European Food Safety Authority

ZOONOSES MONITORING

Serbia

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 2016

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 Serbia during the year 2016.

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.

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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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1 ANIMAL POPULATIONS

The relevance of the findings on zoonoses and zoonotic agents has to be related to the size and nature of the animal population in the country

1.1 Populations

1.1.1 Information on susceptible animal population

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Sourse of data on animal population is Statistical Office of the Republic of Serbia

2 DISEASE STATUS

2.1 TUBERCULOSIS, MYCOBACTERIAL DISEASES

2.1.1 Mycobacterium in animals

2.1.1.1 Mycobacterium tuberculosis complex (MTC) in animal - Cattle (bovine animals) - animal sample

Status as officially free of bovine tuberculosis during the reporting year

The entire country free

Serbia is not recognised as country officially tuberculosis free according to Directive 64/432/EEC

Monitoring system

Sampling strategy

With the purpose of early detection of tuberculosis and determining the status of a farm a free from tuberculosis, diagnostic tests of all bovine animals older than 6 weeks in performed by application of intradermal tuberculin tests.Tuberculin skin test is performed by authorised veterinary organisations. Skin fold thickness on each spot of application is measured again 72 hours (± 4 hours) after application, and measured value is registered in the records. All slaughtered bovine animals and pigs will be tested for presence of post-mortem lesions typical for tuberculosis. In case during the inspection at a slaughterhouse changes on internal organs (lungs, lymph nodes, bones, etc.) typical for tuberculosis are noticed, samples taken from slaughtered animals are to be delivered to authorized laboratory for tuberculosis for further tests. Slaughterhouse prepares separate report on every determined case of tuberculosis in bovine animals and pigs and notifies the veterinary inspector on the place of origin of infected animal. With the purpose of determining the greatest possible number of infected animals in the herd, epidemiological unit or area, apart from tuberculin tests, gamma-interferon test can also be used in the manner prescribed in the last edition of OIE Manual of Standards for Diagnostic Tests and Vaccines.

Frequency of the sampling

Bovine animals are subject to diagnostic tests one a year. Bovine animals are tested tuberculosis whereas period since previous test must not be less than 6 and more than 12 months.

Case definition

Accordind the Rolebooklaying down establishing measures for early detection, diagnostics, prevention of spread, control and eradication of infective disease bovine tuberculosis, methods of their enforcement, including method for establishing status of holding free of bovine tuberculosis("Official Gazette RS", number 51/09) Confirmed case of bovine tuberculosis is confirmation ofdisease, if one of the following conditions is met: 1) diagnostic method of intra-dermal tuberculin application had established positive reaction; 2) laboratory testing of secretions, excretions or tissues establishes existence of bovine tuberculosis cause (Mycobacterium bovis or other micro-bacteria species belonging to M. Tuberculosis complex); 3) pathoanatomical examination establishes pathomorphological changes specific for tuberculosis, and laboratory testing establishes existence of bovine tuberculosis cause (Mycobacterium bovis or other micro-bacteria species belonging to M. Tuberculosis complex); 4) veterinary-hygiene examination on slaughtering establishes pathomorphological changes specific for tuberculosis, and laboratory testing establishes existence of bovine tuberculosis cause (Mycobacterium bovis or other micro-bacteria species belonging to M. Tuberculosis complex).

Vaccination policy

Cattle shall not be vaccinated for tuberculosis.

Control program/mechanisms

The control program/strategies in place

Cattle where tuberculosis was confirmed shall not be treated.Animals with confirmed tuberculosis are dispatched as soon as possible and within 30 days at the latest to a slaughterhouse by the competent veterinary inspector. In case the animals cannot be dispatched to slaughter, inspector may approve their killing in welfare manner.

Measures in case of the positive findings or single cases

Animals with confirmed tuberculosis are dispatched as soon as possible and within 30 days at the latest to a slaughterhouse by the competent veterinary inspector. In case the animals cannot be dispatched to slaughter, inspector may approve their killing in welfare manner.

2.2 BRUCELLOSIS

2.2.1 Brucella in animals

2.2.1.1 B. abortus in animal - Cattle (bovine animals) - animal sample

Status as officially free of bovine brucellosis during the reporting year

The entire country free

Serbia is not recognized as country officially bovine brucellosis free according to Directive 64/432/EEC.

Monitoring system

Sampling strategy

Diagnostic tests of bovine animals, except fattening bulls, are performed in all animals older than 12 month. Competent scientific and specialist veterinary institutes perform diagnostic tests of properly labelled samples of blood serum of bovine animals by application of fast methods (fast serum agglutination, that is, Rose Bengal test or fluorescence polarization) and in case of positive test result, by application of confirmation serological method (indirect ELISA). In case of positive test results, sampling is repeated with the presence of epidemiologist and veterinary inspector and confirmation tests for presence of specific antibodies against Brucella by serological method (competitive ELISA or RVK) are performed at competent veterinary institute.Bovine animals with confirmed infection by brucellosis are immediately, or within 7 days at the latest, slaughtered in welfare manner, with the presence of veterinary inspector, and the carcases are disposed in proper manner. Upon implementation of measures state above, repeated tests shall be performed in all seronegative bovine animals two times at an interval of 30 days, to determine the spread of the disease.

Frequency of the sampling

Diagnostic tests of bovine animals, except fattening bulls, are performed in all animals older than 12 month.

Type of specimen taken

The identification of the bovine Brucella by modified acid-fast or immunospecific staining of organisms of Brucella morphology in abortion material, vaginal discharge or milk provides a credibleevidence of brucellosis, especially in conjunction with immunological testing. The methods ofpolymerase chain reaction may be used as additional diagnostic tool for identifying the virus. When possible, Brucella spp. shall be isolated by application of simple or selective media; bycultivating the discharge from uterus, aborted fetuses, secrete from udder or tissues such as lymphatic glands and reproductive male and female organs. After isolation, the species and biovar should be identified by phagelysis, oxidative metabolism tests, cultural, biochemical and serological criteria. Polymerase chain reaction may serve as an additional method and as biotype method based on genomic sequences. The techniques and media used, their standardization and the interpretation of results must conform to that specified in the OIE Manual of Standards for Diagnostic Tests and Vaccines for Terrestrial Animals.

Vaccination policy

Bovine animals shall not be vaccinated against brucellosis.

Measures in case of the positive findings or single cases

In case brucellosis is suspected, the veterinary inspector shall immediately order taking of blood samples and diagnostic testing in order to confirm or rule out the presence of brucellosis in the herd. In case the contagious disease of bovine brucellosis is suspected the following measures shall be taken: 1. The herd shall be put under surveillance; 2. A ban shall be placed on introducing new animals into the herd or placing animals from the herd on the market, with the exception of situations where animals must be sent for emergency slaughter; 3. Separation and isolation within the herd, of animals suspected to have brucellosis; 4. A ban shall be placed on insemination and natural mating of animals suspected to have brucellosis; 5. A ban shall be placed on using the milk from cows suspected to have brucellosis; Measures provided above shall be applied until officialconfirmation of bovine brucellosis is ruled out in a herd. When bovine brucellosis has been officially confirmed in a herd, the veterinary inspector, in addition to the above measures, orders the following measures for prevention ofspreading and control of disease on the infected holding: 1. Separation and isolation of animals officially confirmed to have brucellosis and animals those were in contact with infected animals; 2. Killing of infected animals and harmless disposal of carcasses under the supervision of theveterinary inspector within 7 days; 3. Immediate diagnostic testing for brucellosis of all susceptible animals on the holding; 4. Prohibition of use of milk from all diseased cows from the infected herd; 5. Urgent harmless disposal and destruction of aborted fetuses, stillborn calves, and calves died of Brucellosis after calving, as well as placentas, unless they are intended for diagnosticexamination; 6. Disinfection and harmless disposal of hay, manure and upper layers of ground, as well as otherobjects that have come in contact with the infected animal, placentas or other infected material; 7. Packing or disinfection and disposal of manure from the infected objects at a site inaccessible toanimals. Disinfection of liquid feces of infected animals and prohibition of using manure as afertilizer for at least three weeks.

2.2.1.2 B. melitensis in animal - Sheep and goats - animal sample

Status as officially free of ovine brucellosis during the reporting year

The entire country free

Serbia is not recognized as country officially brucelosis free according to Directive 64/432/EEC.

Monitoring system

Sampling strategy

Diagnostic tests of sheep and goats are performed in all animals older than six months. Competent scientific and specialist veterinary institutes perform diagnostic tests of properly labelled samples of blood serum of sheep and goats by application of fast methods (fast serum agglutination, that is, Rose Bengal test or fluorescence polarization) and in case of positive test result, by application of confirmation serological method (indirect ELISA). Samples taken from rams are specially labelled. All stud rams are tested for infection by B. ovis (Epididymitis). In case of positive test results, sampling is repeated with the presence of epidemiologist and veterinary inspector and confirmation tests for presence of specific antibodies against Brucella by serological method (competitive ELISA or RVK) are performed at competent veterinary institute. Sheep and goats with confirmed infection by brucellosis are immediately, or within 7 days at the latest, slaughtered humanely, with the presence of veterinary inspector, and the carcases are disposed in proper manner. Upon implementation of measures stated in the paragraph 7 of this section, repeated tests shall be performed in all seronegativesheep and goats two times at an interval of 30 days, to determine the spread of the disease.

Frequency of the sampling

Sheep and goats are subject to diagnostic tests one a year. Sheep and goats are tested for brucellosis, whereas period since previous test must not be less than 6 and more than 12 months.

Measures in case of the positive findings or single cases

When brucellosis in sheep and goat has been officially confirmed in a herd, the veterinary inspectororders the following measures for prevention ofspreading and control of disease on the infected holding: 1. Separation and isolation of animals officially confirmed to have brucellosis and animals those were in contact with infected animals; 2. Killing of infected animals and harmless disposal of carcasses under the supervision of the veterinary inspector; 3. Slaughter or killing all seronegative animals in the positive herd. 4. Immediate diagnostic testing for brucellosis of all susceptible animals on the holding; 5. Disinfection and harmless disposal of hay, manure and upper layers of ground, as well as otherobjects that have come in contact with the infected animal, placentas or other infected material; 6. Packing or disinfection and disposal of manure from the infected objects at a site inaccessible toanimals.

3 INFORMATION ON SPECIFIC ZOONOSES AND ZOONOTIC AGENTS

Zoonoses are diseases or infections, which are naturally transmissible directly or indirectly between animals and humans. Foodstuffs serve often as vehicles of zoonotic infections. Zoonotic agents cover viruses, bacteria, fungi, parasites or other biological entities that are likely to cause zoonoses.

3.1 RABIES

3.1.1 General evaluation of the national situation

3.1.1.1 Lyssavirus (rabies) - general evaluation

History of the disease and/or infection in the country

1 The number of rabies cases in Serbia has been relatively high and was increasing at the beginning of 21st century. In period 2000 – 2009 approximately 160 to 200 cases per year was notified in the country, registered via passive surveillance. Mandatory notification and investigation of every rabies suspected animal, wild or domestic, is introduce in former SFRJ legislation and is presently implemented with no interruption. Serbia has started to adopt European standards in veterinary policies and legislation in 2005 when the Serbian Parliament adopted the Law on Veterinary Matters (Official Gazette of RS No. 91/2005). This law was further amended ("Official Gazette of RS" No 91/05, 30/2010, 93/2012). In accordance with the Veterinary Law, notification of animal disease including rabies is compulsory, also permanent identification and registration of dogs and issuing of Dog passport is mandatory. The Minister/Ministry of Agriculture for each year has adopted an annual Rulebook on establishing Program of Animal Health Protection Measures. In line with the Program of Measures of 2010, the oral rabies vaccination of foxes and other wild carnivores has been initiated for the first time in 2010. In every consecutive year, legal base for ORV was ensured in the Program of measures as well as resources for its implementation and monitoring of its effectiveness. At the same year, the Strategy and operational multi annual action plan for eradication, control and monitoring of rabies was developed and officially adopted. The Strategy is based on the Serbian veterinary legislation, which is harmonised with the EU Acquis and is in compliance with the recommendations of the OIE Terrestrial Animal Health Code, OIE Manual of Standards for Diagnostic Tests and Vaccines for Terrestrial Animals. Thus in 2010, Veterinary Directorate has started multiannual project of oral rabies vaccination of wild carnivore animals (e.g. foxes), as support of long-term program of eradication of rabies in Serbia, co-funded by the EU. Fox populations act as a reservoir for rabies and presents a permanent risk for transmission to humans, either directly or via domestic carnivores. Results from the oral rabies vaccination campaigns are very positive as they led to a dramatic and non-interrupted decrease of the disease incidence. During the recent years the number of the detected positive cases remained under five cases . In the calendar years 2013 only 5, in 2014 only 3, in 2015 also 3, in 2016 only 4 positive cases have been detected in wild foxes for the whole territory of the country. Oral rabies vaccine Lysvulpen CZ and Fuchsoral DE are uesd in Serbia. The 14th oral rabies vaccination campaign is finalised in May 2017, and implementation of the ORV program is to continue till achievement of rabies free status of the country.

National evaluation of the recent situation, the trends and sources of infection

2 From 2011 , after the detection of several rabies cases in sub-urban area of Belgrade city, the number of vaccine baits is increased to 30 baits/km² in this particular territory of 213 km², via helicopter.

Recent actions taken to control the zoonoses

4 In order to eradicate rabies from Serbia and to protect public health, regulatory measures on domestic animals are in place. Regular preventive vaccination of dogs and cats is mandatory annually. Oral vaccination of foxes is performed twice per year, every spring and autumn, all over the country territory, since autumn 2010.

3.1.2 Lyssavirus (rabies) in animals

3.1.2.1 Lyssavirus (rabies) in animal - All animals - wild - animal sample

Monitoring system

Sampling strategy

1 Passive surveillance of dead foxes and all susceptible species (suspect animals as well as road kills) in the whole territory of the country and active monitoring to control the effectiveness of oral vaccinationin the vaccinated area.

Frequency of the sampling

2 In the dedicated period of the year in a definite number of shot wild animals/foxes and jackals: sampling period starts 21 day after the completion of each vaccination campaign and the minimum number of foxes is sampled is 4 animals/100 km2 per year

Type of specimen taken

3 Whole fox carcasses are submitted to the veterinary laboratory by hunters in the framework of Plan of monitoring of ORV. Transversal tooth section is performed to detect presence of tetracycline, and ELISA test is carried out to detect antibodies from the samples.

Methods of sampling (description of sampling techniques)

4 Whole carcasses of healthy shot foxes, suspect foxes or suspect animals of other species are submitted to the laboratory. Brain tissue sample is taken in the laboratory from all categories. Mandible and other sample is taken in the laboratory from foxes/jackals shot in the framework of monitoring of effectiveness of ORV.

Vaccination policy

7 The whole territory of Serbia excluding the urban settlements, main roads and water areas are designated for ORV, app. 73 000 km². Two vaccination campaigns per year (spring and autumn)

Control program/mechanisms

The control program/strategies in place

9 Rulebook on establishing the measures for early detection, diagnostics, spreading prevention, suppression, and eradication of the Rabies, and the manner of their implementation (Official Gazette RS No78/09)

Recent actions taken to control the zoonoses

10 Enhancing of number of vaccine baits per km² in sub-urban area of Belgrade in 2012 ORV campaign

Measures in case of the positive findings or single cases

12 Tracing human contacts, animal contacts. Obligatory vaccination of dogs and cats, and farm animals upon the decision of the veterinary authority.

Notification system in place

13 Rabies is a notifiable disease in Serbia according to the Rulebook on the List of Particularly Contagious Animal Diseases and the List of Notifiable Animal Diseases, as well as the notification procedure (Official Gazette of RS, 49/2006), and the Rulebook on establishing the measures for early detection, diagnostics, spreading prevention, suppression, and eradication of the Rabies, and the manner of their implementation (Official Gazette RS No78/09)

Results of the investigation including the origin of the positive animals

14 There was anly 4 rabies cases in wild foxes in 2016.

Results of the investigation

Investigations of the human contacts with positive cases

16 All positive cases shall be reported to the human health service according to national legislation. Decision about immunization of a person in contact with a rabies positive animal is the competence of the human health authorities.

3.1.2.2 Lyssavirus (rabies) in animal - Dogs - animal sample

Monitoring system

Sampling strategy

1 In case of dogs and other domestic animals, only suspect animals are sampled. In cases of suspicion of rabies, epizootiological investigation and clinical examination of the animal shall be performed in order to establish whether the suspicion is justified. If it is established that the suspicion was justified, head or carcass of the animal shall be sent to an accredited laboratory for examination. When clinically healthy dogs or cats, vaccinated against rabies, injure people, these dogs or cats must be put immediately under control for ten days. During the control, three clinical examinations shall be carried out, on the first, fifth, and tenth day. The animal is considered infected with rabies if laboratory examination with the fluorescence method or the biological experiment on white mice confirms rabies. The biological experiment on white mice is carried out in the following cases: 1) If a human came into contact with the animal under suspicion of rabies infection, and the results obtained with fluorescence method are negative or suspicious, 2) When it is first confirmation of rabies in one animal species on a territory of a municipality, 3) In other justified cases.

Frequency of the sampling

2 Passive surveillance – Sampling and investigations only in case of suspicion.

Type of specimen taken

3 Whole carcass / head / brain tissue.

Methods of sampling (description of sampling techniques)

4 Whole carcasses of suspect dogs or other species are submitted to the laboratory. Brain tissue sample is taken in the laboratory.

Case definition

5 According Rulebook on establishing the measures for early detection, diagnostics, spreading prevention, suppression, and eradication of the rabies infectious disease, and the manner of their implementation (Official Gazette of the Republic of Serbia no.78/09) case defininition is define as: - Case of rabies is a case when rabies is established and confirmed in a virusologic examination performed by a competent accredited laboratory. - Suspected case of rabies is a case when the results of clinical examination and epizootiological investigation indicate that there is a danger of rabies, up to obtaining a confirmation from a competent accredited laboratory

Vaccination policy

7 Dogs and cats older than three months must be vaccinated once a year by inactivated vaccine against rabies, in accordance with manufacturer's instructions. Vaccination of dogs younger than three months may be performed provided there are justified reasons for such procedure, also in accordance with the manufacturer's instructions. Oral vaccination of foxes and other wild carnivores is performed twice a year, in spring and autumn, within the project of rabies eradication supported by European Union. Vaccines are distributed via plains or helicopters, or manually in some areas where aerial vaccination cannot be completed.

Control program/mechanisms

The control program/strategies in place

9 Rulebook on establishing the measures for early detection, diagnostics, spreading prevention, suppression, and eradication of the Rabies, and the manner of their implementation (Official Gazette RS No78/09)

Notification system in place

13 Rabies is a notifiable disease in Serbia according to the Rulebook on the List of Particularly Contagious Animal Diseases and the List of Notifiable Animal Diseases, as well as the notification procedure (Official Gazette of RS, 49/2006), and the Rulebook on establishing the measures for early detection, diagnostics, spreading prevention, suppression, and eradication of the Rabies, and the manner of their implementation (Official Gazette RS No78/09)

Results of the investigation including the origin of the positive animals

14 There was 4 rabies cases in 2016.

Results of the investigation

Investigations of the human contacts with positive cases

16 All positive cases shall be reported to the human health service according to national legislation. Decision about immunization of a person in contact with a rabies positive animal is the competence of the human health authorities

4 FOODBORNE OUTBREAKS

Foodborne outbreaks are incidences of two or more human cases of the same disease or infection where the cases are linked or are probably linked to the same food source. Situation, in which the observed human cases exceed the expected number of cases and where a same food source is suspected, is also indicative of a foodborne outbreak.

4.1 Outbreaks

4.1.1 Foodborne outbreaks

System in place for identification, epidemological investigations and reporting of foodborne outbreaks

Reporting of foodborne outbreaks in Serbia is regulated by the Law on Protection of the Population from Communicable Diseases (OG RS No.125/04) and the Rulebook on reporting of Communicable Diseases or other cases laid down by the Law on Protection of the Population from Communicable Diseases (OG RS No. 98/05). According to the above-mentioned regulations each foodborne outbreak (FBO) is mandatorily notified and reported to the Center for Prevention and Control of Communicable Diseases of the Institute of Public Health of Serbia by Public Health Institute at district level, immediately when the outbreak occurs and is identified. FBOs are investigated at district level by epidemiology team of district public health institute with microbiological support. They also cooperate with and notify sanitary inspectors. This approach also enables environmental analysis (inspection of food facilities) and taking samples for laboratory investigation.

ANIMAL POPULATION TABLES

Table Susceptible animal population

Animal species	Category of animals	Population	
		holding	animal
Cattle (bovine animals)	Cattle (bovine animals)	133,353	893,000
Gallus gallus (fowl)	Gallus gallus (fowl)	380,509	16,242,000
Pigs	Pigs	90,187	3,021,000
Sheep and goats	Sheep and goats	81,314	1,865,000

DISEASE STATUS TABLES

DISEASE STATUS TABLES

PREVALENCE TABLES

Table BRUCELLA in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
Not Available	Cattle (bovine animals) - Farm - Not Available - Not Available - Surveillance - Official sampling - Census	animal	546838	7	Brucella abortus	7
	Sheep and goats - Farm - Not Available - Not Available - Surveillance - Official sampling - Census	animal	1112134	50	Brucella melitensis	50

Table LYSSAVIRUS in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
Not Available	Cats - Veterinary clinics - Not Available - Not Available - Clinical investigations - Official sampling - Suspect sampling	animal	41	0	Lyssavirus	0
	Deer - wild - Natural habitat - Not Available - Not Available - Clinical investigations - Official sampling - Suspect sampling	animal	1	0	Lyssavirus	0
	Dogs - Veterinary clinics - Not Available - Not Available - Clinical investigations - Official sampling - Suspect sampling	animal	36	0	Lyssavirus	0
	Foxes - Natural habitat - Not Available - Not Available - Clinical investigations - Official sampling - Suspect sampling	animal	132	4	Lyssavirus	4
	Other carnivores - wild - Natural habitat - Not Available - Not Available - Clinical investigations - Official sampling - Suspect sampling	animal	16	0	Lyssavirus	0
	Wolves - Natural habitat - Not Available - Not Available - Clinical investigations - Official sampling - Suspect sampling	animal	1	0	Lyssavirus	0

Table MYCOBACTERIUM in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
Not Available	Cattle (bovine animals) - Farm - Not Available - Not Available - Surveillance - Official sampling - Census	animal	894565	24	Mycobacterium bovis	24

FOODBORNE OUTBREAKS TABLES

Foodborne Outbreaks: summarized data

		Outbreak strenght	Strong				Weak			
Causative agent	Food vehicle		N outbreaks	N human cases	N hospitalized	N deaths	N outbreaks	N human cases	N hospitalized	N deaths
Bacillus cereus	Unknown						1	15	15	0
Brucella melitensis	Mixed food						1	15	2	0
Norovirus	Unknown						2	99	0	0
Salmonella Enteritidis	Broiler meat (Gallus gallus) and products thereof						1	14	12	0
	Mixed food						31	168	68	0
	Unknown						3	11	0	0
Trichinella	Mixed food						1	25	10	0
	Meat and meat products						1	3	0	0
Trichinella spiralis	Pig meat and products thereof		2	18	8	0				
	Meat and meat products		1	114	19	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
Trichinella spiralis	unk	N_A	General	Meat and meat products	N_A	Descriptive epidemiological evidence	Multiple places of exposure in one country	unk	Not Available	NOT AVAILABLE	N_A	1	114	19	0
			Household / domestic kitchen	Pig meat and products thereof	N_A	Descriptive epidemiological evidence	Household	unk	Not Available	NOT AVAILABLE	N_A	1	8	4	0
							Multiple places of exposure in one country	unk	Not Available	NOT AVAILABLE	N_A	1	10	4	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
Bacillus cereus	unk	N_A	General	Unknown	N_A	Descriptive epidemiological evidence	Residential institution (nursing home or prison or boarding school)	unk	Not Available	NOT AVAILABLE	N_A	1	15	15	0
Brucella melitensis	unk	N_A	Household / domestic kitchen	Mixed food	N_A	Descriptive epidemiological evidence	Household	unk	Not Available	NOT AVAILABLE	N_A	1	15	2	0
Norovirus	unk	N_A	General	Unknown	N_A	Descriptive epidemiological evidence	Not Available	unk	Not Available	NOT AVAILABLE	N_A	2	99	0	0
Salmonella Enteritidis	unk	N_A	General	Broiler meat (Gallus gallus) and products thereof	N_A	Descriptive epidemiological evidence	Take-away or fast-food outlet	unk	Not Available	NOT AVAILABLE	N_A	1	14	12	0
				Mixed food	N_A	Descriptive epidemiological evidence	Hospital or medical care facility	unk	Not Available	NOT AVAILABLE	N_A	1	2	1	0
							Restaurant or Cafe or Pub or Bar or Hotel or Catering service	unk	Not Available	NOT AVAILABLE	N_A	1	30	9	0
							School or kindergarten	unk	Not Available	NOT AVAILABLE	N_A	2	13	4	0
			Household / domestic kitchen	Mixed food	N_A	Descriptive epidemiological evidence	Household	unk	Not Available	NOT AVAILABLE	N_A	27	123	54	0
				Unknown	N_A	Descriptive epidemiological evidence	Household	unk	Not Available	NOT AVAILABLE	N_A	3	11	0	0
Trichinella	unk	N_A	General	Mixed food	N_A	Descriptive epidemiological evidence	Multiple places of exposure in one country	unk	Not Available	NOT AVAILABLE	N_A	1	25	10	0
			Household / domestic kitchen	Meat and meat products	N_A	Descriptive epidemiological evidence	Household	unk	Not Available	NOT AVAILABLE	N_A	1	3	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.

European Food Safety Authority

Latest Transmission set

Table Name	Last submitted dataset transmission date
Animal Population	11-Jul-2017
Food Borne Outbreaks	12-Jul-2017
Prevalence	12-Jul-2017
Text Forms	31-May-2017