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 2022

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 2022.

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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ANIMAL POPULATION TABLES

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	5	Campylobacter, unspecified sp.	5

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	N_A	25	0	<=100	Listeria monocytogenes	25	0
								>100	Listeria monocytogenes	25	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	N_A	45	0	<=100	Listeria monocytogenes	45	0
								>100	Listeria monocytogenes	45	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	28	0	detection	Listeria monocytogenes	28	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	11	0	<=100	Listeria monocytogenes	11	0
								>100	Listeria monocytogenes	11	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	N_A	2656	0	detection	Listeria monocytogenes	2,656	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	5	0	<=100	Listeria monocytogenes	5	0
								>100	Listeria monocytogenes	5	0
	Dairy products (excluding cheeses) - cream - 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
	Dairy products (excluding cheeses) - cream - Household - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	N_A	28	0	detection	Listeria monocytogenes	28	0
	Dairy products (excluding cheeses) - yoghurt - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	N_A	50	0	<=100	Listeria monocytogenes	50	0
								>100	Listeria monocytogenes	50	0
	Fish - smoked - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	N_A	5	0	<=100	Listeria monocytogenes	5	0
								>100	Listeria monocytogenes	5	0
	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	N_A	45	0	<=100	Listeria monocytogenes	45	0
								>100	Listeria monocytogenes	45	0
	Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - Retail - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	10	Gram	N_A	12	9	<=100	Listeria monocytogenes	12	6
								>100	Listeria monocytogenes	12	3
	Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - Retail - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	N_A	12	9	detection	Listeria monocytogenes	12	9
	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	80	0	<=100	Listeria monocytogenes	80	0
								>100	Listeria monocytogenes	80	0
	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	N_A	5	0	<=100	Listeria monocytogenes	5	0
								>100	Listeria monocytogenes	5	0
	Meat from other animal species or not specified - meat products - heat treated, 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
	Meat from pig - 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	5	0	<=100	Listeria monocytogenes	5	0
								>100	Listeria monocytogenes	5	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	N_A	30	0	<=100	Listeria monocytogenes	30	0
								>100	Listeria monocytogenes	30	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) - broilers - before slaughter - Farm - Not Available - environmental sample - boot swabs - Surveillance - Official sampling - Objective sampling	herd/flock		N_A	N_A	Not Available	15	2	Salmonella Enteritidis	2
	Gallus gallus (fowl) - broilers - before slaughter - Farm - Not Available - environmental sample - dust - Surveillance - Official sampling - Objective sampling	herd/flock		N_A	N_A	Not Available	19	1	Salmonella Enteritidis	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	134	17	Salmonella Enteritidis	11
									Salmonella spp., unspecified	6
	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	6	3	Salmonella Enteritidis	3

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	2624	2	Salmonella spp., unspecified	2
	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	28	0	Salmonella	0
	Eggs - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	50	Gram	N_A	ISO 6579-1:2017 Salmonella	5	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	166	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 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 poultry, unspecified - fresh - frozen - Border Control Posts - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	235	17	Salmonella spp., unspecified	17
	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

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**
Hepatovirus A	Unknown	3	23	14	0
Unknown	Unknown	2	112	73	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
Hepatovirus A	Not Available	Not Available	Not Available	Not Available	2021MEFBO-03	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	Not Available	Unknown	N_A	1	15	9	0
					2021MEFBO-04	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	Not Available	Unknown	N_A	1	5	3	0
					2021MEFBO-05	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	Not Available	Unknown	N_A	1	3	2	0
Unknown	Not Available	Not Available	Not Available	Not Available	2021MEFBO-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	Not Available	Unknown	N_A	1	98	73	0
					2021MEFBO-06	General	Unknown	N_A	Unknown	Canteen or workplace catering	Canteen or workplace catering	Not Available	Unknown	N_A	1	14	0	0

ANTIMICROBIAL RESISTANCE TABLES FOR SALMONELLA

Table Antimicrobial susceptibility testing of Salmonella Enteritidis in Gallus gallus (fowl) - laying hens

Sampling Stage: Farm

Sampling Type: environmental sample - boot swabs

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: OTHER 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	2	2	2	2	2	2	2	2
				N of resistant isolates	0	0	0	0	0	0	2	0
Not Available	Not Available	Not Available	<=0.25					2	2			
			0.25								2	
			<=1									2
			2			2						
			<=4		2							
			4				2					
			<=8							2		

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	**2**	**2**	**2**	**2**	**2**	**2**	**2**
			MIC / **N of resistant isolates**	**0**	**0**	**2**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.03		2					
			<=0.25						2	2
			<=0.5	2						
			<=2					2		
			32				2			
			>64			2				

Table Antimicrobial susceptibility testing of Salmonella Enteritidis in Gallus gallus (fowl) - laying hens

Sampling Stage: Farm

Sampling Type: environmental sample - dust

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: OTHER 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**	**1**	**0**
Not Available	Not Available	Not Available	<=0.25					1	1			
			0.25								1	
			<=1									1
			<=4		1							
			4			1						
			<=8							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**
			MIC / **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		
			32				1			
			>64			1				

Table Antimicrobial susceptibility testing of Salmonella Enteritidis in Gallus gallus (fowl) - laying hens

Sampling Stage: Farm

Sampling Type: animal sample - faeces

Sampling Context: Surveillance

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: OTHER 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	0.03								1	
			<=0.25					1	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**	**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	<=0.03			1					
			<=0.25							1	
			<=0.5		1						
			1								1
			<=2						1		
			<=4				1				
			32					1			

Table Antimicrobial susceptibility testing of Salmonella Enteritidis in Gallus gallus (fowl) - broilers - during rearing period

Sampling Stage: Farm

Sampling Type: environmental sample - boot swabs

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: OTHER 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	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
			MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.015								1	
			0.03								1	
			<=0.25					2	1			
			0.5						1			
			<=1									2
			2			2						
			<=4		2							
			4				2					
			<=8							2		

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	**2**	**2**	**2**	**2**	**2**	**2**	**2**
			N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	**MIC**							
			<=0.03		2					
			<=0.25						2	
			<=0.5	2						
			0.5							2
			<=2					1		
			<=4			2				
			4					1		
			32				1			
			64				1			

Table Antimicrobial susceptibility testing of Salmonella Enteritidis in Gallus gallus (fowl) - broilers - during rearing period

Sampling Stage: Border Control Posts

Sampling Type: environmental sample - delivery box liner

Sampling Context: Surveillance

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: OTHER AMR MON

Analytical Method: Micromethod dilution (in microtiter plate)

Country Of Origin:Serbia

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	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	**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				
			32					1			

Table Antimicrobial susceptibility testing of Salmonella Enteritidis in Gallus gallus (fowl) - broilers - day-old chicks

Sampling Stage: Border Control Posts

Sampling Type: environmental sample - delivery box liner

Sampling Context: Surveillance

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: OTHER AMR MON

Analytical Method: Micromethod dilution (in microtiter plate)

Country Of Origin:Serbia

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	9	9	9	9	9	9	9	9
				N of resistant isolates	0	0	0	0	0	0	0	0
Not Available	Not Available	Not Available	<=0.015								6	
			0.03								3	
			<=0.25					9	8			
			0.5						1			
			<=1			4						8
			2			5						1
			<=4		9							
			4				7					
			<=8							9		
			8				2					

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	**9**	**9**	**9**	**9**	**9**	**9**	**9**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.03			7					
			0.064			2					
			<=0.25							7	8
			<=0.5		9						
			0.5							2	1
			<=2						9		
			<=4				9				
			32					7			
			64					2			

ANTIMICROBIAL RESISTANCE TABLES FOR ESCHERICHIA COLI

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	24-Jul-2023
Disease Status	24-Jul-2023
Food Borne Outbreaks	24-Jul-2023
Prevalence	24-Jul-2023

ZOONOSES MONITORING

EUROPEAN FOOD SAFETY AUTHORITY

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 2022

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 diseases (bovine, cattle and small ruminants TBC and brucella testing) and number of animals is the Veterinary Information System (VIS) operating within AFSVPA. VIS includes data on bovine, sheep, goats and pigs since 2009, 2011 and 2014 respectively. The data on animal population from 2022 are not submitted, due to recent cyber-attack, problems in operation of the VIS and uncertainty in exact data available.

However, due to low variations in number of animals over the years, data from 31st December 2021 can be used and presented.

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;
- **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 numbers. 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.

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 (23 in total), and LAU2 settlements, 1,307.

VIS upgrade will contain geographical coordinates of animals and holdings.

2.5. Additional information

No

(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 2022. Last confirmed case (one case) of bovine animals was in 2019. year

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

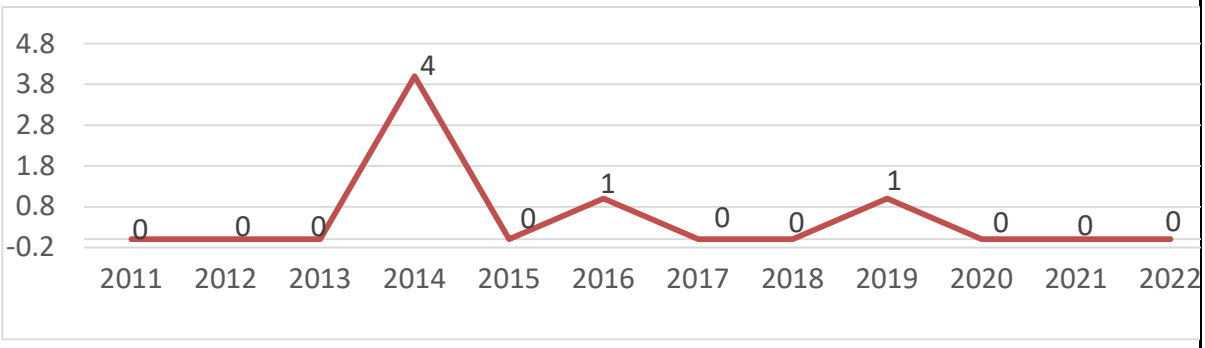
No recent evaluation performed jointly by animal, food safety and human sector.

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

No

3.4. Additional information

Occurrence of tuberculosis cases in bovine animals over years:



* **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 (authorised veterinarian) 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

Operator: Veterinary ambulances, Veterinary inspection, DVL

For more than 10 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 establishments, on the whole territory of Montenegro. The examination is performed by authorised veterinary ambulances that this activity has been delegated to as an activity of public interest, in accordance with the Veterinary Law.

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 slaughtered or dead animals, the veterinarian 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

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.

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).

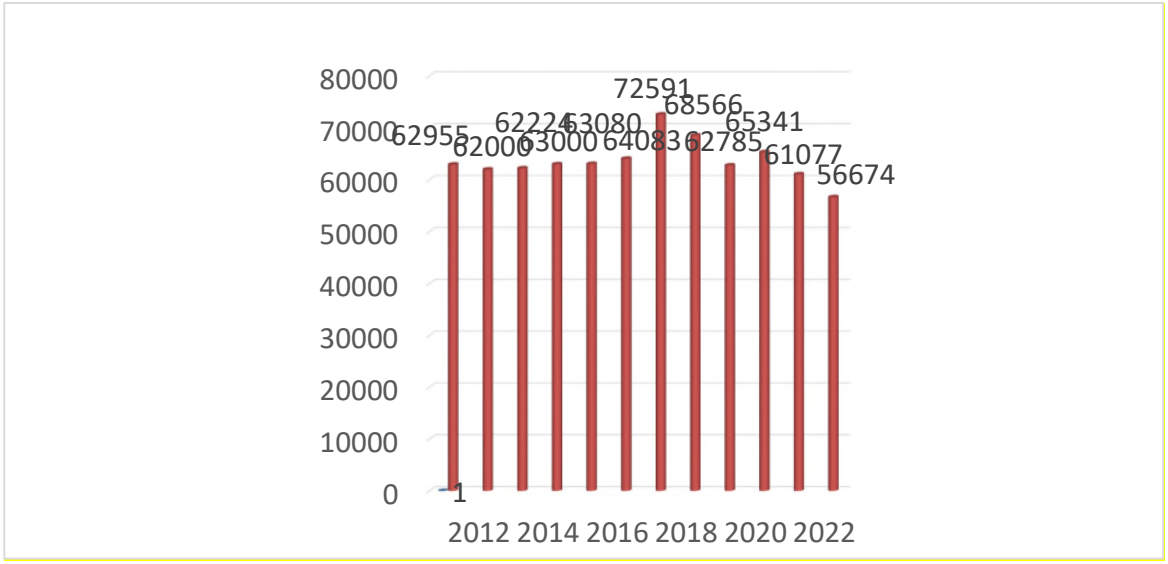
In the case when tbc is officially confirmed, official laboratory notifies the veterinary inspector (competent authority).

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 2022. Case from 2019, was confirmed in the imported animal for slaughtering.

Overview of the number of bovine animals tested in the period 2011-2022:



4.5. Additional information

*** 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)]

For many years the testing has been covering the entire bovine population (older than 12 months, according to the data from the Electronic Database), 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 jointly by animal, food safety and human 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

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.

Responsible institution: AFSVPA, Veterinary Inspection

Operator: Veterinary ambulances (authorised veterinarians), 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.
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.

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

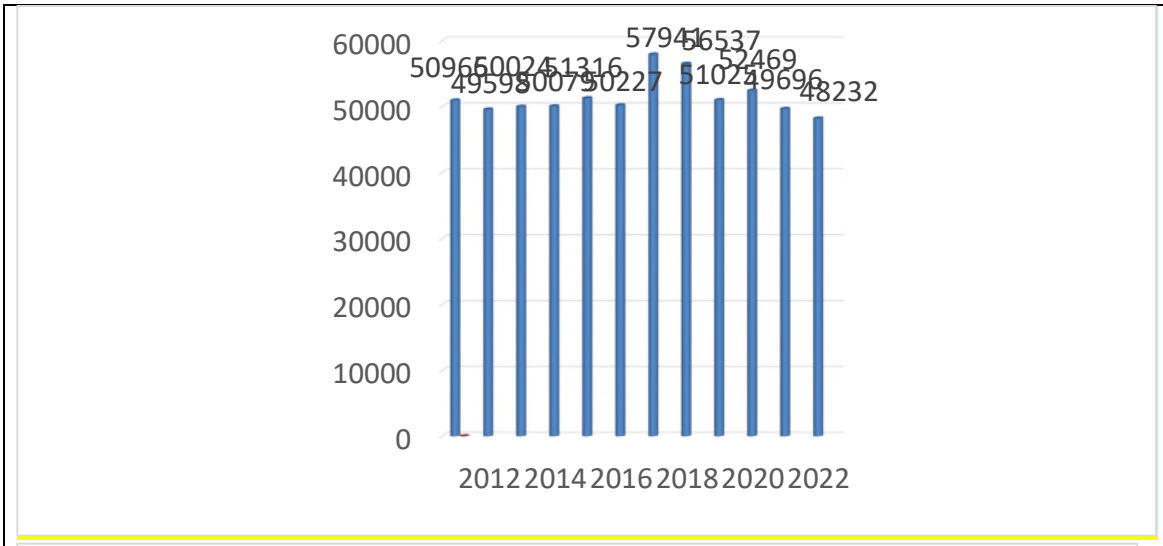
Notification is performed in accordance with the Rulebook on the classification of infectious animal diseases, manner of notification of occurrence or suspicion and declaring infectious animal diseases resolved (Official Gazette of MNE No. 92/2017).

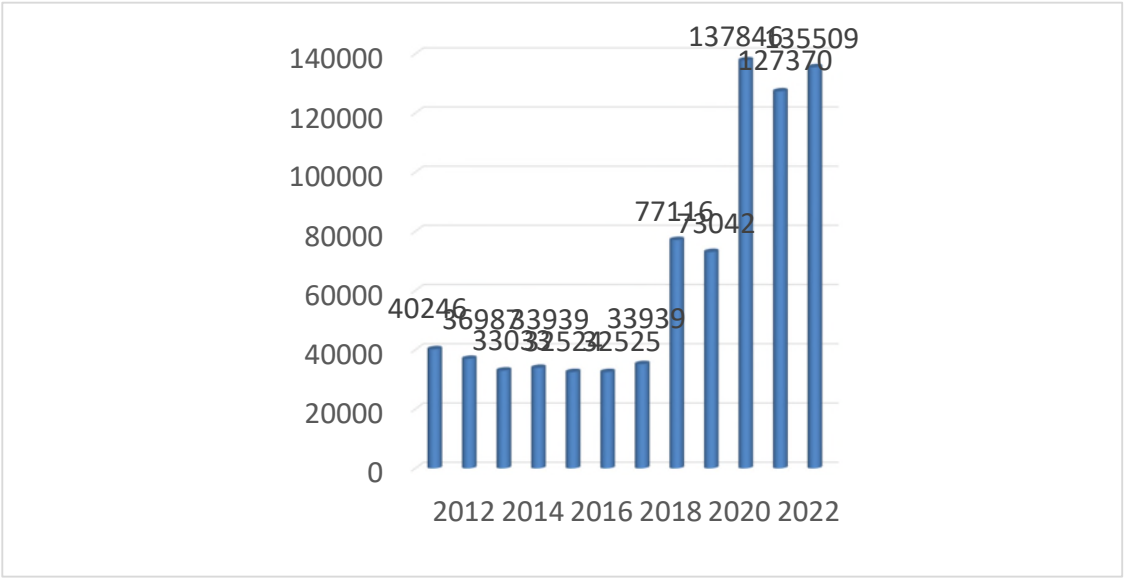
In the event of suspicious or positive case on brucellosis, DVL notifies the veterinary inspector (competent authority).

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

Overview of the number of bovine animals tested in the period 2011-2022:

Overview of the number of ovine/caprine animals tested in the period 2011-2022:





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, Salmonella, Campylobacter and other zoonotic agents* in food - All foodstuffs - food sample

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

Institution responsible for food safety and official food testing (monitoring, official controls. Border inspection posts) is AFSVPA.

Officially designated laboratories for microbiological food testing are SVL and PHI.

There are no aggregated and compiled data from various food monitoring and results of testing through official controls and border inspection posts. 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

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

Monitoring in food
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.
Data provided in DFC represent only data from SVL, but no data of PHI.
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 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.
Responsibility of FBOs – sampling plans
Testing on listeria monocytogenes is also the responsibility of FBOs in accordance with the Food safety law, Regulation on food hygiene and Regulation on microbiological criteria on food safety.

Sampling through official controls and border inspection posts
Samples are also taken and tested during official controls at the market and production, as well as border inspection posts.

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.

8.3. 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.

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

8.5. Additional information

No available information at national level.

*** 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

Institution responsible for national programme for control of salmonella in poultry and for food safety and official food testing (monitoring, official controls. border inspection posts) is AFSVPA.

Officially designated laboratories for national programme for control of salmonella in poultry is SVL.

Officially designated laboratories for microbiological food testing are SVL and PHI.

There are no aggregated and compiled data from poultry 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)]

Systematic sampling of domestic poultry of the Gallus gallus species will be 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.

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

Sampling and laboratory testing are carried out in accordance with the Special Program/Measures for Detecting the Presence of Foodborne Diseases (Salmonella).
Monitoring in food
Monitoring of food for zoonotic agents, in production and at the market, including Salmonella spp. has been foreseen through the yearly monitoring of microbiological criteria - official laboratories for monitoring programme are SVL and IPH.

Data provided in DFC represent only data from SVL, but no data of 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 soft cheese from processing at the holding from own animals.
The implementation of monitoring is the responsibility of AFSVPA – veterinary and food safety inspectors and official laboratories.
Responsibility of FBOs – sampling plans
Testing on salmonella spp. is also the responsibility of FBOs in accordance with the Food safety law, Regulation on food hygiene and Regulation on microbiological criteria on food safety.
Sampling through official controls and border inspection posts
Samples are also taken and tested during the official controls at the market and in production, as well as border inspection posts.

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

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).

11. Food-borne Outbreaks

11.1. 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.

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

Write text here please

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

During 2022, 5 FWB outbreaks were recorded in Montenegro.

The total number of patients in all 5 outbreaks was 135. Of that number 87 person was hospitalized. There were no deaths caused by FWBO in 2022.

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

5.4. 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.

5.5. 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

5.6. 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

5.7. 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.

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

Laboratory officially designated to test isolates on AMR is SVL. SVL is also reporting institution for AMR.

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

7. 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

There is no monitoring for AMR in accordance with Commission Decision 2020/1729 implemented so far. Testing of bacteria isolates on AMR in animals and food have been introduced from 2022, only for salmonella and in poultry.

There are no aggregated and compiled data from AMR data from animals, food and humans. There is no integration, evaluation and analysis of data from human and animal and food safety sector.

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

No representative data available from AMR in animals and food to be compared with findings in human.

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

Rising awareness activities: Baseline study conducted in Montenegro on antimicrobial use (AMU) in priority livestock species, field veterinarians and veterinary pharmacies (FAO/AFSVPSA) – information on AB and AMR, as well as dissemination of fliers on prudent AB use. Brochure on prudent use of AB in veterinary medicines, prepared by Institute for medicines and medical devices and distributed to veterinarians.

Work on design of the programme to monitor AMR in animals and food in accordance with EU regulation and the risk evaluation at national level. Comparison of data from human sector, other sources for AB sensibility and use.

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

N/A

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);

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

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

There is no monitoring for AMR in accordance with Commission Decision 2020/1729 implemented so far. Testing of bacteria isolates on AMR in animals and food have been introduced from 2022, only for salmonella and in poultry.

There are no aggregated and compiled data from AMR data from animals, food and humans. There is no integration, evaluation and analysis of data from human and animal and food safety sector.

8.2. Stratification procedure per animal population and food category

In 2022, 15 Salmonella enteritidis isolated collected from poultry (hens, broilers and one day old chicks, either as border inspection control procedure or through measures for disease control at farms) tested and data transferred to EFSA

8.3. Randomisation procedure per animal population and food category

Write text here please

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

Write text here please

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

Micromethod dilution (in microtiter plate)

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

No information yet available

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 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

Montenegro