

In place is the Rulebook on measures of control od salmonella in poultry and other specific zoonoses transmitted with food harmonised with the following EU legislation:Regulation (EC) No 2160/2003 of the European Parliament and of the Council of 17 November 2003 on the control of salmonella and other specified food-borne zoonotic agents, Commission Regulation (EU) No 200/2010 of 10 March 2010 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards a Union target for the reduction of the prevalence of Salmonella serotypes in adult breeding flocks of Gallus gallus, Commission Regulation (EU) No 517/2011 of 25 May 2011 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards a Union target for the reduction of the prevalence of certain Salmonella serotypes in laying hens of Gallus gallus and amanding Regulation (EC) No 2160/2003 and Commission Regulation (EU) No 200/2010, Commission Regulation (EU) No 1190/2012 of 12 December 2012 concerning a Union target for the reduction of Salmonella Enteritidis and Salmonella Typhimurium in flocks of turkeys, as provided for in Regulation (EC) No 2160/2003 of the European Parliament and of the Council, Commission regulation EU) No 200/2012 of 8 March 2012 concerning a Union target for the reduction of Salmonella enteritidis and Salmonella typhimurium in flocks of broilers, as provided for in Regulation (EC) No 2160/2003 of the European Parliament and of the Council and Commission Regulation (EC) No 1177/2006 of 1 August 2006 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella in poultry

Samples from border inspection posts and from farms due to disease control were taken and analysed from laying hens, broilers and one day chicks.

Official controls
In case of microbiological testing (Salmonella), there is no specific official sampling plan adopted for sampling in establishments. Samples in the establishments are taken during implementation of the official controls, in accordance with the Annual Plan of Official Control of establishments and individual orders for staff performing official controls/inspectors. Decision on sampling is taken by the staff performing official controls (inspectors), based on the findings and eventual non-compliances in food hygiene procedures (including HACCP procedures) and own checks of FBO.
Requirement for microbiological sampling and testing are defined in the Law on Food Safety ("Official Gazette of the Republic of Montenegro", No. 57/2015), specifically in the Article 43. Requirements are further defined in the Regulation on microbiological criteria ("Official Gazette of Montenegro", no. 79/2020 and 8/2023). This regulation transposes Regulation no. 2073/2005.

Monitoring
Monitoring of food for zoonotic agents, at the market has been foreseen through the yearly monitoring of microbiological criteria - official laboratories for monitoring programme are SVL and IPH.
Matrices tested under the dedicated monitoring of listeria monocytogenes are defined in Regulation on microbiological criteria on food safety - food safety criteria, harmonised with Commission Regulation (EC) No 2073/2005. The mostly tested food product was Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk, but also meat and other ready to eat food of meat and fish origin.

The implementation of monitoring is the responsibility of AFSVPA – veterinary and food safety inspectors and official laboratories (SVL and PHI).

Sampling by FBOs
Requirement for microbiological sampling and testing for FBOs are defined in the Law on Food Safety ("Official Gazette of the Republic of Montenegro", No. 57/2015), specifically in the Article 43.
Requirements are further defined in the Regulation on microbiological criteria ("Official Gazette of Montenegro", no. 79/2020 and 8/2023). This regulation prescribes process hygiene criteria and food saftey criteria, frequency for sampling, food study tests and methods of taking samples and methods for testing. This regulation transposes Regulation no. 2073/2005.

10.2. Measures in place[(b)]

In case of testing of food and laboratory results above legal limits veterinary or food safety inspectors undertakes measures in accordance with the Food safety law, risk analyse and the Regulation on microbiological criteria for food safety, including recall from the market, inspection of FBOs premises and PRP and HACCP, programmes, as well as FBOs own sampling plan and laboratory checks, etc. Measures in case of confirmation of Salmonella in broilers and laying hens are either slaughtering and heat treatment of meat or stamping out and disposal of carcases and other measures from the Rulebook on the measures for salmonella control in poultry (OGMNE 36/2015 i 92/2017).

10.3. Notification system in place to the national competent authority[(c)]

In case of testing of food and laboratory results above legal limits, official laboratory notifies veterinary and food safety inspector immediately.

In case of confirmation of Salmonella in broilers and laying hens, DVL immediately notifies veterinary inspector.

10.4. Results of investigations and national evaluation of the situation, the trends [(d)] and sources of infection[(e)]

No data available

10.5. Additional information

Write text here please

*** For all combinations of zoonotic agents and matrix (Food, Feed and Animals) for 'Prevalence' and 'Disease Status': one text form reported per each combination of matrix/zoonoses or zoonotic agent**

(a): Sampling scheme (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) + testing scheme (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow (parallel testing, serial testing) to assign and define cases. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.

(b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.

(c): Mandatory: Yes/No.

(d): Minimum five years.

(e): Relevance of the findings in animals to findings in foodstuffs and for human cases (as a source of infection).

11. General evaluation*: Campylobacter - All foodstuffs - food sample

3.1. History of the disease and/or infection in the country[(a)]

No available data

3.2. Evaluation of status, trends and relevance as a source for humans

There are no aggregated and compiled data from food testing and results of testing through official controls, FBOs programmes and testing at borders. There are no integration, evaluation and analysis of data from human and animal and food safety sector.

3.3. Any recent specific action in the Member State or suggested for the European Union[(b)]

N/A

3.4. Additional information

No

* **For each zoonotic agent**

(a): Epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, feed, animal). If relevant: the official "disease status" to be specified for the whole country and/or specific regions within the country

(b): If applicable

12. Description of Monitoring/Surveillance/Control programmes system*: Campylobacter

12.1. Monitoring/Surveillance/Control programmes system[(a)] Campylobacter

Official controls

In case of microbiological testing (Campylobacter), there is no specific official sampling plan adopted for sampling in establishments. Samples in the establishments are taken during implementation of the official controls, in accordance with the Annual Plan of Official Control of establishments and individual orders for staff performing official controls/inspectors. Decision on sampling is taken by the staff performing official controls (inspectors), based on the findings and eventual non-compliances in food hygiene procedures (including HACCP procedures) and own checks of FBO.

Requirement for microbiological sampling and testing are defined in the Law on Food Safety ("Official Gazette of the Republic of Montenegro", No. 57/2015), specifically in the Article 43. Requirements are further defined in the Regulation on microbiological criteria ("Official Gazette of Montenegro", no. 79/2020 and 8/2023). This regulation transposes Regulation no. 2073/2005.

Sampling by FBOs

Requirement for microbiological sampling and testing for FBOs are defined in the Law on Food Safety ("Official Gazette of the Republic of Montenegro", No. 57/2015), specifically in the Article 43.

Requirements are further defined in the Regulation on microbiological criteria ("Official Gazette of Montenegro", no. 79/2020 and 8/2023). This regulation prescribes process hygiene criteria and food saftey criteria, frequency for sampling, food study tests and methods of taking samples and methods for testing. This regulation transposes Regulation no. 2073/2005.

12.2. Measures in place[(b)]

In case of testing of food and laboratory results above legal limits veterinary or food safety inspectors undertakes measures in accordance with the Food safety law, risk analyse and the Regulation on microbiological criteria for food safety, including recall from the market, inspection of FBOs premises and PRP and HACCP, programmes, as well as FBOs own sampling plan and laboratory checks, etc. FBOs take measures prescribed in Regulation on microbiological criteria for food safety.

12.3. Notification system in place to the national competent authority[(c)]

In case of official testing of food and laboratory results above legal limits, official laboratory notifies veterinary and food safety inspector immediately.

In case of testing by FBO, FBO has to announce the results or submit the isolates at the request of the competent authority.

12.4. Results of investigations and national evaluation of the situation, the trends [(d)] and sources of infection[(e)]

No data available

12.5. Additional information

No

*** For all combinations of zoonotic agents and matrix (Food, Feed and Animals) for 'Prevalence' and 'Disease Status': one text form reported per each combination of matrix/zoonoses or zoonotic agent**

(a): Sampling scheme (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) + testing scheme (case definition, diagnostic/analytical methods used, limit of detection of the method,

diagnostic flow (parallel testing, serial testing) to assign and define cases. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.

(b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.

(c): Mandatory: Yes/No.

(d): Minimum five years.

(e): Relevance of the findings in animals to findings in foodstuffs and for human cases (as a source of infection).

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13. Food-borne Outbreaks

13.1. System in place for identification, epidemiological investigations and reporting of food-borne outbreaks

Health care institutions and other legal entities that provide health care services are obliged to keep the prescribed records, register and databases on infectious diseases that are connected to a single information system, in accordance with a special law.

They are obliged to inform immediately the competent health institution - Institute for public health of Montenegro (IPH), the administrative body responsible for inspection affairs and the administrative body responsible for food safety, veterinary and phytosanitary affairs in case of occurrence of contagious diseases zoonoses and foodborne diseases, or hospital infections in accordance with the with the law.

The regionally competent health institution (hygienic-epidemiological service) is obliged to perform epidemiological surveillance and directly implement measures to prevent, control, eliminate and eradicate infectious diseases.

The competent health institution is obliged to inform the IPH, competent local government bodies and other entities about the movement of infectious diseases, in order to provide early warning and exchange information.

13.2. Description of the types of outbreaks covered by the reporting

Write text here please

13.3 National evaluation of the reported outbreaks in the country[(a)]

During 2023, 4 FWB outbreaks were recorded in Montenegro.

The total number of patients in all 4 outbreaks was 32. Of that number 3 person was hospitalized. There were no deaths caused by FWBO in 2023.

For all FOUR outbreaks, the causes - sources of infection, as well as the ways of transmission of the infectious agent have not been confirmed. Contaminated food (cross contamination/raw food) is suspected as source of infection.

One of the outbreaks was in nursing home, via epidemiological investigation it was concluded that all ill people were eating a homemade domestic cake. In human samples was founded sallmonela, but in food there was not founded agent

One of the outbreaks was among tourists in hotels, and in those outbreaks nor agent in food or amoung people was founded.

13.4 Descriptions of single outbreaks of special interest

When a foodborne outbreak is detected, public health and regulatory officials work quickly to collect as much information as possible to find out what is making people sick.

There three types of data that are collected:

- Epidemiological data (Where and when did people get sick? Has the same germ caused outbreaks before? If it has, what made people sick in those outbreaks? What foods did people eat before they got sick? What restaurants, grocery stores, or events did sick people go to?)

- Traceback data (Is there a common point in the distribution chain where the food could have gotten contaminated? Is there anything about the food production facilities, farms, or restaurants that made germs likely to spread?)

- Food and Environmental testing data (Is the germ causing the outbreak also found in a food item or in the food production environment? Do the germs found in the food or food production environment have the same DNA fingerprints as germs found in sick people (if it is possible to finde out)

During collecting these data, actions are done to stop the outbreak.

13.5 Control measures or other actions taken to improve the situation

- early detection and epidemiological surveillance;
- health examinations of certain categories of the population, carriers and employees in facilities under sanitary supervision with counselling;
- epidemiological investigation;
- laboratory testing to determine the causes of infectious diseases and the causes of epidemics of infectious diseases;
- health education of patients, members of their families and other persons at risk of contracting infectious diseases;
- disinfection, disinfection and deratization, according to epidemiological indications

13.6 Any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation

N/A

13.7 Additional information

NO

(a): Trends in numbers of outbreaks and numbers of human cases involved, relevance of the different causative agents, food categories and the agent/food category combinations, relevance of the different type of places of food production and preparation in outbreaks, evaluation of the severity of the human cases.

5. Institutions and laboratories involved in antimicrobial resistance monitoring and reporting

- Ministry of Agriculture, Forestry and Water Management (MAFWM)
- Administration for Food Safety, Veterinary and Phytosanitary Affairs (AFSVPA)- veterinary inspection
- Diagnostic Veterinary Laboratory (SVL)

Short description of the institutions and laboratories involved in data collection and reporting

6. General Antimicrobial Resistance Evaluation

7.1. Situation and epidemiological evolution (trends and sources) regarding AMR to critically important antimicrobials[(a)] (CIAs) over time until recent situation

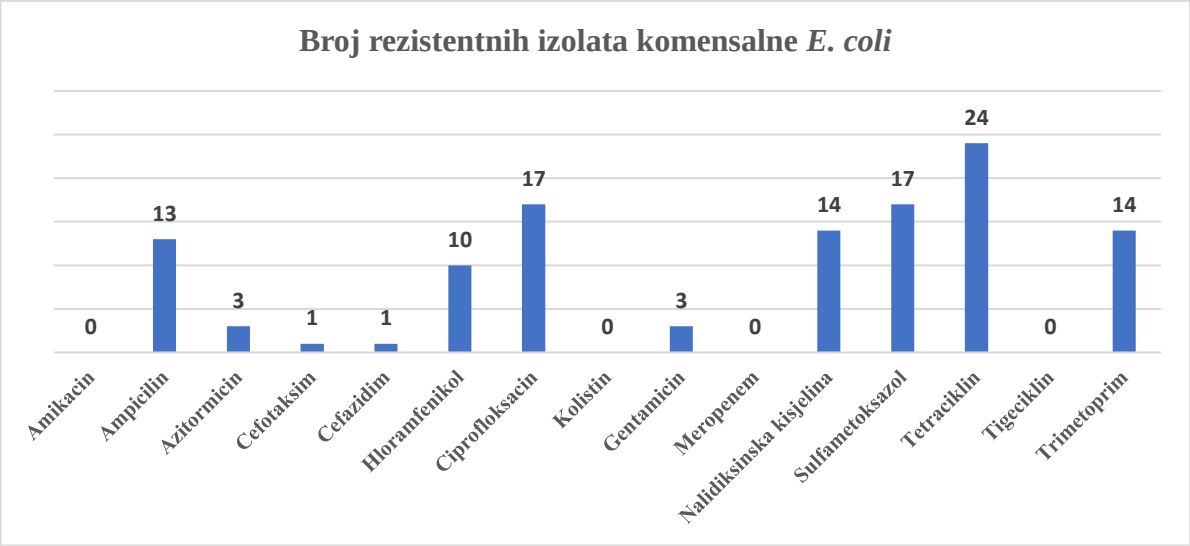
In 2023 MAFWM adopted and AFSVPA together with SVL implemented the AMR monitoring programme for the first time in accordance with the Commission Implementing Decision (EU) 2020/1729.

7.2. Public health relevance of the findings on food-borne AMR in animals and foodstuffs

In accordance with the program for monitoring for AMR for the year 2023 44 samples of fresh beef and pork meat, as well as 41 samples of caecal contents of pigs, arrived at SVL. Samples were processed in accordance with SVL standard operating procedures. From the total number of samples, the presence of 45 isolates of commensal E. coli was determined, namely 41 samples originating from the caecal content of pigs from the pig slaughter line and 4 samples originating from fresh meat of cattle and pigs. Also, the presence of Salmonella spp. in 4 samples, three isolates of S. Mbandaka and one isolate of S. Typhimurium, all isolates were determined in samples of caecal contents from the pig slaughter line, none of the isolates showed resistance to antimicrobial agents. All isolates of commensal E. coli and Salmonella spp. were examined on the panel of antimicrobial substances that should be included in the monitoring of resistance to antimicrobial agents in accordance with Commission Implementing Decision (EU) 2020/1729.

After the tests carried out in commensal E. coli, the presence of resistance to amikacin, colistin, meropenem and tigecycline was not determined. The presence of resistance to cefotaxime and ceftazidime was determined in one isolate, so as such had to be subjected to additional testing on the second panel, where resistance to cefepime, cefotaxime and ceftazidime was determined.

Resistance to azithromycin and gentamicin was found in three isolates, chloramphenicol in 10 isolates, ampicillin in 13 isolates, and trimethoprim and nalidixic acid in 14 isolates. The largest number, a total of 17 isolates, were resistant to ciprofloxacin and sulfamethoxazole, while 24 isolates were resistant to tetracycline. The results are shown in the graphic below.



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7.3. Recent actions taken to control AMR in food producing animals and food

The use of antimicrobials reserved for treatment of certain infections in humans (in accordance with in the Annex to Commission Implementing Regulation (EU) No 2022/1255) in animals is explicitly prohibited by the latest amendments of the national legislation – Point no.4 of the Order on prohibition on treatment and use of certain substances and veterinary medicines in animals ("Official Gazette of Montenegro „no. 17/2024 from 27.2.2024., applicable from 28.2.2024.).

The use of antimicrobials for the purpose of promoting growth or increasing yield is explicitly prohibited by the latest amendments of the national legislation – Point no.4 of the Order on prohibition on treatment and use of certain substances and veterinary medicines in animals ("Official Gazette of Montenegro "no. 17/2024 from 27.2.2024., applicable from 28.2.2024.).

7.4. Any specific action decided in the Member State or suggestions to the European Union for actions to be taken against food-borne AMR threat

no

7.5. Additional information

Write text here please

(a): The CIAs depends on the bacterial species considered and the harmonised set of substances tested within the framework of the harmonised monitoring:

- For *Campylobacter* spp., macrolides (erythromycin) and fluoroquinolones (ciprofloxacin);
- For *Salmonella* and *E. coli*, 3rd and 4th generation cephalosporins (cefotaxime) and fluoroquinolones (ciprofloxacin) and colistin (polymyxin);

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8. General Description of Antimicrobial Resistance Monitoring*; Please add the matrix and bacterial species

8.1. General description of sampling design and strategy[(a)]

The random sampling and sample collection strategy was developed in accordance with Commission Decision (EU) 2020/1729 on monitoring and reporting on resistance of zoonotic and commensal bacteria to antimicrobial agents and repealing Decision 2013/652/EU and EFSA Technical Specifications on random sampling for the need for harmonized monitoring of resistance to antimicrobial agents in zoonotic and commensal bacteria, to the extent that it was possible to comply with the requirements, taking into account the period of the year when sampling will be carried out, financial resources and the reduced volume of pig slaughter due to the risk of introduction and emergence of diseases African swine fever.
The sample collection strategy is a random prospective one, which implies the collection of a sufficient number of samples from pigs at the slaughter line (caecal content)/from primary production (faces and other samples from the environment) and shipments of fresh meat from pigs and cattle at border points from which isolate bacteria and bacterial strains and test for antimicrobial resistance.

Sampling location:
- Sampling of caecal content of pigs in slaughterhouses will be done in slaughterhouses that make up at least 60% of the national domestic production; If, due to the reduced volume of slaughter, it is not possible to collect a representative number of samples at the slaughter line, feces samples (or other "environmental" samples from the environment) will be collected from the primary production of fattening pigs (farms that keep 10 or more breeding heads).
- Sampling of consignments of fresh pork and beef meat at border inspection points will be carried out at all border inspection points where fresh meat of pigs and beef is imported.
Bacterial species and strains of bacteria
Bacterial species and bacterial strains to be monitored:
1. in samples from pig slaughterhouses/primary production are Salmonella spp, Campylobacter jejuni and Campylobacter coli and indicator commensal Escherichia coli (E. coli);
2. the indicator commensal Escherichia coli (E. coli) is in the fresh meat of cattle and pigs taken at border points.
. Number of samples:
- Slaughterhouse: The goal was to collect a sufficient number of samples and isolates that will be representative of the entire population. Sampling in slaughterhouses was every day when slaughtering takes place.
- Primary production: If it is not possible to collect a representative number of samples at the slaughter line, feces samples (or other "environmental" samples from the environment) could be collected from the primary production of fattening pigs (farms that keep 10 or more breeding heads).
- Border inspection points: at all border points marked for fresh meat of cattle and pigs, all shipments of fresh meat of pigs and cattle.
Method of sampling:
- Sampling and organization of sampling of caecal content of pigs on the slaughter line was carried out by the Specialist Veterinary Laboratory in agreement with the Administration, competent inspection or authorized veterinarian for inspection on the slaughter line. Samples are taken from healthy animals sampled from randomly selected epidemiological units; Only one sample per year is taken from one epidemiological unit. Each sample is taken from one randomly selected carcass from the epidemiological unit.
- Sampling and organization of sampling of feces and other samples from the environment of the primary production of fattening pigs will be carried out by the Administration and the veterinary inspection. Samples are taken from healthy animals sampled from randomly selected epidemiological units;
- Sampling of fresh meat of cattle and pigs at border inspection points was carried out by border veterinary inspectors. Consignments sampled on a given day must be randomly selected, and in consignment sampling, samples are taken at random. If the consignment is composed of different batches, samples are taken from different batches. Samples are not pooled.

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8.2. Stratification procedure per animal population and food category

Write text here please

8.3. Randomisation procedure per animal population and food category

Write text here please

8.4. Analytical method used for detection and confirmation[(b)]

Laboratory methods for detection and identification of microbial isolates
- Bacteriological examination of material - aerobic - E. coli
- MEST EN ISO 10272-1 Determination of the presence of Campylobacter spp
- MEST ISO 6579 Demonstration of Salmonella spp

8.5. Laboratory methodology used for detection of antimicrobial resistance[(C)]

Laboratory methods for detecting and testing sensitivity to antimicrobial agents
To determine the sensitivity to antimicrobial agents of bacteria Salmonella spp., C. coli, C. jejuni, indicator commensal E. coli, the given epidemiological limit values and concentration ranges determined in Commission Decision (EU) 2020/1729 were used.

EN ISO 20776-1:2021 (E)
Susceptibility testing of infectious agents and evaluation of performance of antimicrobial susceptibility test devices – Part 1: Broth micro-dilution reference method for testing the in vitro activity of antimicrobial agents against rapidly growing aerobic bacteria involved in infectious diseases

8.6. Library preparation used

Write text here please

8.7. Version of the predictive tool

Write text here please

8.8. Results of investigation

Write text here please

8.9. Additional information

Write text here please

*** to be filled in per combination of bacterial species/matrix**

(a): Method of sampling (description of sampling technique: stage of sampling, type of sample, sampler), Frequency of sampling, Procedure of selection of isolates for susceptibility testing, Method used for collecting data.

(b): Analytical method used for detection and confirmation: according to the legislation, the protocols developed by the EURL-AR should be used and reported here. In the case of the voluntary specific monitoring on Carbapenemase-producers, the selective media used (commercial plates, 'in house' media) should be also reported here. In general, any variation with

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regard to the EURL-AR protocols should be stated here, number of isolates isolated per sample, in particular for *Campylobacter* spp..

(c): Antimicrobials included, Cut-off values

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