ZOONOSES MONITORING

Luxembourg

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 2014

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 Luxembourg during the year 2014.

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 DISEASE STATUS

1.1.1.1 M. bovis in animal - Cattle (bovine animals)

Status as officially free of bovine tuberculosis during the reporting year

The entire country free

by decision 97/76/CE and confirmed by decision 2003/467/CE

Monitoring system

Sampling strategy

systematic inspection post mortem at slaughter

1.2.1.1 B. abortus in animal - Cattle (bovine animals)

Status as officially free of bovine brucellosis during the reporting year

The entire country free

by decision 99/466/CE confirmed by decision 2003/467 CE

Additional information

Regular surveillance by control of bulk tank milk all over the country

2 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.

2.1 E. COLI INFECTIONS

2.1.1 General evaluation of the national situation

2.1.1.1 Verotoxigenic E. coli (VTEC) - general evaluation

History of the disease and/or infection in the country

2.1.2 Escherichia coli, pathogenic in animals

2.1.2.1 Verotoxigenic E. coli (VTEC) in animal - Cattle (bovine animals)

Monitoring system

Sampling strategy

3 ANTIMICROBIAL RESISTANCE INFORMATION ON SPECIFIC ZOONOSES AND ZOONOTIC AGENTS

3.1 SALMONELLOSIS

3.1.1 Salmonella in animals

3.1.1.1 Antimicrobial resistance in Salmonella Cattle (bovine animals)

Sampling strategy used in monitoring

Frequency of the sampling

no specific antimicrobial resistance testing on Salmonella in cattle

3.1.1.2 Antimicrobial resistance in Salmonella Pigs

Sampling strategy used in monitoring

Frequency of the sampling

no specific antimicrobial resistance testing on Salmonella in pigs

3.1.1.3 Antimicrobial resistance in Salmonella Poultry, unspecified

Sampling strategy used in monitoring

Frequency of the sampling

no specific antimicrobial resistance testing on Salmonella in poultry

3.2 CAMPYLOBACTERIOSIS

3.2.1 Campylobacter in animals

3.2.1.1 Antimicrobial resistance in Campylobacter jejuni and coli in Pigs

Sampling strategy used in monitoring

Frequency of the sampling

3.2.1.2 Antimicrobial resistance in Campylobacter jejuni and coli in Poultry, unspecified

Sampling strategy used in monitoring

Frequency of the sampling

no specific antimicrobial resistance testing on Campylobacter in poultry

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

Task Force of foodborne outbreaks under the ministery of health

Description of the types of outbreaks covered by the reporting:

ANIMAL POPULATION TABLES

Table Susceptible animal population

Animal species	Category of animals	Population animal
Cattle (bovine animals)	Cattle (bovine animals) (not specified)	599,602
Gallus gallus (fowl)	Gallus gallus (fowl) - broilers (not specified)	100,000
	Gallus gallus (fowl) - laying hens (not specified)	200,000
Goats	Goats (not specified)	6,480
Sheep	Sheep (not specified)	18,504

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
Luxembourg (Grand-Duché)	Cattle (bovine animals) - Farm (not specified) - Luxembourg - - Surveillance - Official sampling - Not specified	animal	164	11	Brucella	0
		herd/flock	738	11	Brucella	0

Table ECHINOCOCCUS 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
Luxembourg (Grand-Duché)	Foxes - wild - Natural habitat - Luxembourg - - Surveillance - Not applicable - Convenient sampling	animal	12	5	Echinococcus - E. granulosus	0

Table LYSSAVIRUS (RABIES) 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
Luxembourg (Grand-Duché)	Foxes - wild - Natural habitat - Luxembourg - - Surveillance - Not applicable - Convenient sampling	animal	12	0	Lyssavirus (rabies) - Rabies virus (RABV)	0

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Total units tested	Total units positive	Zoonoses	N of units positive
Luxembourg (Grand-Duché)	Compound feedingstuffs for cattle - final product - Farm (not specified) - Luxembourg - feed sample - Surveillance - Official sampling - Selective sampling	batch		NOT AVAILABLE	40	0	Salmonella - S. 1,4,[5],12:i:-	0
							Salmonella - S. Enteritidis	0
							Salmonella - S. Typhimurium	0
							Salmonella - Salmonella spp., unspecified	0
	Compound feedingstuffs for cattle - final product - Retail - Luxembourg - feed sample - Surveillance - Official sampling - Selective sampling	batch		NOT AVAILABLE	1	0	Salmonella - S. 1,4,[5],12:i:-	0
							Salmonella - S. Enteritidis	0
							Salmonella - S. Typhimurium	0
							Salmonella - Salmonella spp., unspecified	0
	Compound feedingstuffs for pigs - final product - Farm (not specified) - Luxembourg - feed sample - Surveillance - Official sampling - Selective sampling	batch		NOT AVAILABLE	25	0	Salmonella - S. 1,4,[5],12:i:-	0
							Salmonella - S. Enteritidis	0
							Salmonella - S. Typhimurium	0
							Salmonella - Salmonella spp., unspecified	0
	Compound feedingstuffs for poultry, laying hens - final product - Farm (not specified) - Luxembourg - feed sample - Surveillance - Official sampling - Selective sampling	batch		NOT AVAILABLE	3	0	Salmonella - S. 1,4,[5],12:i:-	0
							Salmonella - S. Enteritidis	0
							Salmonella - S. Typhimurium	0
							Salmonella - Salmonella spp., unspecified	0
	Compound feedingstuffs for poultry, laying hens - final product - Feed mill - Luxembourg - feed sample - Surveillance - Official sampling - Selective sampling	batch		NOT AVAILABLE	2	0	Salmonella - S. 1,4,[5],12:i:-	0
							Salmonella - S. Enteritidis	0
							Salmonella - S. Typhimurium	0
							Salmonella - Salmonella spp., unspecified	0
	Feed material of cereal grain origin - maize derived - Farm (not specified) - Luxembourg - feed sample - Surveillance - Official sampling - Selective sampling	batch		NOT AVAILABLE	1	0	Salmonella - S. 1,4,[5],12:i:-	0
							Salmonella - S. Enteritidis	0
							Salmonella - S. Typhimurium	0
							Salmonella - Salmonella spp., unspecified	0
	Feed material of oil seed or fruit origin - soya (bean) derived - Farm (not specified) - Luxembourg - feed sample - Surveillance - Official sampling - Selective sampling	batch		NOT AVAILABLE	2	0	Salmonella - S. 1,4,[5],12:i:-	0
							Salmonella - S. Enteritidis	0
							Salmonella - S. Typhimurium	0
							Salmonella - Salmonella spp., unspecified	0
	Feed material of oil seed or fruit origin - soya (bean) derived - Feed mill - Luxembourg - feed sample - Surveillance - Official sampling - Selective sampling	batch		NOT AVAILABLE	1	0	Salmonella - S. 1,4,[5],12:i:-	0
							Salmonella - S. Enteritidis	0
							Salmonella - S. Typhimurium	0
							Salmonella - Salmonella spp., unspecified	0
	Feed material of oil seed or fruit origin - soya (bean) derived - Retail - Luxembourg - feed sample - Surveillance - Official sampling - Selective sampling	batch		NOT AVAILABLE	2	0	Salmonella - S. 1,4,[5],12:i:-	0
							Salmonella - S. Enteritidis	0
							Salmonella - S. Typhimurium	0
							Salmonella - Salmonella spp., unspecified	0

Table TRICHINELLA 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
Luxembourg (Grand-Duché)	Pigs - unspecified - Slaughterhouse - Luxembourg - - Surveillance - Official and industry sampling - Census	animal	1886	0	Trichinella	0
	Pigs - wild - Hunting - Luxembourg - - Surveillance - Official and industry sampling - Census	animal	1302	0	Trichinella	0

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**
Campylobacter - C. jejuni	Broiler meat (Gallus gallus) and products thereof						2	142	0	0
Staphylococcal enterotoxins - Enterotoxin A	Mixed food		2	62	31	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
Staphylococcal enterotoxins - Enterotoxin A	NOT AVAILABLE		General	Mixed food	Pasta salad with pesto	Analytical epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Unknown	Inadequate chilling, Infected food handler	numHospitalised is the number of persons receiving treatment at emergency unit. Number of persons requiring at least one night stay hospitalisation unknown	2	62	31	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
Campylobacter - C. jejuni	NOT AVAILABLE		General	Broiler meat (Gallus gallus) and products thereof	C. jejuni with identical genotype ST-2254 isolated on broiler meat imported from Belgium	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans	Disseminated cases (not specified)	NOT AVAILABLE	Belgium	Cross-contamination, Inadequate heat treatment		2	142	0	0

Table Antimicrobial susceptibility testing of Campylobacter - C. coli in Gallus gallus (fowl) (not specified)

Sampling Stage: Unspecified

Sampling Type: animal sample - organ/tissue

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Luxembourg

	AM substance	Fluoroquinolones - Ciprofloxacin	Macrolides - Erythromycin	Tetracyclines - Oxytetracycline
	ECOFF	**0.5**	**64**	**1**
	Lowest limit	**0.12**	**1**	**0.5**
	Highest limit	**16**	**128**	**64**
	N of tested isolates	**3**	**3**	**3**
MIC	**N of resistant isolates**	**3**	**0**	**3**
<=1			1	
4		1		
8		2	1	
64			1	
>64				3

Table Antimicrobial susceptibility testing of Campylobacter - C. coli in Gallus gallus (fowl) (not specified)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Luxembourg

	AM substance	Fluoroquinolones - Ciprofloxacin	Macrolides - Erythromycin	Tetracyclines - Oxytetracycline
	ECOFF	**0.5**	**64**	**1**
	Lowest limit	**0.12**	**1**	**0.5**
	Highest limit	**16**	**128**	**64**
	N of tested isolates	**10**	**10**	**5**
MIC	**N of resistant isolates**	**8**	**1**	**5**
<=0.12		2		
<=1			8	
4		2		
8		2		
16		4		
64			1	1
>64				4
>128			1	

Table Antimicrobial susceptibility testing of Campylobacter - C. coli in Gallus gallus (fowl) (not specified)

Sampling Stage: Unspecified

Sampling Type: animal sample - caecum

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Luxembourg

	AM substance	Fluoroquinolones - Ciprofloxacin	Macrolides - Erythromycin
	ECOFF	**0.5**	**64**
	Lowest limit	**0.12**	**1**
	Highest limit	**16**	**128**
	N of tested isolates	**37**	**37**
MIC	**N of resistant isolates**	**36**	**9**
<=0.12		1	
<=1			26
4		2	
8		5	
16		22	
>16		7	
32			1
64			1
128			2
>128			7

Table Antimicrobial susceptibility testing of Campylobacter - C. coli in Gallus gallus (fowl) (not specified)

Sampling Stage: Unspecified

Sampling Type: animal sample - faeces

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Luxembourg

	AM substance	Fluoroquinolones - Ciprofloxacin	Macrolides - Erythromycin	Tetracyclines - Oxytetracycline
	ECOFF	**0.5**	**64**	**1**
	Lowest limit	**0.12**	**1**	**0.5**
	Highest limit	**16**	**128**	**64**
	N of tested isolates	**22**	**23**	**2**
MIC	**N of resistant isolates**	**22**	**2**	**2**
<=1			21	
4		3		
8		3		
16		14		1
>16		2		
>64				1
>128			2	

Table Antimicrobial susceptibility testing of Campylobacter - C. jejuni in Gallus gallus (fowl) (not specified)

Sampling Stage: Unspecified

Sampling Type: animal sample - organ/tissue

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Luxembourg

	AM substance	Fluoroquinolones - Ciprofloxacin	Macrolides - Erythromycin	Tetracyclines - Oxytetracycline
	ECOFF	**0.5**	**64**	**1**
	Lowest limit	**0.12**	**1**	**0.5**
	Highest limit	**16**	**128**	**64**
	N of tested isolates	**2**	**2**	**2**
MIC	**N of resistant isolates**	**2**	**1**	**2**
8		1		
16			1	
>16		1		
>64				2
>128			1	

Table Antimicrobial susceptibility testing of Campylobacter - C. jejuni in Gallus gallus (fowl) (not specified)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Luxembourg

	AM substance	Fluoroquinolones - Ciprofloxacin	Macrolides - Erythromycin	Tetracyclines - Oxytetracycline
	ECOFF	**0.5**	**64**	**1**
	Lowest limit	**0.12**	**1**	**0.5**
	Highest limit	**16**	**128**	**64**
	N of tested isolates	**19**	**20**	**5**
MIC	**N of resistant isolates**	**14**	**2**	**4**
<=0.12		5		
<=1			18	
1		1		1
4		1		
8		6		
16		3		
>16		3		
>64				4
>128			2	

Table Antimicrobial susceptibility testing of Campylobacter - C. jejuni in Gallus gallus (fowl) (not specified)

Sampling Stage: Unspecified

Sampling Type: animal sample - caecum

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Luxembourg

	AM substance	Fluoroquinolones - Ciprofloxacin	Macrolides - Erythromycin
	ECOFF	**0.5**	**64**
	Lowest limit	**0.12**	**1**
	Highest limit	**16**	**128**
	N of tested isolates	**3**	**3**
MIC	**N of resistant isolates**	**3**	**0**
<=1			3
8		1	
16		2	

Table Antimicrobial susceptibility testing of Campylobacter - C. jejuni in Gallus gallus (fowl) (not specified)

Sampling Stage: Unspecified

Sampling Type: animal sample - faeces

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Luxembourg

	AM substance	Fluoroquinolones - Ciprofloxacin	Macrolides - Erythromycin	Tetracyclines - Oxytetracycline
	ECOFF	**0.5**	**64**	**1**
	Lowest limit	**0.12**	**1**	**0.5**
	Highest limit	**16**	**128**	**64**
	N of tested isolates	**13**	**13**	**2**
MIC	**N of resistant isolates**	**7**	**0**	**2**
<=0.12		6		
<=1			13	
8		3		
16		2		1
>16		2		
>64				1

Table Antimicrobial susceptibility testing of Campylobacter - C. jejuni in Cattle (bovine animals) (not specified)

Sampling Stage: Unspecified

Sampling Type: animal sample - faeces

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Luxembourg

	AM substance	Fluoroquinolones - Ciprofloxacin	Macrolides - Erythromycin	Tetracyclines - Oxytetracycline
	ECOFF	**0.5**	**64**	**1**
	Lowest limit	**0.12**	**1**	**0.5**
	Highest limit	**16**	**128**	**64**
	N of tested isolates	**15**	**15**	**7**
MIC	**N of resistant isolates**	**6**	**1**	**1**
<=0.12		7		
0.12		1		
0.25		1		
<=0.5				5
0.5				1
<=1			13	
1			1	
4		2		
8		1		
16		3		
>64				1
128			1	