

Montenegro

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

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

IN 2018

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 2018.

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.

* 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

Animal species	Category of animals	Population		
		animal	slaughter animal (heads)	herd/flock
Cattle (bovine animals)	Cattle (bovine animals)	88,849	30,346	23,075
Gallus gallus (fowl)	Gallus gallus (fowl) - broilers		1,232,354	
Goats	Goats	46,282	161	
Pigs	Pigs	27,563	2,678	11,910
Sheep	Sheep	188,830	46,042	
Sheep and goats	Sheep and goats			6,966

DISEASE STATUS TABLES

Table Bovine brucellosis in countries and regions that do not receive Community co-financing for eradication programme

Region	Number of herds with status officially free	Number of infected herds	Total number of herds
Montenegro	0	0	23,075

Table Ovine or Caprine brucellosis in countries and regions that do not receive Community co-financing for eradication programme

Region	Number of herds with status officially free	Number of infected herds	Total number of herds
Montenegro	0	0	6,966

DISEASE STATUS TABLES

Table Bovine tuberculosis in countries and regions that do not receive Community co-financing for eradication programme

Region	Number of herds with status officially free	Number of infected herds	Interval between routine tuberculin tests	Total number of herds
Montenegro	0	0	12	23,075

PREVALENCE TABLES

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 of units tested	N of units positive
Not Available	Cheeses made from cows' milk - fresh - made from raw or low heat-treated milk - Processing plant - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/fee d)	25	Gram	N_A	2071	0	detection	Listeria monocytogenes	2,071	0
	Cheeses made from cows' milk - hard - made from pasteurised milk - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/fee d)	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 inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/fee d)	10	Gram	N_A	65	0	<= 100	Listeria monocytogenes	65	0
								>100	Listeria monocytogenes	65	0
	Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - Retail - Not Available - food sample - Monitoring - Official sampling - Objective sampling	single (food/fee d)	10	Gram	N_A	111	7	<= 100	Listeria monocytogenes	111	2
								>100	Listeria monocytogenes	111	2
	Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - Retail - Not Available - food sample - Monitoring - Official sampling - Objective sampling	single (food/fee d)	25	Gram	N_A	111	7	detection	Listeria monocytogenes	111	5
	Dairy products (excluding cheeses) - cream - made from pasteurised milk - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/fee d)	10	Gram	N_A	60	0	<= 100	Listeria monocytogenes	60	0
								>100	Listeria monocytogenes	60	0
	Dairy products (excluding cheeses) - cream - made from pasteurised milk - Processing plant - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/fee d)	25	Gram	N_A	71	0	detection	Listeria monocytogenes	71	0
	Dairy products (excluding cheeses) - ice-cream - made from pasteurised milk - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/fee d)	10	Gram	N_A	25	0	<= 100	Listeria monocytogenes	25	0
								>100	Listeria monocytogenes	25	0
	Dairy products (excluding cheeses) - yoghurt - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/fee d)	10	Gram	N_A	54	0	<= 100	Listeria monocytogenes	45	0
								>100	Listeria monocytogenes	45	0
	Dairy products (excluding cheeses) - yoghurt - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/fee d)	10	Gram	N_A	54	0	detection	Listeria monocytogenes	9	0
	Fishery products, unspecified - smoked - Retail - Not Available - food sample - Monitoring - Official sampling - Objective sampling	single (food/fee d)	10	Gram	N_A	51	1	<= 100	Listeria monocytogenes	51	0
								>100	Listeria monocytogenes	51	0
	Fishery products, unspecified - smoked - Retail - Not Available - food sample - Monitoring - Official sampling - Objective sampling	single (food/fee d)	25	Gram	N_A	51	1	detection	Listeria monocytogenes	51	1
	Meat from other animal species or not specified - meat products - cooked, ready-to-eat - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/fee d)	10	Gram	N_A	55	0	<= 100	Listeria monocytogenes	55	0
								>100	Listeria monocytogenes	55	0
	Meat from other animal species or not specified - meat products - cooked, ready-to-eat - Retail - Not Available - food sample - Monitoring - Official sampling - Objective sampling	single (food/fee d)	25	Gram	N_A	127	0	<= 100	Listeria monocytogenes	83	0
								>100	Listeria monocytogenes	83	0
	Meat from other animal species or not specified - meat products - cooked, ready-to-eat - Retail - Not Available - food sample - Monitoring - Official sampling - Objective sampling	single (food/fee d)	25	Gram	N_A	127	0	detection	Listeria monocytogenes	44	0
	Meat from other animal species or not specified - meat products - fermented sausages - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/fee d)	10	Gram	N_A	35	0	<= 100	Listeria monocytogenes	35	0
								>100	Listeria monocytogenes	35	0
	Meat from other animal species or not specified - meat products - fermented sausages - Retail - Not Available - food sample - Monitoring - Official sampling - Objective sampling	single (food/fee d)	10	Gram	N_A	15	0	<= 100	Listeria monocytogenes	15	0
								>100	Listeria monocytogenes	15	0
	Meat from other animal species or not specified - meat products - fermented sausages - Retail - Not Available - food sample - Monitoring - Official sampling - Objective sampling	single (food/fee d)	25	Gram	N_A	15	0	detection	Listeria monocytogenes	15	0

Table Salmonella:SALMONELLA in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	N of flocks under control programme	Target verification	Sampling Details	Method	Total units tested	Total units positive	Zoonoses	N of units positive
Not Available	Gallus gallus (fowl) - unspecified - Border inspection activities - Not Available - unknown - Surveillance - Official sampling - Objective sampling	animal		N_A	N_A	Not Available	27	4	Salmonella	2
									Salmonella Enteritidis	1
									Salmonella group C	1
	Gallus gallus (fowl) - unspecified - day-old chicks - Farm - Not Available - unknown - Surveillance - Official sampling - Objective sampling	animal		N_A	N_A	Not Available	106	8	Salmonella	8
									Salmonella group C	8
	Gallus gallus (fowl) - unspecified - Farm - Not Available - animal sample - cloacal swab - Surveillance - Official sampling - Objective sampling	animal		N_A	N_A	Not Available	48	0	Salmonella	0
	Gallus gallus (fowl) - unspecified - Farm - Not Available - animal sample - faeces - Surveillance - Official sampling - Objective sampling	animal		N_A	N_A	Not Available	268	85	Salmonella	57
									Salmonella Enteritidis	9
									Salmonella group B	4
									Salmonella group C	13
									Salmonella group E	2
	Gallus gallus (fowl) - unspecified - Farm - Not Available - environmental sample - boot swabs - Surveillance - Official sampling - Objective sampling	animal		N_A	N_A	Not Available	10	6	Salmonella	4
									Salmonella Enteritidis	2
Gallus gallus (fowl) - unspecified - Farm - Not Available - environmental sample - Surveillance - Official sampling - Objective sampling	herd/flock		N_A	N_A	Not Available	11	3	Salmonella Enteritidis	3	
								Salmonella spp., unspecified	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 of units positive
Not Available	Cheeses made from cows' milk - fresh - made from raw or low heat-treated milk - Processing plant - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	2071	0	Salmonella	0
	Dairy products (excluding cheeses) - cream - made from pasteurised milk - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	10	0	Salmonella	0
	Dairy products (excluding cheeses) - cream - made from pasteurised milk - Processing plant - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	71	0	Salmonella	0
	Dairy products (excluding cheeses) - milk powder and whey powder - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	6	0	Salmonella	0
	Eggs - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	batch (food/feed d)	50	Gram	N_A	ISO 6579:2002 Salmonella	52	0	Salmonella	0
	Fish - raw - frozen - Processing plant - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	5	0	Salmonella	0
	Live bivalve molluscs - mussels - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	5	0	Salmonella	0
	Meat from bovine animals - carcass - Processing plant - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	400	Square centimetre	N_A	ISO 6579:2002 Salmonella	28	0	Salmonella	0
	Meat from bovine animals - fresh - chilled - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	5	0	Salmonella	0
	Meat from other animal species or not specified - meat preparation - intended to be eaten cooked - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	5	0	Salmonella	0
	Meat from pig - carcass - Processing plant - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	400	Square centimetre	N_A	ISO 6579:2002 Salmonella	6	0	Salmonella	0
	Meat from pig - fresh - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Meat from poultry, unspecified - carcass - Processing plant - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	10	0	Salmonella	0
	Meat from poultry, unspecified - fresh - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	178	1	Salmonella Salmonella Enteritidis	1
	Meat from poultry, unspecified - fresh - frozen - Border inspection activities - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	70	0	Salmonella	0
	Meat from poultry, unspecified - fresh - Processing plant - Not Available - food sample - Surveillance - Official sampling - Objective sampling	single (food/feed d)	25	Gram	N_A	ISO 6579:2002 Salmonella	2	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 of units positive
Not Available	All feedingstuffs - Border inspection activities - Not Available - feed sample - Surveillance - Official sampling - Objective sampling	batch (food/feed)	25	Gram	N_A	Not Available	20	0	Salmonella	0
	All feedingstuffs - Farm - Not Available - feed sample - Unspecified - Official sampling - Objective sampling	batch (food/feed)	25	Gram	N_A	Not Available	3	0	Salmonella	0
	All feedingstuffs - Processing plant - Not Available - feed sample - Monitoring - Official sampling - Objective sampling	batch (food/feed)	25	Gram	N_A	Not Available	7	0	Salmonella	0
	All feedingstuffs - Retail - Not Available - feed sample - Monitoring - Official sampling - Objective sampling	batch (food/feed)	25	Gram	N_A	Not Available	22	0	Salmonella	0

FOODBORNE OUTBREAKS TABLES

Foodborne Outbreaks: summarized data

Causative agent	Food vehicle	Outbreak strenght		Strong				Weak			
		N outbreaks	N human cases	N outbreaks	N human cases	N hospitalized	N deaths	N outbreaks	N human cases	N hospitalized	N deaths
Rotavirus	Unknown	1	70	0	0						
Salmonella Enteritidis	Unknown	1	13	0	0						
Unknown	Unknown							6	104	18	0

Strong Foodborne Outbreaks: detailed data

Causative agent	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
Rotavirus	Not Available	FBO07	Not Available	Unknown	N_A	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans	Not Available	Not Available	Not Available	Not Available	N_A	1	70	0	0
Salmonella Enteritidis	Not Available	FBO01	Not Available	Unknown	N_A	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent; Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans	Not Available	Not Available	Not Available	Not Available	N_A	1	13	0	0

Weak Foodborne Outbreaks: detailed data

Causative agent	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
Unknown	Not Available	FBO02	Not Available	Unknown	N_A	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans;Descriptive epidemiological evidence	Not Available	Not Available	Not Available	Not Available	N_A	1	25	18	0
		FBO03	Not Available	Unknown	N_A	Descriptive epidemiological evidence	Not Available	Not Available	Not Available	Not Available	N_A	1	8	0	0
		FBO04	Not Available	Unknown	N_A	Descriptive environmental evidence;Descriptive epidemiological evidence	Not Available	Not Available	Not Available	Not Available	N_A	1	19	0	0
		FBO05	Not Available	Unknown	N_A	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans;Descriptive epidemiological evidence	Not Available	Not Available	Not Available	Not Available	N_A	1	9	0	0
		FBO06	Not Available	Unknown	N_A	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans;Descriptive epidemiological evidence	Not Available	Not Available	Not Available	Not Available	N_A	1	5	0	0
		FBO08	Not Available	Unknown	N_A	Descriptive environmental evidence;Descriptive epidemiological evidence	Not Available	Not Available	Not Available	Not Available	N_A	1	38	0	0

ANTIMICROBIAL RESISTANCE TABLES FOR CAMPYLOBACTER

ANTIMICROBIAL RESISTANCE TABLES FOR SALMONELLA

ANTIMICROBIAL RESISTANCE TABLES FOR INDICATOR 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
Animal Population	29-Jul-2019
Disease Status	29-Jul-2019
Food Borne Outbreaks	29-Jul-2019
Prevalence	29-Jul-2019

Montenegro, Text Forms 2018

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1. Institutions and Laboratories involved in zoonoses monitoring and reporting

- Ministry of Agriculture and Rural Development
- Administration for Food Safety, Veterinary and Phytosanitary Affairs
- Institute for Public Health (IPH)
- Diagnostic Veterinary Laboratory

The Ministry of Agriculture and Rural Development (MARD) is the competent authority for the field of food safety, veterinary and phytosanitary policy. MARD adopts legislation in the field of veterinary policy, the program of mandatory animal health protection measures, special programs of animal health protection, programs for monitoring of zoonoses, zoonotic agents and monitoring of their resistance to antimicrobial agents, salmonella control programs, residue monitoring program, decides upon complaints to decisions made in the first instance procedure, co-operates with international organisations and competent authorities of other states in the veterinary field.

Administration for Food Safety, Veterinary and Phytosanitary Affairs (AFSVPA) is independent government body under the supervision of MARD, established by the Decree on the Organisation and Functioning of Public Administration (Official Gazette of Montenegro 80/15). AFSVPA responsibilities include:

- Keeping registers of animals, holdings and establishments;
- Adopting multiannual and annual plans of official controls in the field of animal health and welfare, food and feed safety;
- Development of technical basis for: animal health protection strategy, the program of mandatory animal health protection measures, other special programs, contingency plans and regulations in the veterinary field;
- Registration and approval of establishments in accordance with this Veterinary Law;
- Carrying out official controls in veterinary field;
- cooperation with international organisations and competent authorities of other states in the veterinary field. Within AFSVPA operate tree departments; Food Safety, Veterinary and Phytosanitary department, each carrying out responsibilities of relevance.

Institute for Public Health (IPH) is a highly-specialized health institution at the tertiary level of health care, with the aim to preserve and improve the health of all citizens. The Institute performs the following tasks:

- monitors and controls timely implementation of preventive programs of interest to Montenegro;
- monitors, investigates and analyzes the epidemiological situation;
- collects and processes health-statistical data;
- maintains medical records of interest to Montenegro;
- carries out microbiological and parasitological, chemical, biological, toxicological, biochemical and other laboratory analyses.

Laboratories for chemistry and sanitary microbiology are accredited by the Accreditation Body of Montenegro for food, water and soil/sediment analysis as well as for noise testing. Scientific-research activity of the Institute is directed specially to research in the field of public health activities, and research related to the improvement and development of the health service.

The Institute is the teaching base of the Faculty of Medicine, which provides conditions and implements plans and programs of the University of Montenegro, Faculty of Medicine, in accordance with the law.

IPH is accredited with standard **MEST EN ISO / IEC 17025:2018** of the Accreditation body of Montenegro. Scope of accreditation includes Microbiological testing of water, foodstuffs (food, dietary products and dietary supplements) Physical chemical analysis: drinking water; surface and underground water; swimming pool water; waste water; sediment; fish and fish products; milk and dairy products; wine; meat and meat products; olive oil; honey and honey products; grains, grains products, milled and bakery products and pasta; soups, broths, sauces and condiments; table salt and salt for food industry; beverages and juices; food of plant and animal origin, Testing of environmental noise Sampling of drinking water, surface and underground waters and waste waters for chemical analysis and sampling of drinking water for microbiological analysis.

Diagnostic Veterinary Laboratory (DVL) is the official laboratory by the MARD. DVL performs diagnostic veterinary activities on the territory of Montenegro in order to protect and improve the health of animals. The tasks of the laboratory are detection and diagnosis of animal diseases, the implementation of the animal health program, controls for ensuring the health safety of products of animal origin and feed. In addition, the laboratory also deals with research work, veterinary education and public education.

DVL uses the laboratory information system Visaris LabIS. Visaris LabIS is a latest generation laboratory management and quality control information system for fully paperless automated laboratory and quality workflow support systems.

DVL is accredited with standard **MEST EN ISO/IEC 17025:2011** of the Accreditation body of Montenegro. Scope of accreditation: Microbiological testing of food of animal origin: meat and meat products, milk and dairy products, eggs and egg products Microbiological, serology, immunology and parasitological testing of biological materials (organic secretion, excretion, tissues, tissue liquids, swabs).

2. Animal population

1. Sources of information and the date(s) (months, years) the information relates to^(a)

Data source 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 submitted are as on 31st December 2018.

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 gastropods intended 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 other products 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.

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 has a steady increase. Dominant type of holding is small family farm with few exception of large farms. The characteristic of Montenegro is that holdings are small in more than 90% of cases resulting in a low average number per holding as shown in following table.

Species	Average number of animals per holding	Number of animals	Number of holdings
Bovine animals	4,5	72.103	15.925
Sheep and goats	29	188.830 + 44.857	8.040
Pigs	2,2	21.914	9.900

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 is out to be upgraded to contain geographical coordinates of animals and holdings.

5. Additional information

3. Description of Monitoring/Surveillance/Control programmes system*: Please add the matrix and zoonotic agent *L. monocytogenes* in food - All foodstuffs - food sample

1. Monitoring/Surveillance/Control programmes system

The Compulsory Programme of Animal Health Measures and Program of Measures on Food and Feed Safety establish preventive measures for monitoring, preventing the outbreak, detection, control and eradication of infectious and parasitic diseases, the manner of their implementation, the entities that will implement them, the financial sources, reporting, and other conditions for their implementation.

Programs are adopted annually.

The implementation of measures is mandatory throughout the epizootiological area of Montenegro, appropriate to the degree of danger and the epizootiological situation from the previous period.

The programs create preconditions for harmonization of the animal health and food safety field with the EU requirements, which relate to obtaining and maintaining the health status of farms for certain infectious diseases and protection of human health.

The implementation of Programs is the responsibility of the administrative authority competent for veterinary affairs (hereinafter: AFSVPA).

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.

2. Measures in place^(b)

In case of suspicion of particularly dangerous and contagious diseases suspected of being reported, or health problems in animals that may be suspected of infectious disease, observed by the animal keeper or veterinarian during active or passive surveillance, intervention or any other in that case, the suspicion is reported to the competent official veterinarian without delay.

The veterinarian is obliged to carry out a clinical examination of the animal, take a detailed history, data on the origin and movement of the animal, instruct the keeper to carry out the prescribed measures and record the ordered measures in the records kept on the holding and take the necessary measures to confirm or exclude suspicion of the disease. That is, determining the cause of the animal's death and preventing the spread of the disease.

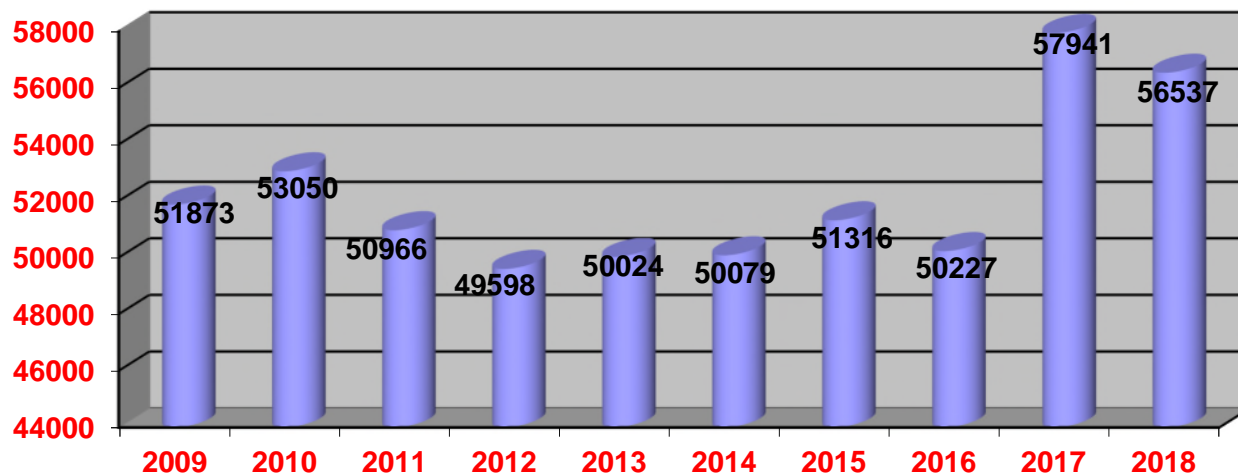
Depending on the specificity and characteristics of the case, that is, the suspicion raised, the official veterinarian, with the expert support of the DVL, or veterinarian from the competent veterinary clinic, performs additional epizootiological tests and sampling of laboratory testing materials.

The DVL carries out laboratory diagnostic and other tests, gives expert opinions and recommendations in

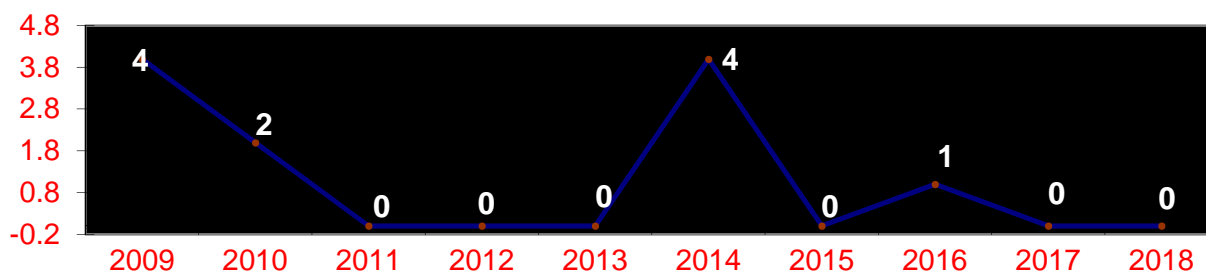
<p>accordance with the recommendations of the International Organization for Animal Health (OIE) and other relevant institutions in the field of animal health, for taking measures for diseases for which no specific regulations established rules of procedure, provides expert assistance to the official veterinarian in the supervision and implementation of measures to prevent the occurrence, detection, control and eradication of infectious animal diseases.</p>
<p>3. Notification system in place to the national competent authority^(c)</p> <p>For the purpose of diagnosis of particularly dangerous and infectious diseases of domestic animals suspected or confirmed, the veterinarian takes samples of tissues and organs of sick and / or dead animals, according to the sampling instructions of the DVL and submit them to the DVL.</p> <p>For the purpose of regular and timely updating of animal disease data and mandatory international notification (OIE, Animal Disease Notification System - ADNS, competent veterinary authorities of neighboring countries), veterinarians are obliged, without delay, no later than 24 hours (by telephone and fax or electronically) to report suspected or confirmed cases of diseases from the list of diseases subject to reporting obligations (especially dangerous infectious diseases and dangerous diseases) to the competent official veterinarian.</p> <p>The competent official veterinarian notifies the AFSVPA without delay of any suspected or confirmed occurrence of the disease within 24 hours at the latest (by telephone and fax or electronically).</p> <p>The official veterinarian reports the disease (by fax or electronic means).</p> <p>When the presence of an infectious disease is confirmed on the basis of the results from the diagnostic tests, the DVL, which carried out the diagnostic examination, confirms the presence of the infectious disease without delay (by telephone, fax or electronically) and in writing informs the AFSVPA and the competent official veterinarian.</p> <p>On the basis of a risk analysis of the occurrence of the disease, in order to prevent the spread of the disease and / or transmit it to humans, the Ministry may order the implementation of one or more measures, in accordance with the degree of danger of spreading the disease.</p>
<p>4. Additional information</p>

3. 1. Description of Monitoring/Surveillance/Control programmes system* Bovine Tuberculosis

<p>1. Monitoring/Surveillance/Control programmes system</p> <p>For the timely detection and control of tuberculosis in all bovine animals older than six weeks, an intradermal tuberculin test is carried out in order to detect and eradicate this disease and to create conditions for obtaining and maintaining the health status of tuberculosis-free holdings in the territory of Montenegro.</p> <p>Operator: Veterinary clinics, veterinary inspection, DVL.</p> <p>Coverage: 73,000 cattle in the territory of Montenegro</p>
<p>2. Measures in place^(b)</p> <p>All cattle on a holding of all ages is recorded in the tuberculin list for each holding individually, on the basis of the actual situation on the holding, including cattle under six weeks old, and for cattle older than six weeks enter the tuberculinization data in the tuberculin list and enter data from the list in the AFSVPA Electronic Database. After the prescribed time has elapsed since the tuberculin application (72 hours), the veterinarian reads the reaction of the bovine animals to the tuberculin and records the result in the tuberculin list for the holding concerned, in which he / she has previously entered the data during the tuberculin application. It is recommended that the reaction be read by the same person or veterinarian who administered the tuberculin.</p> <p>Of slaughtered or euthanized bovine animals in cases of suspected tuberculosis, samples must be taken and DVL submitted for bacteriological testing for the presence of tuberculosis agents.</p> <p>Bovine tuberculosis has been officially confirmed when the causative agent of <i>Mycobacterium bovis</i> is isolated.</p>
<p>3. Notification system in place to the national competent authority^(c)</p> <p>The data on the results of the tuberculin test must be entered in the Electronic database no later than five working days from the date of reading, and in case a suspected or positive reaction to the tuberculin test is recorded, the veterinarian is obliged to enter the results without delay, and no later than 24 hours from the time of reading a suspicious or positive result.</p>
<p>4. Additional information</p> <p>The trends of TBC testing have increased in last two years due to the increase of number of cattle. The data is shown in graph below.</p>



There were no positive cases in 2018



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

1. Monitoring/Surveillance/Control programmes system

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: Ministry of Agriculture and Rural Development – AFSVPA, Veterinary Inspection.

Operator: Veterinary clinics, DVL, veterinary inspection.

Coverage: 59,000 cattle and 89,500 sheep and goats in the territory of Montenegro.

2. Measures in place^(b)

Diagnostic testing of blood sera of all bovine animals over 12 months of age, other than males intended for fattening, is carried out once a year using the Rose Bengal buffered antigen test method and sheep and goat diagnostic testing of sheep and goats older than six months using the brucella antigen test buffered method

When sampling, 7 - 8 ml of blood (approximately two fingers to the tip of the tube) is taken from each animal. Blood samples are stored at refrigerator temperature (4 - 8 ° C), not frozen or overheated.

Blood samples are submitted to the DVL within 24 to a maximum of 36 hours to avoid hemolysis.

Any hemolytic sample as well as a sample that does not contain sufficient blood for the diagnostic test will be rejected by the laboratory as unsuitable for testing, and the veterinary clinic is obliged to repeat the sampling and delivery of samples at their own expense.

Diagnostic testing of bovine animals, other than males intended for fattening, sheep and goats, is compulsory:

- for abortions - after 15 days from the abortion;
- when clinical signs of brucellosis are identified - abortion, placental retardation, orchitis and epididymitis, arthritis that may be associated with other clinical signs, or other changes that may be suspected of brucellosis;
- which have been in contact with humans or animals suspected of being infected or suffering from brucellosis.

3. Notification system in place to the national competent authority^(c)

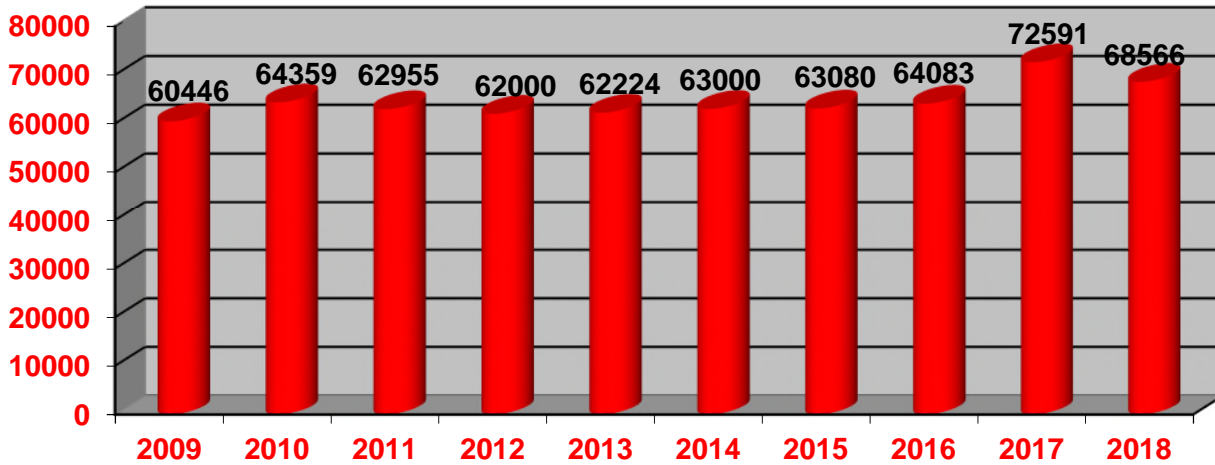
All data relating to the actual situation on the holding - newly recorded or found heads, as well as those no longer on the holding, must be recorded in the Electronic Database immediately after blood samples have been taken.

The Administration will, no later than 20 days after the expiry of the prescribed deadline for the submission of

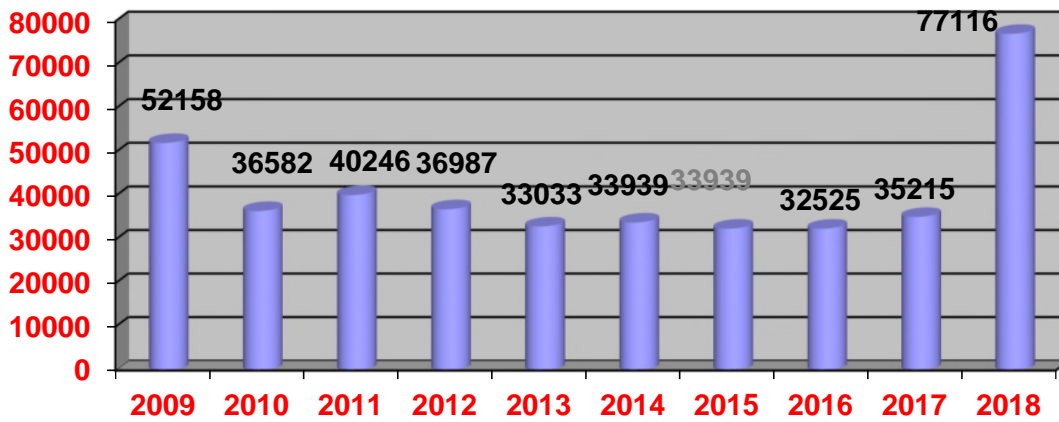
the annual census, submit to the competent official veterinarian a list of holdings that have not fulfilled the obligation to submit an annual list of sheep and goats for the purpose of taking the measures prescribed by law.

4. Additional information

The trends of Brucellosis testing have an increase in last two years due to the increase of number of cattle. The data is shown in graph below. There were no positive cases in 2018.



The number of sheep and goats tested increased significantly as shown in table below due to a improvement of control systems for animal inventory in last year. The data is shown below



3.3. Description of Monitoring/Surveillance/Control programmes system* Avian influenza

1. Monitoring/Surveillance/Control programmes system

In order to detect avian influenza occurrence in a timely manner, active and passive monitoring of avian influenza occurrence in wild birds and domestic poultry is carried out.

Carrier: Veterinary clinics, DVL, veterinary inspection.

- DVL prepares an annual report on activities carried out for the implementation of this program and submits it to the Management Board.

When the presence of highly pathogenic avian influenza is detected, the emergency, harmless killing of dead birds, infected birds is carried out under the prescribed zoo-hygiene and biosafety measures under the supervision of the official veterinarian,.

Realization period: passive monitoring - throughout the year, active monitoring - during the migration period of wild birds (March-April and October-November).

2. Measures in place^(b)

in order to effectively monitor the health status of the poultry, data on holdings is entered in the register of poultry holders kept by the AFSVPA.

In case of sudden death of birds (wild - migratory or domestic) with clinical signs suggesting or suspected to be avian influenza, the veterinarian shall take tracheal and / or cloacal swabs of the dead birds or other appropriate samples and submit them to the laboratory for examination (passive monitoring of avian influenza).

For the active monitoring of avian influenza, the following is performed:

- sampling of tracheal and / or cloacal swabs of migratory birds caught and submitting to the laboratory for

testing, with data: place of catch, date of catch, exact name of the bird species (native or Latin), in accordance with the expert guidance of the AFSVPA;

- DVL performs laboratory-diagnostic testing for avian influenza from blood samples submitted for the presence of specific antibodies by serological ELISA and for the tracheal and / or cloacal swabs captured by migratory birds by molecular Real-Time PCR technique.

3. Notification system in place to the national competent authority^(c)

DVL prepares an annual report on activities carried out for the implementation of this program and submits it to the Management Board.

When the presence of highly pathogenic avian influenza is detected, the emergency, harmless killing of dead birds, infected birds and those deemed official by the official veterinarian is carried out under the prescribed zoohygiene and biosecurity measures under the supervision of the official veterinarian.

4. Additional information

There were no registered cases during 2017 and 2018. Last case of 2016 - Highly pathogenic H5N5 - Duck (*Anas crecca*) was found at Skadar Lake. In 2018 as part of active monitoring of livestock 2,000 samples were tested. In the same year in active monitoring of migratory water birds, 300 samples were tested.

3.4. Description of Monitoring/Surveillance/Control programmes system* Rabies

1. Monitoring/Surveillance/Control programmes system

In order to prevent rabies outbreaks, dogs and cats are vaccinated with an inactivated vaccine to maintain active rabies virus immunity, as well as diagnostic and other measures to detect rabies outbreaks in a timely manner.

Carrier: veterinary clinics, DVL, Hunting Federation of Montenegro - hunting organizations, veterinary inspection.

Coverage: 50 animals in case of vaccination in case of rabies on infected and endangered area according to the decision of the official veterinarian.

In order to control rabies in foxes and other wild animals, oral vaccination of foxes and other wild animals is conducted and monitoring of the success of oral vaccination of foxes and other wild animals.

Carriers: Veterinary Clinics, DVL, Hunting Association of Montenegro - Hunting Organizations, National Parks of Montenegro, Veterinary Inspection.

Implementation period: twice a year - spring and autumn.

2. Measures in place^(b)

Vaccination is carried out by distribution from vaccine aircraft (baits) throughout the territory of Montenegro, except in urban areas, in water and wetlands and in military zones.

Following oral vaccination, the success of the oral vaccination is monitored, as well as the presence / absence of rabies virus antigen in the fox population (active monitoring of wild animal rabies). For every 100 km² of territory (vaccine distribution area), four healthy foxes must be caught and tested. The foxhunting is performed by hunters from different parts of the hunting areas to allow for spatial variation, in accordance with the sampling plan of the AFSVPA, which is submitted to the Hunting Federation.

Hunted foxes are sent to veterinary clinics, who enter the data in the test guide for the killed foxes for the purpose of evaluating the success of oral rabies vaccination and submit the specimen with the instruction to the DVL for testing.

The DVL performs on the samples of foxes: assessment of fox age, examines the level of antibodies to rabies virus by ELISA test and the presence of tetracycline biomarkers in teeth / bones. If these findings are positive, the fox is considered to have consumed the bait or to be vaccinated. At the same time, the DVL also tests the same fox samples for the presence / absence of FAT rabies antigen.

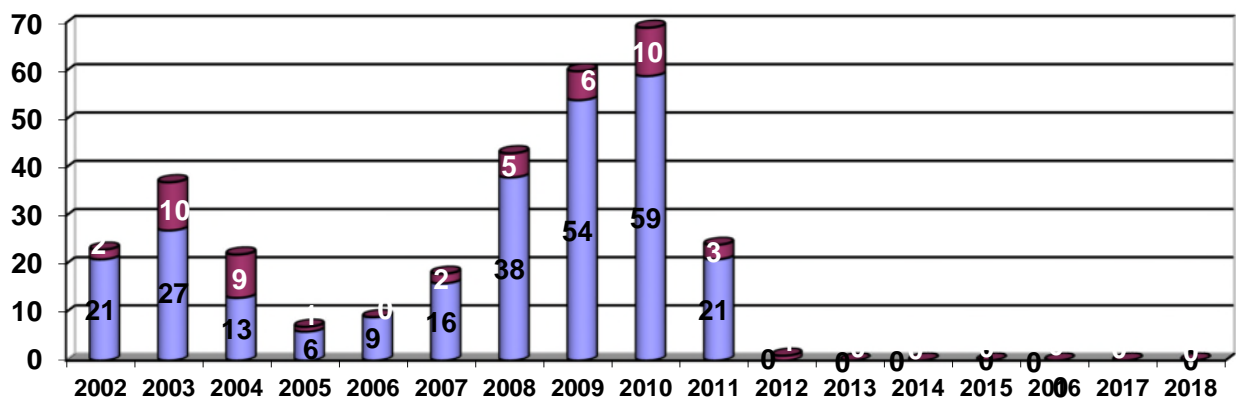
3. Notification system in place to the national competent authority^(c)

DVL submits to the AFSVPA a report on received samples of foxes killed for the purpose of assessing fox age, rabies virus antibody level, presence of tetracycline biomarkers in teeth / bones and presence / absence of rabies virus antigens, with results of electronic and in writing.

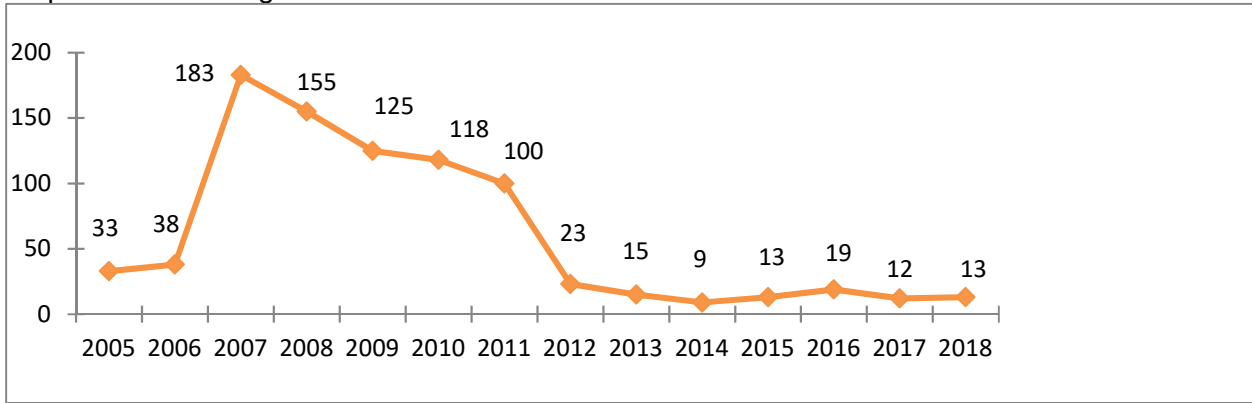
Veterinary clinics are obliged to submit reports to the AFSVPA on the samples of foxes taken, with copies of the Instructions for submission of samples to the DVL, not later than the 10th of the month for the measures taken in the previous month.

4. Additional information

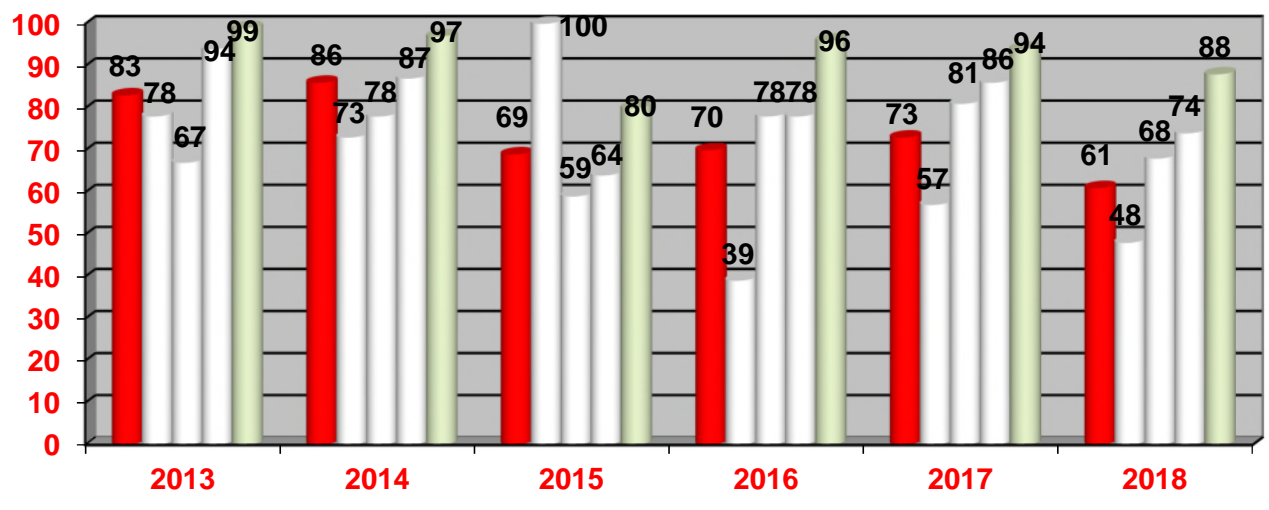
The number of positive cases in last 16 years is given in graph bellow. Since 2013 there were no positive cases in domestic (presented in red) nor wild animals (in blue).



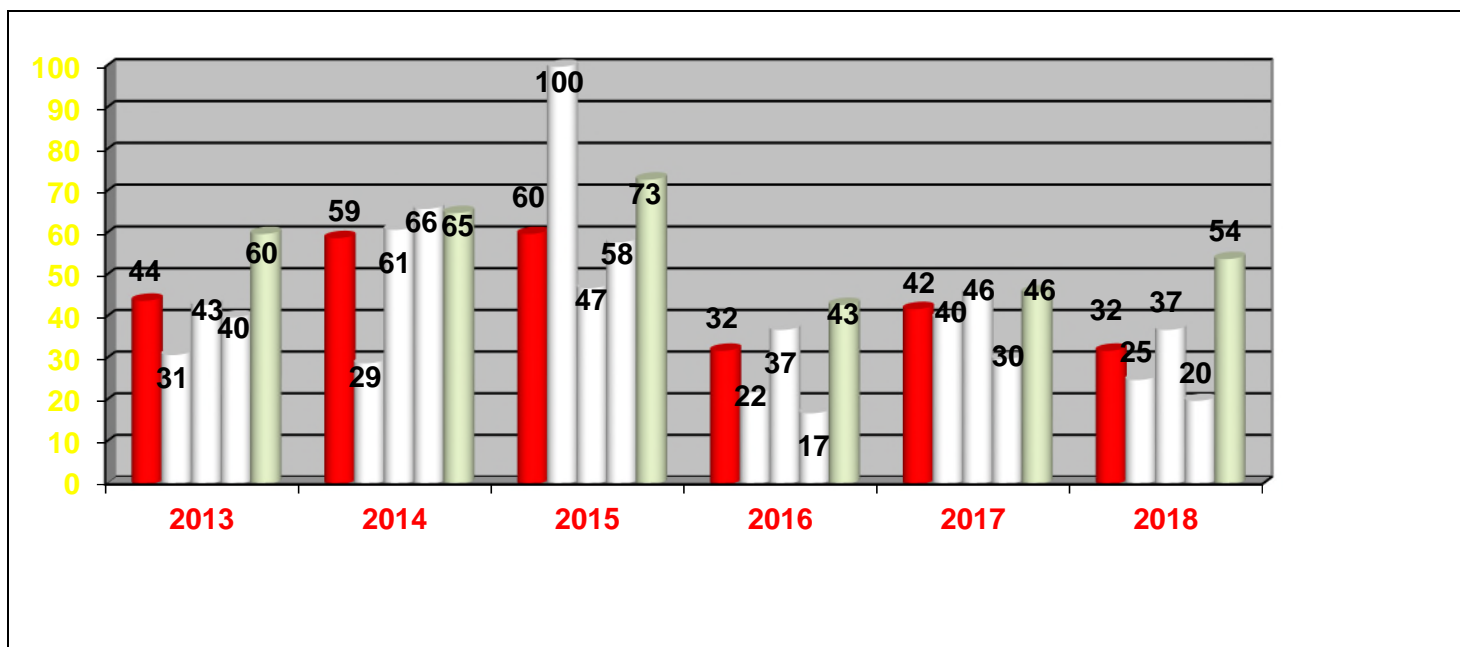
As part of active monitoring, 325 hunted foxes were tested and all were found TFA negative. Number of suspected cases is given in table below.



Graph below shows an examination of the success of oral fox vaccination using TC biomarker assay. The columns given are in the following order. Total foxes/ up to 1 year of age/1-2 years of age/2-3 years of age/ above 3 years of age



Graph below shows examination of the success of oral fox vaccination trough detecting the presence of specific antibodies. The columns given are in the following order. Total foxes/ up to 1 year of age/1-2 years of age/2-3 years of age/ above 3 years of age



3.5. Description of Monitoring/Surveillance/Control programmes system* Q Fever

1. Monitoring/Surveillance/Control programmes system

Q fever tests are performed to detect the source of post-epidemic disease in humans and persons professionally exposed to the infection, when epizootologically justified, as well as for any miscarriage in cattle, sheep and goats.

In addition to the abortion animal, the veterinarian also takes blood samples from an animal suspected to be the source of the epidemic in humans, that is, at the discretion of the official veterinarian, and submits them to the DVL for Q fever testing.

2. Measures in place^(b)

3. Notification system in place to the national competent authority^(c)

4. Additional information

3.6. Description of Monitoring/Surveillance/Control programmes system* Salmonella

1. Monitoring/Surveillance/Control programmes system

In order to detect and control the occurrence of domestic poultry salmonellosis in a timely manner and to prevent the occurrence of foodborne diseases in humans, systematic monitoring of the presence of salmonellosis agents in domestic poultry flocks is carried out.

2. Measures in place^(b)

Systematic monitoring is carried out by taking samples from domestic poultry whose products are used for public consumption from establishments registered by the AFSVPPA. Veterinary Inspection / Authorized veterinarians take samples of faeces and blood and submit to laboratories for bacteriological or serological testing. Samples are taken from establishments for the production of meat and eggs.

3. Notification system in place to the national competent authority^(c)

The frequency of sampling, the type and number of samples is determined by AFSVPA.

4. Additional information

4. Food-borne Outbreaks

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

The acceptability of food or the suitability of food for public consumption is based on the control of microbiological criteria defining the acceptability of food, batch of food or food production process in relation to the absence, presence or number of micro-organisms and / or the amount of their toxins / metabolites above which food is considered unsafe that is, unsuitable for human consumption. Pathogenic bacteria in food (Salmonella, E.coli, Staphilococcus, etc.) are the most common causes of foodborne diseases. As a preventative measure, systematic monitoring and sampling of food is carried out at all stages of food production, processing and distribution. In this way, effective controls are established in accordance with the risk analysis, verifying the compliance of food placed on the market with the prescribed microbiological criteria and determining the degree and effectiveness of the implementation of good hygiene practices and the implementation of procedures established on HACCP principles by food business operators.

Implementing period: Throughout the year

During the marketing phase, it is necessary to monitor the compliance of the food with the microbiological criteria of food safety, during the shelf life of the food under specified conditions of distribution, storage and use. Monitoring of compliance of food with microbiological food safety criteria will be carried out by systematic continuous sampling, by random selection method in retail establishments.

In order to check the implementation of the prescribed hygiene requirements by food business operators during food production or during the handling, processing and processing of food, systematic continuous sampling of food processing facilities during and / or at the end of the production process is carried out by a random selection method.

Continuous, planned and systematic sampling of products of animal origin placed on the market will prevent the presence of *Listeria monocytogenes*.

Samples are taken by the method of random selection of products suitable for the growth of this bacterium: cold or hot smoked or marinated fish, soft and semi-hard cheeses, other than fresh cheeses and packaged, thermally treated meat products. Effective controls are established in accordance with the risk analysis and the conformity of products of animal origin placed on the market.

f the types of outbreaks covered by the reporting

IPH reports on infectious diseases subject to mandatory reporting under the Law on Protection of Population from Infectious Diseases ("Official Gazette of Montenegro", No. 012/18 of 23 February 2018), registered and reported by territorially competent municipal epidemiological services and IPH.

3. National evaluation of the reported outbreaks in the country^(a)

In recent years, the number of people affected by food poisoning has decreased compared to a decade ago. This can be explained by the existence of better laboratory diagnostics, more accurate identification of the causative agents of the disease.

Year	Number of cases	Incidence / 100 000
2008.	426	65,9
2009.	130	20,0
2010.	80	12,4
2011.	104	16,8
2012.	119	19,2
2013.	85	13,7
2014.	29	4,7
2015.	27	4,4
2016.	27	4,4
2017.	11	1,8

4. Descriptions of single outbreaks of special interest

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5. Control measures or other actions taken to improve the situation

The number of reported cases of infectious diseases is significantly influenced by several factors:

- actual epidemiological situation,
- the eventual occurrence of more serious infectious diseases with more patients,
- the development of the health service and the habit of using laboratory diagnostics to confirm the diagnoses,
- keeping the health department up-to-date with regard to the records and reporting of infectious diseases,
- health education of the population;
- the number of infectious diseases that are required to be reported.

The food borne diseases is present in almost all ages, with the highest number of patients registered in the age group of 10-14 years. The disease is recorded year-round with a peak in September.

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

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7. Additional information

Last cases of Listeriosis were detected in 2015 (two patients)

Number of cases of Salmonellosis decreased in last decade but remains steady in recent year with the prevalence ranging from 18,2 to 18,4. The most common serotypes are given in the table below

Serotype	%
Salmonella enteritidis	83,6
Salmonella grupe B	5,5
Salmonella typhi murium	3,0
Salmonella grupe C	2,5

(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.