ZOONOSES MONITORING

Switzerland

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

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

IN 2022

PREFACE

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

The report contains information on trends and sources of zoonoses and zoonotic agents in Switzerland during the year 2022.

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

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

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

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

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ANIMAL POPULATION TABLES

Table Susceptible animal population

		Population		
Animal species	**Category of animals**	**holding**	**animal**	**slaughter animal (heads)**
Cattle (bovine animals)	Cattle (bovine animals)	32,581	1,525,270	582,483
Gallus gallus (fowl)	Gallus gallus (fowl) - breeding flocks, unspecified	1,980	308,228	
	Gallus gallus (fowl) - broilers	1,116	7,776,969	87,454,762
	Gallus gallus (fowl) - laying hens	25,900	4,807,885	
Pigs	Pigs	5,467	1,372,772	2,551,970
Small ruminants	Goats	6,559	82,313	44,096
	Sheep	7,969	355,893	230,402
Solipeds, domestic	Solipeds, domestic	19,681	112,184	1,162
Turkeys	Turkeys - fattening flocks	398	80,417	

DISEASE STATUS TABLES

TABLE NAME	REGION	Zoonotic Agent	DISEASE STATUS UNIT	Number of herds with status officially free	Number of infected herds	Total number of herds
Bovine brucellosis in countries and regions that do not receive Community co-financing for eradication programme	SWITZERLAND	Brucella		32,581	0	32,581

TABLE NAME	REGION	Zoonotic Agent	DISEASE STATUS UNIT	Number of herds with status officially free	Number of infected herds	Total number of herds
Ovine or Caprine brucellosis in countries and regions that do not receive Community co-financing for eradication programme	SWITZERLAND	Brucella		14,528	0	14,528

DISEASE STATUS TABLES

TABLE NAME	REGION	Zoonotic Agent	DISEASE STATUS UNIT	Number of herds with status officially free	Number of infected herds	Total number of herds
Bovine tuberculosis in countries and regions that do not receive Community co-financing for eradication programme	SWITZERLAND	Mycobacterium bovis		32,581	0	32,581

PREVALENCE TABLES

Table BRUCELLA:Brucella in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Alpacas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Rose Bengal plate test (RBT)/Buffered Brucella antigen test (BBAT)	animal	2	0	Brucella	0
	Camels - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Rose Bengal plate test (RBT)/Buffered Brucella antigen test (BBAT)	animal	4	0	Brucella	0
	Deer - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Rose Bengal plate test (RBT)/Buffered Brucella antigen test (BBAT)	animal	3	0	Brucella	0
	Llamas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Rose Bengal plate test (RBT)/Buffered Brucella antigen test (BBAT)	animal	4	0	Brucella	0
	Wild boars - farmed - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	2	1	Brucella suis	1
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Rose Bengal plate test (RBT)/Buffered Brucella antigen test (BBAT)	animal	12	0	Brucella	0

Table CAMPYLOBACTER:Campylobacter in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Budgerigars - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Campylobacter	0
	Buffalos - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Campylobacter	0
	Camels - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Campylobacter	0
	Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological special tests	animal	480	13	Campylobacter jejuni	4
							Campylobacter upsaliensis	1
							Campylobacter, unspecified sp.	8
	Cattle (bovine animals) - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological special tests	animal	46	13	Campylobacter coli	1
							Campylobacter fetus	1
							Campylobacter hyointestinalis	2
							Campylobacter jejuni	7
							Campylobacter, unspecified sp.	2
	Crows - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	1	Campylobacter jejuni	1
	Deer - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	1	Campylobacter, unspecified sp.	1
	Deer - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	27	12	Campylobacter hyointestinalis	1
							Campylobacter jejuni	11
	Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological special tests	animal	972	65	Campylobacter coli	1
							Campylobacter jejuni	12
							Campylobacter upsaliensis	9
							Campylobacter, unspecified sp.	43
	Ducks - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Campylobacter	0
	Ferrets - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Campylobacter	0
	Gallus gallus (fowl) - broilers - Slaughterhouse - Switzerland - animal sample - caecum - Monitoring - Official sampling - Objective sampling	N_A	Detection method of microorganisms	herd/flock	800	266	Campylobacter coli	34
							Campylobacter jejuni	204
							Campylobacter, unspecified sp.	28
	Goats - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Campylobacter	0
	Guinea pigs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	8	1	Campylobacter jejuni	1
	Hedgehogs - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Campylobacter	0
	Kangaroos - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Campylobacter	0
	Parrots - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	0	Campylobacter	0
	Pigeons - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	0	Campylobacter	0

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Pigs - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	1	Campylobacter, unspecified sp.	1
	Rabbits - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	9	0	Campylobacter	0
	Reptiles - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Campylobacter	0
	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Campylobacter	0
	Solipeds, domestic - donkeys - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	1	Campylobacter, unspecified sp.	1
	Solipeds, domestic - horses - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	86	1	Campylobacter, unspecified sp.	1
	Turtles - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Campylobacter	0
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	138	13	Campylobacter coli	1
							Campylobacter hyointestinalis	1
							Campylobacter jejuni	11

Table CAMPYLOBACTER:Campylobacter in food

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	Method	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Meat from broilers (Gallus gallus) - carcase - chilled - Slaughterhouse - Switzerland - food sample - neck skin - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	single (food/feed)	1	Gram	N_A	ISO 10272-2:2017 Campylobacter	235	76	Campylobacter coli	6
									Campylobacter jejuni	70
			10	Gram	N_A	ISO 10272-2:2017 Campylobacter	260	70	Campylobacter, unspecified sp.	70
			25	Gram	N_A	ISO 10272-2:2017 Campylobacter	395	141	Campylobacter coli	20
									Campylobacter jejuni	67
									Campylobacter, unspecified sp.	54
	Meat from broilers (Gallus gallus) - fresh - skinned - Cutting plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	28	10	Campylobacter, unspecified sp.	10
	Meat from broilers (Gallus gallus) - fresh - skinned - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	15	0	Campylobacter	0
		single (food/feed)	10	Gram	N_A	ISO 10272-1:2017 Campylobacter	5	1	Campylobacter, unspecified sp.	1
	Meat from broilers (Gallus gallus) - fresh - with skin - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	31	0	Campylobacter	0
		single (food/feed)	10	Gram	N_A	ISO 10272-1:2017 Campylobacter	60	9	Campylobacter jejuni	1
									Campylobacter, unspecified sp.	8
	Meat from broilers (Gallus gallus) - fresh - with skin - Slaughterhouse - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	19	12	Campylobacter, unspecified sp.	12
	Meat from broilers (Gallus gallus) - meat preparation - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	7	0	Campylobacter	0
		single (food/feed)	10	Gram	N_A	ISO 10272-1:2017 Campylobacter	31	0	Campylobacter	0
			25	Gram	N_A	ISO 10272-1:2017 Campylobacter	27	3	Campylobacter, unspecified sp.	3
	Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	64	0	Campylobacter	0
	Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - Cutting plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	17	0	Campylobacter	0
	Meat from turkey - fresh - skinned - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	10	Gram	N_A	ISO 10272-1:2017 Campylobacter	3	0	Campylobacter	0

Table COXIELLA: in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Method	total units tested	total units positive	Number of Clinical Affected Herds	Zoonoses	N units positive
SWITZERLAND	Alpacas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	Real-Time PCR (qualitative or quantitative)	1	0		Coxiella	0
	Cattle (bovine animals) - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	Staining	3322	350		Coxiella burnetii	350
	Goats - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	Staining	148	11		Coxiella burnetii	11
	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	Staining	234	18		Coxiella burnetii	18
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	Staining	1	0		Coxiella	0

Table ECHINOCOCCUS:Echinococcus in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Alpine chamois - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Echinococcus	0
	Beavers - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	2	2	Echinococcus multilocularis	2
	Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	5	1	Echinococcus multilocularis	1
	Deer - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	2	0	Echinococcus	0
	Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	39	15	Echinococcus multilocularis	15
	Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	4	3	Echinococcus multilocularis	3
	Kangaroos - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Magnetic stirrer method for pooled sample digestion	animal	1	1	Echinococcus multilocularis	1
	Monkeys - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Echinococcus	0
	Pigs - Slaughterhouse - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	7	4	Echinococcus multilocularis	4
	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	3	0	Echinococcus	0
	Solipeds, domestic - donkeys - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	2	0	Echinococcus	0
	Wild boars - farmed - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	5	5	Echinococcus multilocularis	5
	Wolves - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	5	1	Echinococcus, unspecified sp.	1

Table FRANCISELLA:Francisella in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Beavers - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Francisella	0
	Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	PCR	animal	3	0	Francisella	0
	Hares - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	PCR	animal	14	8	Francisella tularensis	8
	Hares - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	PCR	animal	1	0	Francisella	0
	Monkeys - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	PCR	animal	2	0	Francisella	0
	Rabbits - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Francisella	0

Table LISTERIA:Listeria in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	2	Listeria monocytogenes	2
	Cattle (bovine animals) - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	9	5	Listeria monocytogenes	5
	Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	0	Listeria	0
	Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	4	0	Listeria	0
	Goats - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Histology	animal	5	1	Listeria monocytogenes	1
	Pigs - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	30	0	Listeria	0
	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	21	9	Listeria monocytogenes	9
	Solipeds, domestic - donkeys - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Listeria	0
	Solipeds, domestic - horses - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	4	0	Listeria	0
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	1	Listeria monocytogenes	1

Table LISTERIA:Listeria in food

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	total units tested	total units positive	Method	Zoonoses	N units tested	N units positive
SWITZERLAND	Cheeses, made from unspecified milk or other animal milk - unspecified - Unspecified - Not Available - Not Available - Monitoring - Industry sampling - Selective sampling	single (food/feed)	25	Gram	N_A	1128	4	detection	Listeria monocytogenes	1,128	4
							25	detection	Listeria spp., unspecified	1,128	25

Table LYSSAVIRUS:Lyssavirus in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Badgers - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	1	0	Lyssavirus	0
	Bats - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	27	1	European bat lyssavirus 2	1
	Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	23	0	Lyssavirus	0
	Cattle (bovine animals) - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	1	0	Lyssavirus	0
	Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	32	0	Lyssavirus	0
	Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	10	0	Lyssavirus	0
	Martens - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	1	0	Lyssavirus	0
	Wolves - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	1	0	Lyssavirus	0

Table MYCOBACTERIUM:Mycobacterium in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Alpacas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Mycobacterium	0
	Badgers - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	2	0	Mycobacterium	0
	Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	7	2	Mycobacterium microti	2
	Deer - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Visual inspection	animal	187	0	Mycobacterium	0
	Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	7	0	Mycobacterium	0
	Llamas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Mycobacterium	0
	Pigs - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Mycobacterium	0
	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	2	0	Mycobacterium	0
	Steinbock - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Mycobacterium	0
	Wild boars - farmed - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Mycobacterium	0
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	19	0	Mycobacterium	0

Table SALMONELLA:Salmonella in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Number of Flocks Under Control Programme	Target Verification	Sampling Details	Method	total units tested	total units positive	Zoonoses	Units positive
SWITZERLAND	Alpacas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	11	0	Salmonella	0
	Birds - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	1	Salmonella Hessarek	1
	Bison - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
	Budgerigars - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	4	0	Salmonella	0
	Buffalos - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	2	0	Salmonella	0
	Camels - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
	Canary - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	3	0	Salmonella	0
	Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	491	15	Salmonella Hadar	1
									Salmonella Mishmarhaemek	1
									Salmonella Napoli	1
									Salmonella spp., unspecified	9
									Salmonella Typhimurium, monophasic	3
	Cattle (bovine animals) - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1792	215	Salmonella Abony	2
									Salmonella Dublin	6
									Salmonella Enteritidis	18
									Salmonella Mikawasima	2
									Salmonella Reading	1
									Salmonella spp., unspecified	169
									Salmonella Typhimurium	17
	Crows - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	5	0	Salmonella	0
	Deer - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	16	0	Salmonella	0
	Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	978	33	Salmonella Agona	1
									Salmonella Enteritidis	2
									Salmonella Paratyphi B	1
									Salmonella Schwarzengrund	1
									Salmonella spp., unspecified	23
									Salmonella Typhimurium	4
									Salmonella Veneziana	1
	Ducks - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	6	0	Salmonella	0
	Ferrets - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
	Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	5	3	Salmonella Enteritidis	3

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Number of Flocks Under Control Programme	Target Verification	Sampling Details	Method	total units tested	total units positive	Zoonoses	Units positive
SWITZERLAND	Gallus gallus (fowl) - breeding flocks for broiler production line - adult - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	73	Y	N_A	ISO 6579:2002 Salmonella	68	0	Salmonella	0
				N	N_A	ISO 6579:2002 Salmonella	68	1	Salmonella Sanga	1
	Gallus gallus (fowl) - broilers - before slaughter - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Industry sampling - Census	herd/flock	4562	N	N_A	ISO 6579:2002 Salmonella	577	12	Salmonella 13,23:i:-	1
									Salmonella Agona	1
									Salmonella Coeln	1
									Salmonella Enteritidis	3
									Salmonella Infantis	3
									Salmonella Livingstone	1
									Salmonella Tennessee	1
									Salmonella Welikade	1
	Gallus gallus (fowl) - broilers - before slaughter - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	4562	Y	N_A	ISO 6579:2002 Salmonella	633	0	Salmonella	0
	Gallus gallus (fowl) - broilers - before slaughter - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Official sampling - Census	herd/flock	4562	N	N_A	ISO 6579:2002 Salmonella	56	1	Salmonella 13,23:i:-	1
	Gallus gallus (fowl) - laying hens - adult - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	964	Y	N_A	ISO 6579:2002 Salmonella	804	2	Salmonella Enteritidis	1
									Salmonella Typhimurium	1
				N	N_A	ISO 6579:2002 Salmonella	804	1	Salmonella Agona	1
									Salmonella Enteritidis	1
									Salmonella Mbandaka	1
									Salmonella Stourbridge	1
									Salmonella Typhimurium	1
	Gallus gallus (fowl) - parent breeding flocks for egg production line - adult - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	123	Y	N_A	ISO 6579:2002 Salmonella	71	0	Salmonella	0
	Goats - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	52	2	Salmonella enterica, subspecies enterica	1
									Salmonella Napoli	1
	Guinea pigs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	14	1	Salmonella Enteritidis	1
	Hedgehogs - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	3	0	Salmonella	0
	Kangaroos - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
	Llamas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	2	0	Salmonella	0
	Oscine birds - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	6	0	Salmonella	0
	Other ruminants - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	2	0	Salmonella	0
	Parrots - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	6	0	Salmonella	0

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Number of Flocks Under Control Programme	Target Verification	Sampling Details	Method	total units tested	total units positive	Zoonoses	Units positive
SWITZERLAND	Peafowl - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
	Pigeons - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	13	3	Salmonella enterica, subspecies enterica	1
									Salmonella spp., unspecified	1
									Salmonella Typhimurium	1
	Pigeons - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	2	0	Salmonella	0
	Pigs - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Slide agglutination according White Kauffmann Le Minor Scheme	81	3	Salmonella Rissen	1
									Salmonella spp., unspecified	2
	Quails - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	11	4	Salmonella Agona	1
									Salmonella Nigeria	2
									Salmonella spp., unspecified	1
	Rabbits - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	20	0	Salmonella	0
	Reptiles - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	9	6	Salmonella enterica, subsp. houtenae	1
									Salmonella enterica, subspecies diarizonae	1
									Salmonella Kisarawe	1
									Salmonella Orientalis	1
									Salmonella spp., unspecified	2
	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	127	22	Salmonella Abortusovis	1
									Salmonella enterica, subspecies diarizonae	14
									Salmonella enterica, subspecies enterica	5
									Salmonella spp., unspecified	2
	Snakes - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	2	0	Salmonella	0
	Solipeds, domestic - donkeys - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	3	1	Salmonella Typhimurium	1
	Solipeds, domestic - horses - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	289	17	Salmonella enterica, subspecies enterica	5
									Salmonella Enteritidis	3
									Salmonella spp., unspecified	1
									Salmonella Typhimurium	7
									Salmonella Veneziana	1
	Swans - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
	Turkeys - fattening flocks - before slaughter - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Industry sampling - Census	herd/flock	98	N	N_A	ISO 6579:2002 Salmonella	34	9	Salmonella Albany	9
	Turkeys - fattening flocks - before slaughter - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	98	Y	N_A	ISO 6579:2002 Salmonella	37	0	Salmonella	0
	Turkeys - fattening flocks - before slaughter - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Official sampling - Census	herd/flock	98	N	N_A	ISO 6579:2002 Salmonella	3	0	Salmonella	0
	Turtles - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	7	0	Salmonella	0

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Number of Flocks Under Control Programme	Target Verification	Sampling Details	Method	total units tested	total units positive	Zoonoses	Units positive
SWITZERLAND	Wild boars - farmed - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	1	Salmonella enterica, subspecies enterica	1
	Wolves - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	308	35	Salmonella Abaetetuba	1
									Salmonella Adelaide	1
									Salmonella Bukavu	3
									Salmonella Chester	1
									Salmonella enterica, subsp. houtenae	1
									Salmonella enterica, subspecies diarizonae	11
									Salmonella enterica, subspecies enterica	7
									Salmonella enterica, subspecies salamae	2
									Salmonella Enteritidis	2
									Salmonella Fresno	1
									Salmonella IV 43:z4,z23:-	1
									Salmonella Nigeria	1
									Salmonella Senftenberg	2
									Salmonella Tennessee	1

Table SALMONELLA:Salmonella in food

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	Method	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Meat from bovine animals - carcase - Slaughterhouse - Switzerland - food sample - carcase swabs - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	single (food/feed)	400	Square centimetre	N_A	ISO 6579-1:2017 Salmonella	1125	1	Salmonella spp., unspecified	1
	Meat from broilers (Gallus gallus) - carcase - chilled - Slaughterhouse - Switzerland - food sample - neck skin - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	761	3	Salmonella Enteritidis	2
									Salmonella Tennessee	1
	Meat from broilers (Gallus gallus) - fresh - skinned - Cutting plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	200	0	Salmonella	0
	Meat from broilers (Gallus gallus) - fresh - skinned - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	15	0	Salmonella	0
		single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	49	0	Salmonella	0
	Meat from broilers (Gallus gallus) - fresh - with skin - Cutting plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	156	0	Salmonella	0
	Meat from broilers (Gallus gallus) - fresh - with skin - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	31	0	Salmonella	0
		single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	39	1	Salmonella Enteritidis	1
	Meat from broilers (Gallus gallus) - fresh - with skin - Slaughterhouse - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	14	0	Salmonella	0
	Meat from broilers (Gallus gallus) - meat preparation - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	7	0	Salmonella	0
		single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	321	0	Salmonella	0
	Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	41	0	Salmonella	0
	Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - Cutting plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	277	0	Salmonella	0
	Meat from broilers (Gallus gallus) - minced meat - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	181	0	Salmonella	0
	Meat from pig - carcase - Slaughterhouse - Switzerland - food sample - carcase swabs - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	single (food/feed)	400	Square centimetre	N_A	ISO 6579-1:2017 Salmonella	1190	0	Salmonella	0
	Meat from sheep - carcase - Slaughterhouse - Switzerland - food sample - carcase swabs - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	single (food/feed)	400	Square centimetre	N_A	ISO 6579-1:2017 Salmonella	250	0	Salmonella	0
	Meat from turkey - carcase - chilled - Slaughterhouse - Switzerland - food sample - neck skin - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	120	0	Salmonella	0
	Meat from turkey - fresh - skinned - Cutting plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	160	2	Salmonella Albany	1
									Salmonella spp., unspecified	1
	Meat from turkey - fresh - with skin - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	2	0	Salmonella	0
	Meat from turkey - meat preparation - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	15	0	Salmonella	0

Table SALMONELLA:Salmonella in feed

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	Method	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Compound feedingstuffs for cattle - final product - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Compound feedingstuffs for cattle - final product - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	152	0	Salmonella	0
	Compound feedingstuffs for fish - final product - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	2	0	Salmonella	0
	Compound feedingstuffs for fish - final product - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	4	0	Salmonella	0
	Compound feedingstuffs for horses - final product - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Compound feedingstuffs for pigs - final product - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	14	0	Salmonella	0
	Compound feedingstuffs for poultry (non specified) - final product - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	52	0	Salmonella	0
	Feed material of cereal grain origin - maize derived - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	7	0	Salmonella	0
	Feed material of cereal grain origin - maize derived - Feed mill - Non European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	9	0	Salmonella	0
	Feed material of cereal grain origin - maize derived - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Feed material of oil seed or fruit origin - other oil seeds derived - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Feed material of oil seed or fruit origin - other oil seeds derived - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	2	0	Salmonella	0
	Feed material of oil seed or fruit origin - rape seed derived - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	18	0	Salmonella	0
	Feed material of oil seed or fruit origin - rape seed derived - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	9	0	Salmonella	0
	Feed material of oil seed or fruit origin - rape seed derived - Feed mill - Unknown - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Feed material of oil seed or fruit origin - soya (bean) derived - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	30	0	Salmonella	0
	Feed material of oil seed or fruit origin - soya (bean) derived - Feed mill - Non European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	4	0	Salmonella	0
	Feed material of oil seed or fruit origin - soya (bean) derived - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	2	0	Salmonella	0
	Feed material of oil seed or fruit origin - soya (bean) derived - Feed mill - Unknown - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	16	0	Salmonella	0
	Feed material of oil seed or fruit origin - sunflower seed derived - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	7	0	Salmonella	0
	Feed material of oil seed or fruit origin - sunflower seed derived - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	2	0	Salmonella	0
	Feed material of oil seed or fruit origin - sunflower seed derived - Feed mill - Unknown - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Other feed material - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	2	0	Salmonella	0
	Other feed material - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	3	0	Salmonella	0

Table TOXOPLASMA:Toxoplasma in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Alpacas - farmed - Veterinary activities - Not Available - animal sample - brain - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	3	0	Toxoplasma gondii	0
	Badgers - wild - Natural habitat - Not Available - animal sample - brain - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Beavers - wild - Natural habitat - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	2	1	Toxoplasma gondii	1
	Cats - pet animals - Veterinary activities - Not Available - animal sample - blood - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	310	96	Toxoplasma gondii	96
	Cats - pet animals - Veterinary activities - Not Available - animal sample - faeces - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	7	0	Toxoplasma gondii	0
	Cats - pet animals - Veterinary activities - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	10	2	Toxoplasma gondii	2
	Cattle (bovine animals) - Veterinary activities - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Dogs - pet animals - Veterinary activities - Not Available - animal sample - blood - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	93	20	Toxoplasma gondii	20
	Dogs - pet animals - Veterinary activities - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	6	1	Toxoplasma gondii	1
	Goats - Veterinary activities - Not Available - animal sample - brain - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	2	0	Toxoplasma gondii	0
	Goats - Veterinary activities - Not Available - animal sample - foetus/stillbirth - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Guinea pigs - pet animals - Veterinary activities - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Martens - wild - Natural habitat - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Monkeys - zoo animal - Zoo - Not Available - animal sample - blood - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Monkeys - zoo animal - Zoo - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	2	1	Toxoplasma gondii	1
	Other carnivores - zoo animals - Zoo - Not Available - animal sample - blood - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	8	5	Toxoplasma gondii	5
	Other ruminants - zoo animals - Zoo - Not Available - animal sample - blood - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	1	Toxoplasma gondii	1
	Other ruminants - zoo animals - Zoo - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	1	Toxoplasma gondii	1
	Sheep - Veterinary activities - Not Available - animal sample - blood - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Zoo animals, all - Zoo - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0

Table TRICHINELLA:Trichinella in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Badgers - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Magnetic stirrer method for pooled sample digestion	animal	13	0	Trichinella	0
	Cats - stray cats - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Magnetic stirrer method for pooled sample digestion	animal	1	0	Trichinella	0
	Deer - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Magnetic stirrer method for pooled sample digestion	animal	2	0	Trichinella	0
	Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Magnetic stirrer method for pooled sample digestion	animal	2	0	Trichinella	0
	Lynx - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	22	6	Trichinella britovi	6
	Pigs - breeding animals - others - not raised under controlled housing conditions - Slaughterhouse - Switzerland - animal sample - Surveillance - Official sampling - Census	not raised under controlled housing conditions as requirements in Regulation (EU) No 216/2014 are not fully met	Magnetic stirrer method for pooled sample digestion	animal	31096	0	Trichinella	0
	Pigs - fattening pigs - others - not raised under controlled housing conditions - Slaughterhouse - Switzerland - animal sample - Surveillance - Official sampling - Census	not raised under controlled housing conditions as requirements in Regulation (EU) No 216/2014 are not fully met	Magnetic stirrer method for pooled sample digestion	animal	2360922	0	Trichinella	0
	Solipeds, domestic - horses - Slaughterhouse - Switzerland - animal sample - Surveillance - Official sampling - Census	N_A	Magnetic stirrer method for pooled sample digestion	animal	906	0	Trichinella	0
	Wild boars - wild - Hunting - Switzerland - animal sample - Unspecified - Not applicable - Census	N_A	Magnetic stirrer method for pooled sample digestion	animal	11582	0	Trichinella	0
	Wolves - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	35	7	Trichinella britovi	7

Table VIRUS:Virus in animal

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Solipeds, domestic - donkeys - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Flavivirus	0
	Solipeds, domestic - horses - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	17	0	Flavivirus	0

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Antelopes - zoo animal - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Yersinia	0
	Bats - wild - Natural habitat - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Bats - zoo animal - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Yersinia	0
	Bears - zoo animal - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Beavers - wild - Natural habitat - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Beavers - zoo animal - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Birds - pet animals - Household - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	0	Yersinia	0
	Birds - zoo animal - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	66	0	Yersinia	0
	Budgerigars - pet animals - Household - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Camels - farmed - Farm - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Camels - zoo animals - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	4	0	Yersinia	0
	Canary - pet animals - Household - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	1	Yersinia pseudotuberculosis	1
	Cats - pet animals - Household - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	336	1	Yersinia enterocolitica - biotype 4	1
	Cattle (bovine animals) - unspecified - Farm - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	15	0	Yersinia	0
	Deer - farmed - Farm - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	12	0	Yersinia	0
	Dogs - pet animals - Household - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	744	13	Yersinia pseudotuberculosis	1
							Yersinia, unspecified sp.	12
	Elephants - zoo animals - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Ferrets - pet animals - Household - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Goats - Farm - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	4	0	Yersinia	0
	Guinea pigs - pet animals - Household - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	9	0	Yersinia	0
	Hares - Natural habitat - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	1	Yersinia pseudotuberculosis	1
	Hedgehogs - wild - Natural habitat - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Yersinia	0
	Insectivores - zoo animal - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	8	0	Yersinia	0
	Kangaroos - zoo animal - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Mice - zoo animal - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	8	0	Yersinia	0
	Monkeys - zoo animal - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	31	1	Yersinia pseudotuberculosis	1
	Other carnivores - zoo animals - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	12	0	Yersinia	0

Area of sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	total units tested	total units positive	Zoonoses	N units positive
SWITZERLAND	Other ruminants - zoo animals - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	11	0	Yersinia	0
	Otter - zoo animals - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Yersinia	0
	Parrots - pet animals - Household - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	0	Yersinia	0
	Pigs - unspecified - Farm - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	6	0	Yersinia	0
	Rabbits - pet animals - Household - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	8	1	Yersinia, unspecified sp.	1
	Reptiles - pet animals - Household - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Reptiles - zoo animal - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	8	0	Yersinia	0
	Rodents - zoo animal - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	10	1	Yersinia pseudotuberculosis	1
	Sheep - Farm - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Yersinia	0
	Solipeds, domestic - donkeys - Farm - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Solipeds, domestic - horses - Farm - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	78	1	Yersinia, unspecified sp.	1
	Turtles - pet animals - Household - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Turtles - zoo animals - Zoo - Not Available - animal sample - faeces - Clinical investigations - Official sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Yersinia	0

FOODBORNE OUTBREAKS TABLES

Foodborne Outbreaks: summarized data

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

		Outbreak strenght	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	Other processed food products and prepared dishes - pasta/rice salad		1	22	0	0				
	Other processed food products and prepared dishes - rice based dishes		1	2	0	0				
Enteropathogenic E. coli (EPEC)	Bakery products - cakes		1	2	0	0				
Listeria monocytogenes	Fish - smoked		1	20	19	1				
Norovirus	Unknown						4	180	1	0
	Other processed food products and prepared dishes - pizza and pizza-like dishes		1	4	1	0				
Salmonella Agona	Unknown						1	8	0	0
Salmonella spp., unspecified	Eggs and egg products		1	13	2	0				
	Unknown						2	6	5	0
Salmonella Typhimurium, monophasic	Confectionery products and pastes - chocolate-based product		1	49	0	0				
Shigella sonnei	Tap water, including well water		1	256	3	0				
Unknown	Unknown						24	221	13	0
Vibrio parahaemolyticus	Live bivalve molluscs - oysters		1	2	0	0				

Strong Foodborne Outbreaks: detailed data

Causative agent	H	AG	VT	Other Causative Agent	FBO nat. code	Outbreak type	Food vehicle	More food vehicle info	Nature of evidence	Setting	Place of origin of problem	Origin of food vehicle	Contributory factors	Comment	N outbreaks	N human cases	N hosp.	N deaths
Bacillus cereus	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_1	General	Other processed food products and prepared dishes - pasta/rice salad	Rice salad	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent	School or kindergarten	Not Available	Not Available	Not Available	N_A	1	22	0	0
					CH_FBO_2022_2	General	Other processed food products and prepared dishes - rice based dishes	Risotto radicchio with gorgonzola cheese	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	1	2	0	0
Enteropathogenic E. coli (EPEC)	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_3	Household	Bakery products - cakes	Pineapple cake	Descriptive environmental evidence;Descriptive environmental evidence	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	1	2	0	0
Listeria monocytogenes	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_4	General	Fish - smoked	Smoked trout	Product-tracing investigations;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans	Multiple places of exposure in one country	Not Available	Not Available	Not Available	N_A	1	20	19	1
Norovirus	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_5	Unknown	Other processed food products and prepared dishes - pizza and pizza-like dishes	Pizza	Descriptive environmental evidence;Descriptive environmental evidence	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	1	4	1	0
Salmonella spp., unspecified	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_11	General	Eggs and egg products	chocolate mousse	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans	School or kindergarten	Not Available	Not Available	Not Available	N_A	1	13	2	0

Causative agent	H	AG	VT	Other Causative Agent	FBO nat. code	Outbreak type	Food vehicle	More food vehicle info	Nature of evidence	Setting	Place of origin of problem	Origin of food vehicle	Contributory factors	Comment	N outbreaks	N human cases	N hosp.	N deaths
Salmonella Typhimurium, monophasic	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_9	Part of multicountry outbreak	Confectionery products and pastes - chocolate-based product	N_A	Product-tracing investigations ;Descriptive environmental evidence	Multiple places of exposure in more than one country	Not Available	Not Available	Not Available	N_A	1	49	unk	0
Shigella sonnei	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_14	General	Tap water, including well water	N_A	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans	Domestic premises	Not Available	Not Available	Not Available	N_A	1	256	3	0
Vibrio parahaemolyticus	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_15	General	Live bivalve molluscs - oysters	N_A	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	1	2	0	0

Weak Foodborne Outbreaks: detailed data

Causative agent	H	AG	VT	Other Causative Agent	FBO nat. code	Outbreak type	Food vehicle	More food vehicle info	Nature of evidence	Setting	Place of origin of problem	Origin of food vehicle	Contributory factors	Comment	N outbreaks	N human cases	N hosp.	N deaths
Norovirus	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_6	General	Unknown	N_A	Descriptive environmental evidence; Descriptive environmental evidence	School or kindergarten	Not Available	Not Available	Not Available	N_A	1	unk	0	0
					CH_FBO_2022_7	General	Unknown	N_A	Descriptive environmental evidence; Descriptive environmental evidence	Hospital or medical care facility	Not Available	Not Available	Not Available	N_A	1	100	unk	0
					CH_FBO_2022_8	General	Unknown	N_A	Descriptive environmental evidence; Descriptive environmental evidence	Residential institution (nursing home or prison or boarding school)	Not Available	Not Available	Not Available	N_A	2	80	1	0
Salmonella Agona	Not Available	Not Available	Not Available	Campylobacter, unspecified sp.	CH_FBO_2022_10	General	Unknown	N_A	Descriptive environmental evidence; Descriptive environmental evidence	Hospital or medical care facility	Not Available	Not Available	Not Available	N_A	1	8	0	0
Salmonella spp., unspecified	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_12	Unknown	Unknown	N_A	Descriptive environmental evidence; Descriptive environmental evidence	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	1	2	2	0
					CH_FBO_2022_13	General	Unknown	N_A	Descriptive environmental evidence; Descriptive environmental evidence	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	1	4	3	0
Unknown	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_16	Unknown	Unknown	N_A	Descriptive environmental evidence	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	2	7	0	0

Causative agent	H	AG	VT	Other Causative Agent	FBO nat. code	Outbreak type	Food vehicle	More food vehicle info	Nature of evidence	Setting	Place of origin of problem	Origin of food vehicle	Contributory factors	Comment	N outbreaks	N human cases	N hosp.	N deaths
Unknown	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_17	General	Unknown	N_A	Descriptive environmental evidence	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	3	108	0	0
					CH_FBO_2022_18	General	Unknown	N_A	Unknown	School or kindergarten	Not Available	Not Available	Not Available	N_A	2	22	2	0
					CH_FBO_2022_19	Household	Unknown	N_A	Descriptive environmental evidence	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	1	2	0	0
					CH_FBO_2022_20	Unknown	Unknown	N_A	Descriptive environmental evidence	Take-away or fast-food outlet	Not Available	Not Available	Not Available	N_A	1	3	0	0
					CH_FBO_2022_21	General	Unknown	N_A	Descriptive environmental evidence	Canteen or workplace catering	Not Available	Not Available	Not Available	N_A	1	3	3	0
					CH_FBO_2022_22	Household	Unknown	N_A	Unknown	Take-away or fast-food outlet	Not Available	Not Available	Not Available	N_A	2	6	1	0
					CH_FBO_2022_23	General	Unknown	N_A	Unknown	Domestic premises	Not Available	Not Available	Not Available	N_A	1	7	1	0
					CH_FBO_2022_24	General	Unknown	N_A	Unknown	Temporary mass catering (fairs or festivals)	Not Available	Not Available	Not Available	N_A	1	7	0	0
					CH_FBO_2022_25	Unknown	Unknown	N_A	Unknown	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	3	8	0	0
					CH_FBO_2022_26	Household	Unknown	N_A	Unknown	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	1	4	0	0
					CH_FBO_2022_27	General	Unknown	N_A	Unknown	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	3	18	2	0

Causative agent	H	AG	VT	Other Causative Agent	FBO nat. code	Outbreak type	Food vehicle	More food vehicle info	Nature of evidence	Setting	Place of origin of problem	Origin of food vehicle	Contributory factors	Comment	N outbreaks	N human cases	N hosp.	N deaths
Unknown	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_28	General	Unknown	N_A	Unknown	Residential institution (nursing home or prison or boarding school)	Not Available	Not Available	Not Available	N_A	1	20	0	0
					CH_FBO_2022_29	General	Unknown	N_A	Descriptive environmental evidence	Residential institution (nursing home or prison or boarding school)	Not Available	Not Available	Not Available	N_A	1	unk	0	0
					CH_FBO_2022_30	General	Unknown	N_A	Unknown	Canteen or workplace catering	Not Available	Not Available	Not Available	N_A	1	6	4	0

Table Antimicrobial susceptibility testing of Campylobacter coli in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

	AM substance	Chloramphenicol	Ciprofloxacin	Ertapenem	Erythromycin	Gentamicin	Tetracycline
	ECOFF	**16**	**0.5**	**0.5**	**8**	**2**	**2**
	Lowest limit	**2**	**0.125**	**0.125**	**1**	**0.25**	**0.5**
	Highest limit	**64**	**32**	**4**	**512**	**16**	**64**
	N of tested isolates	**62**	**62**	**62**	**62**	**62**	**62**
MIC	**N of resistant isolates**	**0**	**37**	**10**	**1**	**0**	**23**
<=0.125			19	32			
<=0.25						10	
0.25			6	8			
<=0.5							34
0.5				12		28	
<=1					56		
1				6		24	4
<=2		36					
2				4	3		1
4		24	2		1		
8		2	16		1		1
16			12				
32			7				1
64							8
>64							13
>512					1		

Table Antimicrobial susceptibility testing of Campylobacter jejuni in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

	AM substance	Chloramphenicol	Ciprofloxacin	Ertapenem	Erythromycin	Gentamicin	Tetracycline
	ECOFF	**16**	**0.5**	**0.5**	**4**	**2**	**1**
	Lowest limit	**2**	**0.125**	**0.125**	**1**	**0.25**	**0.5**
	Highest limit	**64**	**32**	**4**	**512**	**16**	**64**
	N of tested isolates	**232**	**232**	**232**	**232**	**232**	**232**
MIC	**N of resistant isolates**	**0**	**106**	**0**	**0**	**0**	**63**
<=0.125			113	217			
<=0.25						71	
0.25			11	11			
<=0.5							161
0.5			2	4		148	
<=1					224		
1			1			13	8
<=2		221					
2			1		5		3
4		10	3		3		2
8		1	39				3
16			55				14
32			5				6
>32			2				
64							16
>64							19

ANTIMICROBIAL RESISTANCE TABLES FOR SALMONELLA

Table Antimicrobial susceptibility testing of Salmonella 1,13,23:i:- in Gallus gallus (fowl) - broilers - before slaughter

Sampling Stage: Farm

Sampling Type: environmental sample - boot swabs

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Census

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	4	8	16	0.5	2	16	0.064	2
				Lowest limit	4	1	2	0.25	0.25	8	0.015	1
				Highest limit	128	32	64	4	8	64	8	16
				N of tested isolates	1	1	1	1	1	1	1	1
				N of resistant isolates	0	0	0	0	0	0	0	0
Not Available	Not Available	Not Available	0.03								1	
			<=0.25					1				
			0.5						1			
			<=1			1						1
			<=4		1							
			<=8							1		
			8				1					

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	0.064			1					
			<=0.25							1	1
			<=0.5		1						
			<=2						1		
			<=4				1				
			128					1			

Table Antimicrobial susceptibility testing of Salmonella 1,13,23:i:- in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	4	8	16	0.5	2	16	0.064	2
				Lowest limit	4	1	2	0.25	0.25	8	0.015	1
				Highest limit	128	32	64	4	8	64	8	16
				N of tested isolates	2	2	2	2	2	2	2	2
				N of resistant isolates	0	0	0	0	0	0	0	0
Not Available	Not Available	Not Available	0.03								2	
			<=0.25					2				
			0.5						1			
			<=1									2
			1						1			
			2			2						
			<=4		2							
			<=8							2		
			8				2					

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
			ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
			Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
			Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
			N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**
			N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	**MIC**							
			<=0.03		1					
			0.064		1					
			<=0.25						1	2
			<=0.5	2						
			0.5						1	
			<=2					2		
			<=4			2				
			128				2			

Table Antimicrobial susceptibility testing of Salmonella Agona in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**4**	**8**	**16**	**0.5**	**2**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	0.03								1	
			<=0.25					1	1			
			<=1			1						
			2									1
			<=4		1							
			<=8							1		
			8				1					

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

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

Sampling Stage: Farm

Sampling Type: environmental sample - boot swabs

Sampling Context: Control and eradication programmes

Sampler: Official and industry sampling

Sampling Strategy: Census

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

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

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

Table Antimicrobial susceptibility testing of Salmonella Albany in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

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

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

Table Antimicrobial susceptibility testing of Salmonella Albany in Turkeys

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	4	8	16	0.5	2	16	0.064	2
				Lowest limit	4	1	2	0.25	0.25	8	0.015	1
				Highest limit	128	32	64	4	8	64	8	16
				N of tested isolates	7	7	7	7	7	7	7	7
				N of resistant isolates	0	0	0	0	0	0	0	0
Not Available	Not Available	Not Available	<=0.015								5	
			0.03								2	
			<=0.25					7	1			
			0.5						6			
			<=1			6						7
			2			1						
			<=4		7							
			4				4					
			<=8							7		
			8				3					

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**7**	**7**	**7**	**7**	**7**	**7**	**7**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.03			6					
			0.064			1					
			<=0.25							6	7
			<=0.5		3						
			0.5							1	
			1		4						
			<=2						7		
			<=4				7				
			16					1			
			32					2			
			64					4			

Table Antimicrobial susceptibility testing of Salmonella Coeln in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**4**	**8**	**16**	**0.5**	**2**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	0.03								2	
			<=0.25					2	1			
			0.5						1			
			<=1			1						1
			2			1						1
			<=4		2							
			4				1					
			<=8							2		
			8				1					

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
			ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
			Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
			Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
			N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**
			N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	**MIC**							
			<=0.03		1					
			0.064		1					
			<=0.25						2	2
			<=0.5	2						
			<=2					2		
			<=4			2				
			128				1			
			256				1			

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

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**4**	**8**	**16**	**0.5**	**2**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.015								10	
			0.03								4	
			<=0.25					14	13			
			0.5						1			
			<=1			2						7
			2			12						7
			<=4		14							
			4				8					
			<=8							14		
			8				6					

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**14**	**14**	**14**	**14**	**14**	**14**	**14**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.03			12					
			0.064			2					
			<=0.25							14	13
			<=0.5		14						
			0.5								1
			<=2						14		
			<=4				13				
			<=8					1			
			8				1				
			32					3			
			64					3			
			128					7			

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

Sampling Stage: Farm

Sampling Type: environmental sample - boot swabs

Sampling Context: Control and eradication programmes

Sampler: Official and industry sampling

Sampling Strategy: Census

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**4**	**8**	**16**	**0.5**	**2**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.015								1	
			0.03								1	
			<=0.25					2	2			
			<=1			1						
			2			1						2
			<=4		2							
			4				2					
			<=8							2		

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

Table Antimicrobial susceptibility testing of Salmonella Infantis in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**4**	**8**	**16**	**0.5**	**2**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.015								2	
			0.03								1	
			<=0.25					3	1			
			0.5						2			
			<=1			2						3
			2			1						
			<=4		3							
			4				1					
			<=8							3		
			8				2					

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

Table Antimicrobial susceptibility testing of Salmonella Livingstone in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**4**	**8**	**16**	**0.5**	**2**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	<=0.015								1	
			0.03								1	
			<=0.25					2	2			
			<=1			1						2
			2			1						
			<=4		2							
			<=8							2		
			8				2					

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

Table Antimicrobial susceptibility testing of Salmonella Mbandaka in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

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

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

Table Antimicrobial susceptibility testing of Salmonella Napoli in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	4	8	16	0.5	2	16	0.064	2
				Lowest limit	4	1	2	0.25	0.25	8	0.015	1
				Highest limit	128	32	64	4	8	64	8	16
				N of tested isolates	2	2	2	2	2	2	2	2
				N of resistant isolates	0	0	0	0	0	0	0	0
Not Available	Not Available	Not Available	<=0.015								1	
			0.03								1	
			<=0.25					2	1			
			0.5						1			
			2			2						2
			<=4		2							
			4				1					
			<=8							2		
			8				1					

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
			ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
			Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
			Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
			N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**
			N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	**MIC**							
			<=0.03		1					
			0.064		1					
			<=0.25						1	2
			<=0.5	2						
			0.5						1	
			<=2					2		
			<=4			2				
			32				1			
			64				1			

Table Antimicrobial susceptibility testing of Salmonella Sanga in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

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

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

Table Antimicrobial susceptibility testing of Salmonella Senftenberg in Turkeys

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

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

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**
				N of resistant isolates	**0**	**0**	**2**	**1**	**0**	**0**	**0**
Not Available	Not Available	Not Available	0.064			2					
			<=0.25							2	
			<=0.5		2						
			0.5								2
			<=2						2		
			>64				2				
			128					1			
			512					1			

Table Antimicrobial susceptibility testing of Salmonella Stourbridge in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**4**	**8**	**16**	**0.5**	**2**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	0.03								1	
			<=0.25					1				
			0.5						1			
			<=1			1						1
			<=4		1							
			4				1					
			<=8							1		

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**
			MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	0.064			1					
			<=0.25								1
			<=0.5		1						
			0.5							1	
			<=2						1		
			<=4				1				
			256					1			

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

Sampling Stage: Farm

Sampling Type: environmental sample - boot swabs

Sampling Context: Control and eradication programmes

Sampler: Official and industry sampling

Sampling Strategy: Census

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**4**	**8**	**16**	**0.5**	**2**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	0.03								1	
			<=0.25					1	1			
			<=1			1						1
			<=4		1							
			4				1					
			<=8							1		

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

Table Antimicrobial susceptibility testing of Salmonella Tennessee in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

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

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

Table Antimicrobial susceptibility testing of Salmonella Typhimurium in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**4**	**8**	**16**	**0.5**	**2**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
Not Available	Not Available	Not Available	<=0.015								1	
			0.03								9	
			<=0.25					10	8			
			0.5						2			
			<=1			3						1
			2			7						8
			<=4		10							
			4				10					1
			<=8							10		

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
			ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
			Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
			Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
			N of tested isolates	**10**	**10**	**10**	**10**	**10**	**10**	**10**
			N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	**MIC**							
			<=0.03		4					
			0.064		6					
			<=0.25						9	10
			<=0.5	10						
			0.5						1	
			<=2					10		
			<=4			10				
			16				2			
			32				2			
			64				4			
			128				2			

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

Sampling Stage: Farm

Sampling Type: environmental sample - boot swabs

Sampling Context: Control and eradication programmes

Sampler: Official and industry sampling

Sampling Strategy: Census

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	4	8	16	0.5	2	16	0.064	2
				Lowest limit	4	1	2	0.25	0.25	8	0.015	1
				Highest limit	128	32	64	4	8	64	8	16
				N of tested isolates	2	2	2	2	2	2	2	2
				N of resistant isolates	0	0	0	0	0	0	0	0
Not Available	Not Available	Not Available	<=0.015								1	
			0.03								1	
			<=0.25					2	1			
			0.5						1			
			<=1			1						1
			2			1						1
			<=4		2							
			4				1					
			<=8							2		
			8				1					

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	0.064			2					
			<=0.25								2
			<=0.5		2						
			0.5							2	
			<=2						2		
			<=4				2				
			16					1			
			64					1			

Table Antimicrobial susceptibility testing of Salmonella Typhimurium, monophasic in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**4**	**8**	**16**	**0.5**	**2**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
				N of resistant isolates	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	0.03								2	
			<=0.25					2	2			
			<=1									2
			<=4		2							
			4				2					
			<=8							2		
			>32			2						

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
			ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
			Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
			Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
			N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**
			MIC / **N of resistant isolates**	**0**	**0**	**0**	**2**	**2**	**0**	**0**
Not Available	Not Available	Not Available	0.064		2					
			<=0.25						2	2
			<=0.5	2						
			<=4			2				
			>32					2		
			>512				2			

Table Antimicrobial susceptibility testing of Salmonella Veneziana in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

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

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**256**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**
				N of resistant isolates	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	0.064			1					
			<=0.25							1	1
			<=0.5		1						
			<=2						1		
			<=4				1				
			64					1			

Table Antimicrobial susceptibility testing of Salmonella Welikade in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampling Context: Unspecified

Sampler: Not applicable

Sampling Strategy: Not specified

Programme Code: OTHER AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	4	8	16	0.5	2	16	0.064	2
				Lowest limit	4	1	2	0.25	0.25	8	0.015	1
				Highest limit	128	32	64	4	8	64	8	16
				N of tested isolates	1	1	1	1	1	1	1	1
				N of resistant isolates	0	0	0	0	0	0	0	0
Not Available	Not Available	Not Available	0.03								1	
			<=0.25					1				
			0.5						1			
			<=1			1						
			2									1
			<=4		1							
			4				1					
			<=8							1		

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

ANTIMICROBIAL RESISTANCE TABLES FOR ESCHERICHIA COLI

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

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON pnl2

Analytical Method: Dilution - sensititre

Country Of Origin:Germany

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF	0.125	0.25	0.25	8	0.5	0.5	0.06	0.5	0.125	16
			Lowest limit	0.064	0.25	0.064	0.5	0.25	0.125	0.015	0.125	0.03	0.5
			Highest limit	32	64	64	64	128	128	2	16	16	128
			N of tested isolates	22	22	22	22	22	22	22	22	22	22
			N of resistant isolates	20	22	3	3	22	3	0	0	0	0
Not Available	Not Available	Not Available	MIC										
			<=0.015							17			
			<=0.03									22	
			0.03							5			
			<=0.064			15							
			<=0.125						8		16		
			0.125	2		4							
			0.25						10		5		
			0.5	1					1		1		
			1		1	3		1					
			2	3	2		2	4	2				
			4	9			14	9	1				8

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF	**0.125**	**0.25**	**0.25**	**8**	**0.5**	**0.5**	**0.06**	**0.5**	**0.125**	**16**
			Lowest limit	**0.064**	**0.25**	**0.064**	**0.5**	**0.25**	**0.125**	**0.015**	**0.125**	**0.03**	**0.5**
			Highest limit	**32**	**64**	**64**	**64**	**128**	**128**	**2**	**16**	**16**	**128**
			N of tested isolates	**22**	**22**	**22**	**22**	**22**	**22**	**22**	**22**	**22**	**22**
			N of resistant isolates	**20**	**22**	**3**	**3**	**22**	**3**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	**MIC**										
			8	4			3	6					14
			16	3	5		2	2					
			32		5								
			64		5		1						
			>64		4								

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

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON

Analytical Method: Dilution - sensititre

Country Of Origin:Germany

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
			ECOFF	**8**	**8**	**16**	**0.25**	**0.5**	**16**	**0.064**	**2**
			Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
			Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
			N of tested isolates	**22**	**22**	**22**	**22**	**22**	**22**	**22**	**22**
			MIC **N of resistant isolates**	**0**	**22**	**1**	**22**	**22**	**10**	**17**	**0**
Not Available	Not Available	Not Available	<=0.015							4	
			0.03							1	
			0.25							1	
			<=1								22
			1				1	2		1	
			<=2			2					
			2				2	3			
			<=4	22							
			4			11		7			
			>4				19				
			<=8						12		
			8			8		8		5	
			>8					2		10	
			>32		22						
			64			1			4		
			>64						6		

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**22**	**22**	**22**	**22**	**22**	**22**	**22**
				N of resistant isolates	**0**	**0**	**16**	**20**	**17**	**0**	**14**
Not Available	Not Available	Not Available	<=0.03			22					
			<=0.25							20	6
			<=0.5		18						
			0.5							2	2
			1		4						
			<=2						4		
			<=4				5				
			4						1		
			<=8					1			
			8				1				
			16				1	1			
			>16								14
			32						1		
			>32						16		
			>64				15				
			128					1			
			>512					19			

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

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON pnl2

Analytical Method: Dilution - sensititre

Country Of Origin:France

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF	0.125	0.25	0.25	8	0.5	0.5	0.06	0.5	0.125	16
			Lowest limit	0.064	0.25	0.064	0.5	0.25	0.125	0.015	0.125	0.03	0.5
			Highest limit	32	64	64	64	128	128	2	16	16	128
			N of tested isolates	1	1	1	1	1	1	1	1	1	1
			N of resistant isolates	1	1	0	0	1	0	0	0	0	0
Not Available	Not Available	Not Available	MIC										
			<=0.015							1			
			<=0.03									1	
			<=0.064			1							
			0.25						1		1		
			1	1									
			4		1								
			8				1						1
			64					1					

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

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON

Analytical Method: Dilution - sensititre

Country Of Origin:France

Sampling Details:N_A

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

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

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

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON pnl2

Analytical Method: Dilution - sensititre

Country Of Origin:Hungary

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF		0.125	0.25	0.25	8	0.5	0.5	0.06	0.5	0.125	16
			Lowest limit		0.064	0.25	0.064	0.5	0.25	0.125	0.015	0.125	0.03	0.5
			Highest limit		32	64	64	64	128	128	2	16	16	128
			N of tested isolates		3	3	3	3	3	3	3	3	3	3
			N of resistant isolates		2	3	1	1	3	1	0	0	0	0
Not Available	Not Available	Not Available	<=0.015								3			
			<=0.03										3	
			<=0.064				2							
			<=0.125									3		
			0.125		1									
			0.25							2				
			1						1					
			2		1									
			4				1	2	1	1				1
			8			2			1					2
			16		1									
			64					1						
			>64			1								

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

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON

Analytical Method: Dilution - sensititre

Country Of Origin:Hungary

Sampling Details:N_A

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

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

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh - chilled

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON pnl2

Analytical Method: Dilution - sensititre

Country Of Origin:Austria

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
				ECOFF	0.125	0.25	0.25	8	0.5	0.5	0.06	0.5	0.125	16
				Lowest limit	0.064	0.25	0.064	0.5	0.25	0.125	0.015	0.125	0.03	0.5
				Highest limit	32	64	64	64	128	128	2	16	16	128
				N of tested isolates	2	2	2	2	2	2	2	2	2	2
				N of resistant isolates	1	2	0	1	2	0	0	0	0	0
Not Available	Not Available	Not Available	<=0.015								1			
			<=0.03										2	
			0.03								1			
			<=0.064				1							
			<=0.125							1		1		
			0.125		1		1							
			0.25							1		1		
			0.5			1								
			1						1					
			2		1			1	1					
			8											1
			16					1						1
			64			1								

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh - chilled

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON

Analytical Method: Dilution - sensititre

Country Of Origin:Austria

Sampling Details:N_A

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

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

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh - chilled

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON pnl2

Analytical Method: Dilution - sensititre

Country Of Origin:Slovenia

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF	0.125	0.25	0.25	8	0.5	0.5	0.06	0.5	0.125	16
			Lowest limit	0.064	0.25	0.064	0.5	0.25	0.125	0.015	0.125	0.03	0.5
			Highest limit	32	64	64	64	128	128	2	16	16	128
			N of tested isolates	15	15	15	15	15	15	15	15	15	15
			N of resistant isolates	14	15	1	1	14	1	0	0	0	0
Not Available	Not Available	Not Available	MIC										
			<=0.015							15			
			<=0.03									15	
			<=0.064	1		13							
			<=0.125						5		9		
			0.125			1							
			<=0.25					1					
			0.25	1					9		6		
			1		2	1		3	1				
			2				3	11					
			4	5			8						7
			8	8	1		3						8
			16				1						
			32		8								
			64		4								

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh - chilled

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON

Analytical Method: Dilution - sensititre

Country Of Origin:Slovenia

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	8	8	16	0.25	0.5	16	0.064	2
				Lowest limit	4	1	2	0.25	0.25	8	0.015	1
				Highest limit	128	32	64	4	8	64	8	16
				N of tested isolates	15	15	15	15	15	15	15	15
				N of resistant isolates	0	15	0	15	14	1	6	0
Not Available	Not Available	Not Available	<=0.015								9	
			0.5					1	1			
			<=1									14
			1						6		1	
			<=2				2					
			2					1	8		1	1
			<=4	15								
			4				10				1	
			>4					13				
			<=8							13		
			8				3				3	
			16							1		
			>32			15						
			>64							1		

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**15**	**15**	**15**	**15**	**15**	**15**	**15**
				N of resistant isolates	**0**	**0**	**5**	**12**	**12**	**0**	**4**
Not Available	Not Available	Not Available		<=0.03		15					
				<=0.25						13	6
				<=0.5	13						
				0.5						2	5
				1	2						
				<=2					3		
				<=4			9				
				<=8				1			
				8			1				
				>16							4
				32				2			
				>32					12		
				>64			5				
				>512				12			

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh - chilled

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON pnl2

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF		0.125	0.25	0.25	8	0.5	0.5	0.06	0.5	0.125	16
			Lowest limit		0.064	0.25	0.064	0.5	0.25	0.125	0.015	0.125	0.03	0.5
			Highest limit		32	64	64	64	128	128	2	16	16	128
			N of tested isolates		9	9	9	9	9	9	9	9	9	9
			N of resistant isolates		6	9	3	3	9	3	0	0	0	0
Not Available	Not Available	Not Available	<=0.015								8			
			<=0.03										9	
			0.03								1			
			<=0.064		1		6							
			<=0.125							4		6		
			0.125		2									
			0.25		1					2		3		
			0.5		2									
			1			2	1		1					1
			2				1		1	1				
			4		2	2	1	5	1	1				5

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF	**0.125**	**0.25**	**0.25**	**8**	**0.5**	**0.5**	**0.06**	**0.5**	**0.125**	**16**
			Lowest limit	**0.064**	**0.25**	**0.064**	**0.5**	**0.25**	**0.125**	**0.015**	**0.125**	**0.03**	**0.5**
			Highest limit	**32**	**64**	**64**	**64**	**128**	**128**	**2**	**16**	**16**	**128**
			N of tested isolates	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
			N of resistant isolates	**6**	**9**	**3**	**3**	**9**	**3**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	**MIC**										
			8	1	2		1	4	1				3
			16					1					
			32		1		2	1					
			64		2								
			>64				1						

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh - chilled

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**8**	**8**	**16**	**0.25**	**0.5**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
				N of resistant isolates	**0**	**9**	**1**	**9**	**9**	**0**	**7**	**0**
Not Available	Not Available	Not Available	<=0.015								2	
			0.25								4	
			<=1									9
			1					1	1			
			2					1	1			
			<=4	9								
			4				4	4	2		1	
			>4					3				
			<=8							9		
			8				4		3		2	
			>8						2			
			>32			9						
			64				1					

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**9**	**9**	**9**	**9**	**9**	**9**	**9**
				N of resistant isolates	**1**	**0**	**4**	**4**	**4**	**0**	**4**
Not Available	Not Available	Not Available		<=0.03		8					
				0.064		1					
				<=0.25						9	2
				<=0.5	6						
				0.5							2
				1	1						1
				<=2					5		
				2	1						
				<=4			3				
				<=8				3			
				8			2				
				>16	1						4
				32				2			
				>32					4		
				64			1				
				>64			3				
				>512				4			

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh - chilled

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON pnl2

Analytical Method: Dilution - sensititre

Country Of Origin:Germany

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF	0.125	0.25	0.25	8	0.5	0.5	0.06	0.5	0.125	16
			Lowest limit	0.064	0.25	0.064	0.5	0.25	0.125	0.015	0.125	0.03	0.5
			Highest limit	32	64	64	64	128	128	2	16	16	128
			N of tested isolates	8	8	8	8	8	8	8	8	8	8
			N of resistant isolates	7	8	0	0	8	0	0	0	0	0
Not Available	Not Available	Not Available	MIC										
			<=0.015							8			
			<=0.03									8	
			<=0.064			8							
			<=0.125						4		4		
			0.125	1									
			0.25	3					4		4		
			0.5	4	1								
			1		2			1					
			2		4		1	2					
			4		1		6	1					4
			8				1						4
			16					4					

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh - chilled

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON

Analytical Method: Dilution - sensititre

Country Of Origin:Germany

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**8**	**8**	**16**	**0.25**	**0.5**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**
				N of resistant isolates	**0**	**8**	**0**	**8**	**8**	**0**	**6**	**0**
Not Available	Not Available	Not Available	<=0.015								2	
			0.125								1	
			0.25								1	
			0.5								3	
			<=1									8
			1					3	2			
			2					3	2		1	
			<=4	8								
			4				6	1				
			>4					1				
			<=8							8		
			8				2		2			
			>8						2			
			>32			8						

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**8**	**8**	**8**	**8**	**8**	**8**	**8**
				N of resistant isolates	**0**	**0**	**4**	**3**	**1**	**0**	**2**
Not Available	Not Available	Not Available		<=0.03		8					
				<=0.25						8	5
				<=0.5	7						
				0.5							1
				1	1						
				<=2					6		
				<=4			2				
				4					1		
				<=8				4			
				8			2				
				16				1			
				>16							2
				32			2				
				>32					1		
				64			1				
				>64			1				
				128				1			
				>512				2			

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh - chilled

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON pnl2

Analytical Method: Dilution - sensititre

Country Of Origin:Hungary

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF	0.125	0.25	0.25	8	0.5	0.5	0.06	0.5	0.125	16
			Lowest limit	0.064	0.25	0.064	0.5	0.25	0.125	0.015	0.125	0.03	0.5
			Highest limit	32	64	64	64	128	128	2	16	16	128
			N of tested isolates	20	20	20	20	20	20	20	20	20	20
			N of resistant isolates	19	20	2	2	20	2	0	0	0	0
Not Available	Not Available	Not Available	MIC										
			<=0.015							15			
			<=0.03									20	
			0.03							3			
			<=0.064			17							
			0.064							2			
			<=0.125						9		15		
			0.125	1		1							
			0.25	1					9		5		
			0.5	2									
			1			1		9					
			2	1	2		5	6	1				1
			4	9	1		10	1					10

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF		**0.125**	**0.25**	**0.25**	**8**	**0.5**	**0.5**	**0.06**	**0.5**	**0.125**	**16**
			Lowest limit		**0.064**	**0.25**	**0.064**	**0.5**	**0.25**	**0.125**	**0.015**	**0.125**	**0.03**	**0.5**
			Highest limit		**32**	**64**	**64**	**64**	**128**	**128**	**2**	**16**	**16**	**128**
			N of tested isolates		**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**
			N of resistant isolates		**19**	**20**	**2**	**2**	**20**	**2**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	8		6	1	1	3						8
			16			4		1	2	1				1
			32			8			1					
			64			4			1					
			>64					1						

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh - chilled

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON

Analytical Method: Dilution - sensititre

Country Of Origin:Hungary

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	8	8	16	0.25	0.5	16	0.064	2
				Lowest limit	4	1	2	0.25	0.25	8	0.015	1
				Highest limit	128	32	64	4	8	64	8	16
				N of tested isolates	20	20	20	20	20	20	20	20
Not Available	Not Available	Not Available		N of resistant isolates	0	20	0	20	20	1	19	0
			0.03								1	
			0.25								1	
			0.5								2	
			<=1									20
			1						7		2	
			<=2				1					
			2					2	9		1	
			<=4		19							
			4				15	1				
			>4					17				
			<=8							19		
			8		1		4		1		10	
			>8						3		3	
			>32			20						
			>64							1		

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**20**	**20**	**20**	**20**	**20**	**20**	**20**
Not Available	Not Available	Not Available		**N of resistant isolates**	**1**	**0**	**18**	**14**	**15**	**0**	**3**
			<=0.03			20					
			<=0.25							15	11
			<=0.5		16						
			0.5							5	4
			1		3						2
			<=2						5		
			<=4				2				
			<=8					2			
			16				1	4			
			>16		1						3
			>32						15		
			>64				17				
			>512					14			

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON pnl2

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF	**0.125**	**0.25**	**0.25**	**8**	**0.5**	**0.5**	**0.06**	**0.5**	**0.125**	**16**
			Lowest limit	**0.064**	**0.25**	**0.064**	**0.5**	**0.25**	**0.125**	**0.015**	**0.125**	**0.03**	**0.5**
			Highest limit	**32**	**64**	**64**	**64**	**128**	**128**	**2**	**16**	**16**	**128**
			N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
			N of resistant isolates	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	**MIC**										
			<=0.03									1	
			0.03							1			
			<=0.064			1							
			<=0.125								1		
			0.25						1				
			4					1					
			8	1			1						1
			32		1								

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	**8**	**8**	**16**	**0.25**	**0.5**	**16**	**0.064**	**2**
				Lowest limit	**4**	**1**	**2**	**0.25**	**0.25**	**8**	**0.015**	**1**
				Highest limit	**128**	**32**	**64**	**4**	**8**	**64**	**8**	**16**
				N of tested isolates	**229**	**229**	**229**	**229**	**229**	**229**	**229**	**229**
				N of resistant isolates	**0**	**34**	**0**	**1**	**1**	**1**	**78**	**0**
Not Available	Not Available	Not Available	<=0.015								125	
			0.03								25	
			0.064								1	
			0.125								10	
			<=0.25					228	219			
			0.25								58	
			0.5						9		3	
			<=1			2						229
			1								2	
			<=2				12					
			2			78			1			
			<=4		228							
			4			93	107				1	
			>4					1				
			<=8							222		
			8		1	22	93				4	
			16				17			6		
			>32			34						
			64							1		

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**229**	**229**	**229**	**229**	**229**	**229**	**229**
Not Available	Not Available	Not Available		**N of resistant isolates**	**4**	**0**	**77**	**37**	**20**	**0**	**23**
				<=0.03		229					
				<=0.25						219	137
				<=0.5	192						
				0.5						10	61
				1	32						7
				<=2					203		
				2	1						1
				<=4			152				
				4	1				6		
				<=8				80			
				8	1						
				16	1		2	52			
				>16	1						23
				32			1	34	3		
				>32					17		
				64			28	26			
				>64			46				
				128				3			
				256				1			
				512				1			
				>512				32			

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON pnl2

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF	0.125	0.25	0.25	8	0.5	0.5	0.06	0.5	0.125	16
			Lowest limit	0.064	0.25	0.064	0.5	0.25	0.125	0.015	0.125	0.03	0.5
			Highest limit	32	64	64	64	128	128	2	16	16	128
			N of tested isolates	22	22	22	22	22	22	22	22	22	22
			N of resistant isolates	12	22	14	13	22	13	0	0	0	0
Not Available	Not Available	Not Available	MIC										
			<=0.015							13			
			<=0.03									22	
			0.03							8			
			<=0.064	3		7							
			0.064							1			
			<=0.125						4		13		
			0.125	7		1							
			0.25	8					4		9		
			0.5		2	3			1				
			1	2	8	5	1	1	3				
			2		1			7	3				

ESBL Genes	AMPC Genes	CARBA Genes	AM substance	Cefepime	Cefotaxim	Cefotaxime + Clavulanic acid	Cefoxitin	Ceftazidim	Ceftazidime + Clavulanic acid	Ertapenem	Imipenem	Meropenem	Temocillin
			ECOFF	**0.125**	**0.25**	**0.25**	**8**	**0.5**	**0.5**	**0.06**	**0.5**	**0.125**	**16**
			Lowest limit	**0.064**	**0.25**	**0.064**	**0.5**	**0.25**	**0.125**	**0.015**	**0.125**	**0.03**	**0.5**
			Highest limit	**32**	**64**	**64**	**64**	**128**	**128**	**2**	**16**	**16**	**128**
			N of tested isolates	**22**	**22**	**22**	**22**	**22**	**22**	**22**	**22**	**22**	**22**
			N of resistant isolates	**12**	**22**	**14**	**13**	**22**	**13**	**0**	**0**	**0**	**0**
Not Available	Not Available	Not Available	**MIC**										
			4	2	3	1	5	4	2				14
			8		5	5	3	2	4				6
			16		2		4	7	1				2
			32		1		3	1					
			64				6						

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON

Analytical Method: Dilution - sensititre

Country Of Origin:Switzerland

Sampling Details:N_A

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Amikacin	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin
				ECOFF	8	8	16	0.25	0.5	16	0.064	2
				Lowest limit	4	1	2	0.25	0.25	8	0.015	1
				Highest limit	128	32	64	4	8	64	8	16
				N of tested isolates	22	22	22	22	22	22	22	22
Not Available	Not Available	Not Available		N of resistant isolates	0	22	0	22	22	1	15	0
			<=0.015								5	
			0.03								2	
			0.125								2	
			0.25								4	
			0.5								1	
			<=1									22
			1					8	4		5	
			<=2				4					
			2					4	4		1	
			<=4		22							
			4				10	2	4			
			>4					8				
			<=8							20		
			8				7		4			
			>8						6		2	
			16				1			1		
			32			1						
			>32			21						
			>64							1		

ESBL Genes	AMPC Genes	CARBA Genes	MIC	AM substance	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
				ECOFF	**2**	**0.125**	**8**	**64**	**8**	**0.5**	**2**
				Lowest limit	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
				Highest limit	**16**	**16**	**64**	**512**	**32**	**8**	**16**
				N of tested isolates	**22**	**22**	**22**	**22**	**22**	**22**	**22**
				N of resistant isolates	**1**	**0**	**11**	**6**	**1**	**0**	**4**
Not Available	Not Available	Not Available		<=0.03		22					
				<=0.25						21	12
				<=0.5	15						
				0.5						1	5
				1	6						1
				<=2					20		
				<=4			10				
				4					1		
				<=8				6			
				8			1				
				16			1	6			
				>16	1						4
				32				3			
				>32					1		
				64			1	1			
				>64			9				
				128				1			
				>512				5			

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

Programme Code	Matrix Detailed	Zoonotic Agent Detailed	Sampling Strategy	Sampling Stage	Sampling Details	Sampling Context	Sampler	Sample Type	Sampling Unit Type	Sample Origin	Comment	Total Units Tested	Total Units Positive
CARBA MON	Gallus gallus (fowl) - broilers	Escherichia coli, non-pathogenic, unspecified	Objective sampling	Slaughterhouse	N_A	Monitoring - EFSA specifications	Official sampling	animal sample - caecum	slaughter animal batch	Switzerland	N_A	510	0
	Meat from broilers (Gallus gallus) - fresh - chilled	Escherichia coli, non-pathogenic, unspecified	Objective sampling	Retail	N_A	Monitoring - EFSA specifications	Official sampling	food sample - meat	single (food/feed)	Austria	N_A	3	0
										France	N_A	14	0
										Germany	N_A	23	0
										Hungary	N_A	32	0
										Slovenia	N_A	23	0
										Switzerland	N_A	212	0
	Meat from turkey - fresh - chilled	Escherichia coli, non-pathogenic, unspecified	Objective sampling	Retail	N_A	Monitoring - EFSA specifications	Official sampling	food sample - meat	single (food/feed)	France	N_A	16	0
										Germany	N_A	52	0
										Hungary	N_A	33	0
										Switzerland	N_A	38	0

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

Latest Transmission set

Table Name	Last submitted dataset transmission date
Antimicrobial Resistance	17-Aug-2023
Esbl	14-Jul-2023
Animal Population	14-Jul-2023
Disease Status	14-Jul-2023
Food Borne Outbreaks	14-Jul-2023
Prevalence	14-Jul-2023

EUROPEAN FOOD SAFETY AUTHORITY ZOONOSES MONITORING

Switzerland

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

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

IN 2022

Switzerland - 2022 Report on trends and sources of zoonoses

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 Switzerland during the year 2022.

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

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

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

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

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ANIMAL POPULATION TABLES

Table Susceptible animal population

Animal species	Category of animals	Population		
		holding	animal	slaughter animal (heads)
Cattle (bovine animals)	Cattle (bovine animals)	32,581	1,525,270	582,483
Gallus gallus (fowl)	Gallus gallus (fowl) - breeding flocks, unspecified	1,980	308,228	
	Gallus gallus (fowl) - broilers	1,116	7,776,969	87,454,762
	Gallus gallus (fowl) - laying hens	25,900	4,807,885	
Pigs	Pigs	5,467	1,372,772	2,551,970
Small ruminants	Goats	6,559	82,313	44,096
	Sheep	7,969	355,893	230,402
Solipeds, domestic	Solipeds, domestic	19,681	112,184	1,162
Turkeys	Turkeys - fattening flocks	398	80,417	

DISEASE STATUS TABLES

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

Region	Zoonotic agent	Number of herds with status officially free	Number of infected herds	Total number of herds
SWITZERLAND	Brucella	32,581	0	32,581

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

Region	Zoonotic agent	Number of herds with status officially free	Number of infected herds	Total number of herds
SWITZERLAND	Brucella	14,528	0	14,528

DISEASE STATUS TABLES

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

Region	Zoonotic agent	Number of herds with status officially free	Number of infected herds	Total number of herds
SWITZERLAND	Mycobacterium bovis	32,581	0	32,581

PREVALENCE TABLES

Table Brucella:BRUCELLA in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Alpacas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Rose Bengal plate test (RBT)/Buffered Brucella antigen test (BBAT)	animal	2	0	Brucella	0
	Camels - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Rose Bengal plate test (RBT)/Buffered Brucella antigen test (BBAT)	animal	4	0	Brucella	0
	Deer - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Rose Bengal plate test (RBT)/Buffered Brucella antigen test (BBAT)	animal	3	0	Brucella	0
	Llamas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Rose Bengal plate test (RBT)/Buffered Brucella antigen test (BBAT)	animal	4	0	Brucella	0
			Real-Time (qualitative or quantitative)					
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Rose Bengal plate test (RBT)/Buffered Brucella antigen test (BBAT)	animal	12	0	Brucella	0
	Wild boars - farmed - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	PCR	animal	2	1	Brucella suis	1

Table Campylobacter:CAMPYLOBACTER in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Budgerigars - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Campylobacter	0
	Buffalos - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Campylobacter	0

Camels - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Campylobacter	0
Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological special tests	animal	480	13	Campylobacter jejuni	4
						Campylobacter upsaliensis	1
						Campylobacter, unspecified sp.	8
Cattle (bovine animals) - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological special tests	animal	46	13	Campylobacter coli	1
						Campylobacter fetus	1
						Campylobacter hyointestinalis	2
						Campylobacter jejuni	7
						Campylobacter, unspecified sp.	2
Crows - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	1	Campylobacter jejuni	1
Deer - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	1	Campylobacter, unspecified sp.	1
Deer - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	27	12	Campylobacter hyointestinalis	1
						Campylobacter jejuni	11
Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological special tests	animal	972	65	Campylobacter coli	1
						Campylobacter jejuni	12
						Campylobacter upsaliensis	9
						Campylobacter, unspecified sp.	43
Ducks - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Campylobacter	0
Ferrets - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Campylobacter	0
Gallus gallus (fowl) - broilers - Slaughterhouse - Switzerland - animal sample - caecum - Monitoring - Official sampling - Objective sampling	N_A	Detection method of microorganisms	herd/flock	800	266	Campylobacter coli	34
						Campylobacter jejuni	204
						Campylobacter, unspecified sp.	28
Goats - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Campylobacter	0
Guinea pigs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	8	1	Campylobacter jejuni	1
Hedgehogs - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Campylobacter	0
Kangaroos - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Campylobacter	0
Parrots - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	0	Campylobacter	0
Pigeons - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	0	Campylobacter	0
Pigs - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	1	Campylobacter, unspecified sp.	1
Rabbits - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	9	0	Campylobacter	0
Reptiles - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Campylobacter	0
Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Campylobacter	0
Solipeds, domestic - donkeys - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	1	Campylobacter, unspecified sp.	1
Solipeds, domestic - horses - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	86	1	Campylobacter, unspecified sp.	1

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
	Turtles - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Campylobacter	0
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	138	13	Campylobacter coli	1
							Campylobacter hyointestinalis	1
							Campylobacter jejuni	11

SWITZERLAND

Table Campylobacter:CAMPYLOBACTER in food

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	Method	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Meat from broilers (Gallus gallus) - carcase - chilled - Slaughterhouse - Switzerland - food sample - neck skin - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	single (food/feed)	1	Gram	N_A	ISO 10272-2:2017 Campylobacter		76	Campylobacter coli	6
									Campylobacter jejuni	70
			10	Gram	N_A	ISO 10272-2:2017 Campylobacter	260	70	Campylobacter, unspecified sp.	70
			25	Gram	N_A	ISO 10272-2:2017 Campylobacter	395	141	Campylobacter coli	20
									Campylobacter jejuni	67
									Campylobacter, unspecified sp.	54
	Meat from broilers (Gallus gallus) - fresh - skinned - Cutting plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	28	10	Campylobacter, unspecified sp.	10
	Meat from broilers (Gallus gallus) - fresh - skinned - Processing plant Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 102721:2017 Campylobacter	15	0	Campylobacter	0
		single (food/feed)	10	Gram	N_A	ISO 10272-1:2017 Campylobacter	5	1	Campylobacter, unspecified sp.	1
	Meat from broilers (Gallus gallus) - fresh - with skin - Processing plant Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	31	0	Campylobacter	0
		single (food/feed)	10	Gram	N_A	ISO 10272-1:2017 Campylobacter	60	9	Campylobacter jejuni	1
									Campylobacter, unspecified sp.	8
	Meat from broilers (Gallus gallus) - fresh - with skin - Slaughterhouse - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	19	12	Campylobacter, unspecified sp.	12
	Meat from broilers (Gallus gallus) - meat preparation - Processing plant Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 102721:2017 Campylobacter	7	0	Campylobacter	0
		single (food/feed)	10	Gram	N_A	ISO 102721:2017 Campylobacter	31	0	Campylobacter	0
			25	Gram	N_A	ISO 10272-1:2017 Campylobacter	27	3	Campylobacter, unspecified sp.	3
	Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	64	0	Campylobacter	0
	Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) Cutting plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 10272-1:2017 Campylobacter	17	0	Campylobacter	0
	Meat from turkey - fresh - skinned - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	10	Gram	N_A	ISO 10272-1:2017 Campylobacter	235	0	Campylobacter	0

Table COXIELLA in animal

Sampling origin	Sample type - Sampling context - Sampler - Sampling strategy unit	Sampling Details	Method	Total tested	Sampling positive		units herds	units Zoonoses	affected positive	Total	Total N of units	N of clinical Area of Sampling	Matrix - Sampling stage -	
SWITZERLAND	Alpacas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling				animal	N_A			Real-Time PCR (qualitative or quantitative)	1	0		Coxiella	0
	Cattle (bovine animals) - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling				animal	N_A			Staining	3322	350		Coxiella burnetii	350
	Goats - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling				animal	N_A			Staining	148	11		Coxiella burnetii	11
	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling				animal	N_A			Staining	234	18		Coxiella burnetii	18
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling				animal	N_A			Staining	1	0		Coxiella	0

Table Echinococcus:ECHINOCOCCUS in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Alpine chamois - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Echinococcus	0
	Beavers - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	2	2	Echinococcus multilocularis	2
	Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	5	1	Echinococcus multilocularis	1
	Deer - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	2	0	Echinococcus	0
	Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	39	15	Echinococcus multilocularis	15
	Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	4	3	Echinococcus multilocularis	3
	Kangaroos - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Magnetic stirrer method for pooled sample digestion	animal	1	1	Echinococcus multilocularis	1
	Monkeys - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Echinococcus	0
	Pigs - Slaughterhouse - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	7	4	Echinococcus multilocularis	4
	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	3	0	Echinococcus	0
	Solipeds, domestic - donkeys - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	2	0	Echinococcus	0
	Wild boars - farmed - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	5	5	Echinococcus multilocularis	5
	Wolves - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	5	1	Echinococcus, unspecified sp.	1

Table Francisella:FRANCISELLA in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Beavers - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Detection method of microorganisms	animal	1	0	Francisella	0
	Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Detection method of microorganisms	animal	3	0	Francisella	0
	Hares - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Detection method of microorganisms	animal	14	8	Francisella tularensis	8
	Hares - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling Suspect sampling	N_A	Detection method of microorganisms	animal	1	0	Francisella	0
	Monkeys - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Detection method of microorganisms	animal	2	0	Francisella	0
	Rabbits - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Francisella	0

Table Listeria:LISTERIA in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	2	Listeria monocytogenes	2
	Cattle (bovine animals) - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	9	5	Listeria monocytogenes	5
	Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	0	Listeria	0
	Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	4	0	Listeria	0
	Goats - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Histology	animal	5	1	Listeria monocytogenes	1
	Pigs - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	30	0	Listeria	0
	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	21	9	Listeria monocytogenes	9
	Solipeds, domestic - donkeys - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Listeria	0
	Solipeds, domestic - horses - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	4	0	Listeria	0
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	1	Listeria monocytogenes	1

Table Listeria: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
SWITZERLAND	Cheeses, made from unspecified milk or other animal milk - unspecified - Unspecified - Not Available - Not Available - Monitoring - Industry sampling - Selective sampling	single (food/feed)	25	Gram	N_A	1128	4	detection	Listeria monocytogenes	1,128	4
							25	detection	Listeria spp., unspecified	1,128	25

Table Lyssavirus:LYSSAVIRUS in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Badgers - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	1	0	Lyssavirus	0
	Bats - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	27	1	European bat lyssavirus 2	1
	Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	23	0	Lyssavirus	0
	Cattle (bovine animals) - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	1	0	Lyssavirus	0
	Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	32	0	Lyssavirus	0
	Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	10	0	Lyssavirus	0
	Martens - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	1	0	Lyssavirus	0
	Wolves - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence method	animal	1	0	Lyssavirus	0

Table Mycobacterium:MYCOBACTERIUM in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Alpacas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Mycobacterium	0
	Badgers - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	2	0	Mycobacterium	0
	Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	7	2	Mycobacterium microti	2
	Deer - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Visual inspection	animal	187	0	Mycobacterium	0
	Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	7	0	Mycobacterium	0
	Llamas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Mycobacterium	0
	Pigs - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Mycobacterium	0
	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	2	0	Mycobacterium	0
	Steinbock - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Mycobacterium	0
	Wild boars - farmed - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Mycobacterium	0
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	19	0	Mycobacterium	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
SWITZERLAND	Alpacas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	11	0	Salmonella	0
	Birds - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	1	Salmonella Hessarek	1

Bison - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
Budgerigars - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	4	0	Salmonella	0
Buffalos - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	2	0	Salmonella	0
Camels - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
Canary - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industrysampling - Suspect sampling Salmonella	animal	0	N_A	N_A	Microbiological standard tests	3	0		
Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	491	15	Salmonella Hadar	1
								Salmonella Mishmarhaemek	1
								Salmonella Napoli	1
								Salmonella spp., unspecified	9
								Salmonella Typhimurium, monophasic	3
Cattle (bovine animals) - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological special tests	1792	215	Salmonella Abony	2
								Salmonella Dublin	6
								Salmonella Enteritidis	18
								Salmonella Mikawasima	2
								Salmonella Reading	1
								Salmonella spp., unspecified	169
								Salmonella Typhimurium	17
Crows - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	5	0	Salmonella	0
Deer - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling -Suspect sampling Salmonella	animal	0	N_A	N_A	Microbiological standard tests	16	0		
Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	978	33	Salmonella Agona	1
								Salmonella Enteritidis	2
								Salmonella Paratyphi B	1
								Salmonella Schwarzengrund	1
								Salmonella spp., unspecified	23
								Salmonella Typhimurium	4
								Salmonella Veneziana	1
Ducks - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	6	0	Salmonella	0
Ferrets - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	5	3	Salmonella Enteritidis	3
Gallus gallus (fowl) - breeding flocks for broiler production line - adult - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	73	Y	N_A	ISO 6579:2002 Salmonella	68	0	Salmonella	0
			N	N_A	ISO 6579:2002 Salmonella	68	1	Salmonella Sanga	1
Gallus gallus (fowl) - broilers - before slaughter - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Industry sampling - Census	herd/flock	4562	N	N_A	ISO 6579:2002 Salmonella	577	12	Salmonella 13,23:i:-	1
								Salmonella Agona	1
								Salmonella Coeln	1
								Salmonella Enteritidis	3
								Salmonella Infantis	3
								Salmonella Livingstone	1
		N of flocks					**Total**		

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	under control programme	Target verification	Sampling Details	Method	Total units tested	units positive	Zoonoses	N of units positive
SWITZERLAND	Gallus gallus (fowl) - broilers - before slaughter - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Industry sampling - Census	herd/flock	4562	N	N_A	ISO 6579:2002 Salmonella	577	12	Salmonella Tennessee	1
									Salmonella Welikade	1
	Gallus gallus (fowl) - broilers - before slaughter - Farm - Switzerland - environmental sample - boot swabs - programmes - Official and industry sampling - Census	herd/flock	4562	Y	N_A	ISO 6579:2002 Salmonella	633	0	0 Control and eradication	
	Gallus gallus (fowl) - broilers - before slaughter - Farm - Switzerland - environmental sample - boot swabs Control and eradication programmes - Official sampling - Census	herd/flock	4562	N	N_A	ISO 6579:2002 Salmonella	56	1	Salmonella 13,23:i:-	1
	Gallus gallus (fowl) - laying hens - adult - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	964	Y	N_A	ISO 6579:2002 Salmonella	804	2	Salmonella Enteritidis	1
									Salmonella Typhimurium	1
				N	N_A	ISO 6579:2002 Salmonella	804	1	Salmonella Agona	1
									Salmonella Enteritidis	1
									Salmonella Mbandaka	1
									Salmonella Stourbridge	1
									Salmonella Typhimurium	1
	Gallus gallus (fowl) - parent breeding flocks for egg production line - adult - Farm - Switzerland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	123	Y	N_A	ISO 6579:2002 Salmonella	71	0	Salmonella	0
	Goats - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	52	2	Salmonella enterica, subspecies enterica	1
									Salmonella Napoli	1
	Guinea pigs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	14	1	Salmonella Enteritidis	1
	Hedgehogs - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	3	0	Salmonella	0
	Kangaroos - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
	Llamas - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	2	0	Salmonella	0
	Oscine birds - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	6	0	Salmonella	0
	Other ruminants - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	2	0	Salmonella	0
	Parrots - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	6	0	Salmonella	0
	Peafowl - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
	Pigeons - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	13	3	Salmonella enterica, subspecies enterica	1
									Salmonella spp., unspecified	1
									Salmonella Typhimurium	1
	Pigeons - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	2	0	Salmonella	0
	Pigs - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Slide agglutination according White Kauffmann Le Minor Scheme	81	3	Salmonella Rissen	1
									Salmonella spp., unspecified	2
	Quails - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal		N_A	N_A	Microbiological standard tests	11	4	Salmonella Agona	1
									Salmonella Nigeria	2

								Salmonella spp., unspecified	1
	Rabbits - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	N_A	N_A	Microbiological standard tests	20	0	Salmonella	0
	Reptiles - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	N_A	N_A	Microbiological	9	6	Salmonella enterica, subsp. houtenae	1
								Salmonella enterica, subspecies diarizonae	1
								Salmonella Kisarawe	1
								Salmonella Orientalis	1
								Salmonella spp., unspecified	2

standard tests

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	N of flocks under control Target programme verification	Sampling Details	Method	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	N_A	N_A	Microbiological special tests	127	22	Salmonella Abortusovis	1
								Salmonella enterica, subspecies diarizonae	14
								Salmonella enterica, subspecies enterica	5
								Salmonella spp., unspecified	2
	Snakes - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	N_A	N_A	Microbiological standard tests	2	0	Salmonella	0
	Solipeds, domestic - donkeys - Unspecified - Not Available - animal sample - Clinical investigations Industry sampling - Suspect sampling	animal	N_A	N_A	Microbiological standard tests	3	1	Salmonella Typhimurium	1
	Solipeds, domestic - horses - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	N_A	N_A	Microbiological standard tests	289	17	Salmonella enterica, subspecies enterica	5
								Salmonella Enteritidis	3
								Salmonella spp., unspecified	1
								Salmonella Typhimurium	7
								Salmonella Veneziana	1
	Swans - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
	Turkeys - fattening flocks - before slaughter - Farm - Switzerland - environmental sample - boot swabs Control and eradication programmes - Industry sampling - Census	herd/flock	98 N	N_A	ISO 6579:2002 Salmonella	34	9	Salmonella Albany	9
	Turkeys - fattening flocks - before slaughter - Farm - Switzerland - environmental sample - boot swabs Control and eradication programmes - Official and industry sampling - Census	herd/flock	98 Y	N_A	ISO 6579:2002 Salmonella	37	0	Salmonella	0
	Turkeys - fattening flocks - before slaughter - Farm - Switzerland - environmental sample - boot swabs Control and eradication programmes - Official sampling - Census	herd/flock	98 N	N_A	ISO 6579:2002 Salmonella	3	0	Salmonella	0
	Turtles - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	N_A	N_A	Microbiological standard tests	7	0	Salmonella	0
	Wild boars - farmed - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	N_A	N_A	Microbiological standard tests	1	1	Salmonella enterica, subspecies enterica	1
	Wolves - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	N_A	N_A	Microbiological standard tests	1	0	Salmonella	0
	Zoo animals, all - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	animal	N_A	N_A	Microbiological standard tests	308	35	Salmonella Abaetetuba	1
								Salmonella Adelaide	1

Salmonella Bukavu	3
Salmonella Chester	1
Salmonella enterica, subsp. houtenae	1
Salmonella enterica, subspecies diarizonae	11
Salmonella enterica, subspecies enterica	7
Salmonella enterica, subspecies salamae	2
Salmonella Enteritidis	2
Salmonella Fresno	1
Salmonella IV 43:z4,z23:-	1
Salmonella Nigeria	1
Salmonella Senftenberg	2
Salmonella Tennessee	1

Table Salmonella:SALMONELLA in food

unit	weight	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - weight unit	Sampling Details	Method	Sample tested	units	Zoonoses	Sampling positive	Sample positive	Sample units	Total N of units	Total Area of Sampling	Sampler - Sampling strategy		
SWITZERLAND		Meat from bovine animals - carcase - Slaughterhouse - Switzerland - food carcase swabs - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	(food/feed)	single	400	centimetre		ISO 6579-1:2017 Salmonella	1125	Square	1		Salmonella spp., unspecified	1 sample	-
		Meat from broilers (Gallus gallus) - carcase - chilled - Slaughterhouse Switzerland - food sample - neck skin - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	single (food/feed)	25	Gram			ISO 65791:2017 Salmonella	761	3		Salmonella Enteritidis	2	
													Salmonella Tennessee	1	
		Meat from broilers (Gallus gallus) - fresh - skinned - Cutting plant Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram			ISO 6579-1:2017 Salmonella	200	0		Salmonella	0	
		Meat from broilers (Gallus gallus) - fresh - skinned - Processing plant Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram			ISO 65791:2017 Salmonella	15	0		Salmonella	0	
			single (food/feed)	25	Gram			ISO 6579-1:2017 Salmonella	49	0		Salmonella	0	
		Meat from broilers (Gallus gallus) - fresh - with skin - Cutting plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram			ISO 6579-1:2017 Salmonella	156	0		Salmonella	0	
		Meat from broilers (Gallus gallus) - fresh - with skin - Processing plant Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram			ISO 6579-1:2017 Salmonella	31	0		Salmonella	0	
			single (food/feed)	25	Gram			ISO 6579-1:2017 Salmonella	39	1		Salmonella Enteritidis	1	
		Meat from broilers (Gallus gallus) - fresh - with skin - Slaughterhouse Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram			ISO 6579-1:2017 Salmonella	14	0		Salmonella	0	
			batch (food/feed)	25	Gram			ISO 65791:2017 Salmonella	7	0		Salmonella	0	

	Meat from broilers (Gallus gallus) - meat preparation - Processing plant Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	321	0	Salmonella	0
	Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	batch (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	41	0	Salmonella	0
	Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) Cutting plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	277	0	Salmonella	0
	Meat from broilers (Gallus gallus) - minced meat - Processing plant Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	181	0	Salmonella	0
	Meat from pig - carcase - Slaughterhouse - Switzerland - food sample carcase swabs - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	single (food/feed)	400	Square centimetre	N_A	ISO 6579-1:2017 Salmonella	1190	0	Salmonella	0
	Meat from sheep - carcase - Slaughterhouse - Switzerland - food sample carcase swabs - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	single (food/feed)	400	Square centimetre	N_A	ISO 6579-1:2017 Salmonella	250	0	Salmonella	0
	Meat from turkey - carcase - chilled - Slaughterhouse - Switzerland - food sample - neck skin - Surveillance - based on Regulation 2073 - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	120	0	Salmonella	0
	Meat from turkey - fresh - skinned - Cutting plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	160	2	Salmonella Albany	1
									Salmonella spp., unspecified	1
	Meat from turkey - fresh - with skin - Processing plant - Switzerland - food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	2	0	Salmonella	0

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	Method	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Meat from turkey - meat preparation - Processing plant - Switzerland food sample - Monitoring - HACCP and own check - Objective sampling	single (food/feed)	25	Gram	N_A	ISO 6579-1:2017 Salmonella	15	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
SWITZERLAND	Compound feedingstuffs for cattle - final product - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Compound feedingstuffs for cattle - final product - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	152	0	Salmonella	0
	Compound feedingstuffs for fish - final product - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	2	0	Salmonella	0
	Compound feedingstuffs for fish - final product - Feed mill - Switzerland feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	4	0	Salmonella	0
	Compound feedingstuffs for horses - final product - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Compound feedingstuffs for pigs - final product - Feed mill - Switzerland feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	14	0	Salmonella	0
	Compound feedingstuffs for poultry (non specified) - final product - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	52	0	Salmonella	0
	Feed material of cereal grain origin - maize derived - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	7	0	Salmonella	0
	Feed material of cereal grain origin - maize derived - Feed mill - Non European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	9	0	Salmonella	0
	Feed material of cereal grain origin - maize derived - Feed mill Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Feed material of oil seed or fruit origin - other oil seeds derived - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Feed material of oil seed or fruit origin - other oil seeds derived - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	2	0	Salmonella	0
	Feed material of oil seed or fruit origin - rape seed derived - Feed mill European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	18	0	Salmonella	0
	Feed material of oil seed or fruit origin - rape seed derived - Feed mill Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	9	0	Salmonella	0
	Feed material of oil seed or fruit origin - rape seed derived - Feed mill Unknown - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Feed material of oil seed or fruit origin - soya (bean) derived - Feed mill European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	30	0	Salmonella	0

	Feed material of oil seed or fruit origin - soya (bean) derived - Feed mill Non European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	4	0	Salmonella	0
	Feed material of oil seed or fruit origin - soya (bean) derived - Feed mill Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	2	0	Salmonella	0
	Feed material of oil seed or fruit origin - soya (bean) derived - Feed mill Unknown - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	16	0	Salmonella	0

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Sampling Details	Method	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Feed material of oil seed or fruit origin - sunflower seed derived - Feed mill - European Union - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	7	0	Salmonella	0
	Feed material of oil seed or fruit origin - sunflower seed derived - Feed mill - Switzerland - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	2	0	Salmonella	0
	Feed material of oil seed or fruit origin - sunflower seed derived - Feed mill - Unknown - feed sample - Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	1	0	Salmonella	0
	Other feed material - Feed mill - European Union - feed sample Monitoring - Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	2	0	Salmonella	0
	Other feed material - Feed mill - Switzerland - feed sample - Monitoring Official sampling - Selective sampling	single (food/feed)	25	Gram	N_A	ISO 6579:2002 Salmonella	3	0	Salmonella	0

Table Toxoplasma:TOXOPLASMA in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Alpacas - farmed - Veterinary activities - Not Available - animal sample - brain - Clinical investigations Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	3	0	Toxoplasma gondii	0
	Badgers - wild - Natural habitat - Not Available - animal sample - brain - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Beavers - wild - Natural habitat - Not Available - animal sample - organ/tissue - Clinical investigations Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	2	1	Toxoplasma gondii	1
	Cats - pet animals - Veterinary activities - Not Available - animal sample - blood - Clinical investigations Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	310	96	Toxoplasma gondii	96
	Cats - pet animals - Veterinary activities - Not Available - animal sample - faeces - Clinical investigations Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	7	0	Toxoplasma gondii	0
	Cats - pet animals - Veterinary activities - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	3	2	Toxoplasma gondii	2
	Cattle (bovine animals) - Veterinary activities - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Dogs - pet animals - Veterinary activities - Not Available - animal sample - blood - Clinical investigations Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	92	20	Toxoplasma gondii	20
	Dogs - pet animals - Veterinary activities - Not Available - animal sample - faeces - Clinical investigations Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Dogs - pet animals - Veterinary activities - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	6	1	Toxoplasma gondii	1
	Goats - Veterinary activities - Not Available - animal sample - brain - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	2	0	Toxoplasma gondii	0
	Goats - Veterinary activities - Not Available - animal sample - foetus/stillbirth - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Guinea pigs - pet animals - Veterinary activities - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Martens - wild - Natural habitat - Not Available - animal sample - organ/tissue - Clinical investigations Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Monkeys - zoo animal - Zoo - Not Available - animal sample - blood - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0
	Monkeys - zoo animal - Zoo - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	2	1	Toxoplasma gondii	1
	Other carnivores - zoo animals - Zoo - Not Available - animal sample - blood - Clinical investigations Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	8	5	Toxoplasma gondii	5

Other ruminants - zoo animals - Zoo - Not Available - animal sample - blood - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	1	Toxoplasma gondii	1
Other ruminants - zoo animals - Zoo - Not Available - animal sample - organ/tissue - Clinical investigations Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	1	Toxoplasma gondii	1
Sheep - Veterinary activities - Not Available - animal sample - blood - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Zoo animals, all - Zoo - Not Available - animal sample - organ/tissue - Clinical investigations - Industry sampling - Suspect sampling	N_A	Immunofluorescence assay tests (IFA)	animal	1	0	Toxoplasma gondii	0

Table Trichinella:TRICHINELLA in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Badgers - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Magnetic stirrer method for pooled sample digestion	animal	13	0	Trichinella	0
	Cats - stray cats - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Magnetic stirrer method for pooled sample digestion	animal	1	0	Trichinella	0
	Deer - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Magnetic stirrer method for pooled sample digestion	animal	2	0	Trichinella	0
	Foxes - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Magnetic stirrer method for pooled sample digestion	animal	2	0	Trichinella	0
	Lynx - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	22	6	Trichinella britovi	6
	Pigs - breeding animals - others - not raised under controlled housing conditions - Slaughterhouse Switzerland - animal sample - Surveillance - Official sampling - Census	not raised under controlled housing conditions as requirements in Regulation (EU) No 216/2014 are not fully met	Magnetic stirrer method for pooled sample digestion	animal	31096	0	Trichinella	0
	Pigs - fattening pigs - others - not raised under controlled housing conditions - Slaughterhouse - Switzerland animal sample - Surveillance - Official sampling - Census	not raised under controlled housing conditions as requirements in Regulation (EU) No 216/2014 are not fully met	Magnetic stirrer method for pooled sample digestion	animal	2360922	0	Trichinella	0
	Solipeds, domestic - horses - Slaughterhouse - Switzerland - animal sample - Surveillance - Official sampling - Census	N_A	Magnetic stirrer method for pooled sample digestion	animal	906	0	Trichinella	0
	Wild boars - wild - Hunting - Switzerland - animal sample - Unspecified - Not applicable - Census	N_A	Magnetic stirrer method for pooled sample digestion	animal	11582	0	Trichinella	0
	Wolves - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	35	7	Trichinella britovi	7

Table Virus:VIRUS in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive

SWITZERLAND	Solipeds, domestic - donkeys - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	1	0	Flavivirus	0
	Solipeds, domestic - horses - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Real-Time PCR (qualitative or quantitative)	animal	17	0	Flavivirus	0

Table Yersinia:YERSINIA in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Antelopes - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Yersinia	0
	Bats - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Bats - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Yersinia	0
	Bears - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Beavers - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Beavers - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Birds - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	0	Yersinia	0
	Birds - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	66	0	Yersinia	0
	Budgerigars - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Camels - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Camels - zoo animals - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	4	0	Yersinia	0
	Canary - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	1	Yersinia pseudotuberculosis	1
	Cats - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	336	1	Yersinia enterocolitica - biotype 4	1
	Cattle (bovine animals) - unspecified - Unspecified - Not Available - animal sample - Clinical investigations Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	15	0	Yersinia	0
	Deer - farmed - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	12	0	Yersinia	0
	Dogs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	744	13	Yersinia pseudotuberculosis	1
							Yersinia, unspecified sp.	12
	Elephants - zoo animals - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Ferrets - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Goats - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	4	0	Yersinia	0
	Guinea pigs - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	9	0	Yersinia	0
	Hares - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	1	Yersinia pseudotuberculosis	1
	Hedgehogs - wild - Natural habitat - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Yersinia	0

Insectivores - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	8	0	Yersinia	0
Kangaroos - zoo animal - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
Mice - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	8	0	Yersinia	0
Monkeys - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	31	1	Yersinia pseudotuberculosis	1
Other carnivores - zoo animals - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	12	0	Yersinia	0
Other ruminants - zoo animals - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	11	0	Yersinia	0
Otter - zoo animals - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling Suspect sampling	N_A	Microbiological standard tests	animal	2	0	Yersinia	0

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling Details	Method	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
SWITZERLAND	Parrots - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	5	0	Yersinia	0
	Pigs - unspecified - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	6	0	Yersinia	0
	Rabbits - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	8	1	Yersinia, unspecified sp.	1
	Reptiles - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Reptiles - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	8	0	Yersinia	0
	Rodents - zoo animal - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	10	1	Yersinia pseudotuberculosis	1
	Sheep - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Yersinia	0
	Solipeds, domestic - donkeys - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Solipeds, domestic - horses - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	78	1	Yersinia, unspecified sp.	1
	Turtles - pet animals - Unspecified - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	1	0	Yersinia	0
	Turtles - zoo animals - Zoo - Not Available - animal sample - Clinical investigations - Industry sampling - Suspect sampling	N_A	Microbiological standard tests	animal	3	0	Yersinia	0

FOODBORNE OUTBREAKS TABLES

Foodborne Outbreaks: summarized data

Salmonella spp., unspecified	Eggs and egg products	1	13	2	0				
	Unknown					2	6	5	0
Salmonella Typhimurium, monophasic	Confectionery products and pastes - chocolate-based product	1	49	0	0				
Shigella sonnei	Tap water, including well water	1	256	3	0				

Unknown	Unknown					24	221	13	0
Vibrio parahaemolyticus	Live bivalve molluscs - oysters	1	2	0	0				

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

		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	Other processed food products and prepared dishes pasta/rice salad	1	22	0	0				
	Other processed food products and prepared dishes rice based dishes	1	2	0	0				
Enteropathogenic E. coli (EPEC)	Bakery products - cakes	1	2	0	0				
Listeria monocytogenes	Fish - smoked	1	20	19	1				
Norovirus	Unknown					4	180	1	0
	Other processed food products and prepared dishes pizza and pizza-like dishes	1	4	1	0				
Salmonella Agona	Unknown					1	8	0	0

Strong Foodborne Outbreaks: detailed data

Causative agent	H	AG	VT	Other Causative Agent	FBO nat. code	Outbreak type	Food vehicle	More food vehicle info	Nature of evidence	Setting	Place of origin of problem	Origin of food vehicle	Contributory factors	Comment	N outbreaks	N human cases	N hosp.	N deaths
Bacillus cereus	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_1	General	Other processed food products and prepared dishes - pasta/rice salad	Rice salad	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent									
					CH_FBO_2022_2	General	Other processed food products and prepared dishes - rice based dishes	Risotto radicchio with gorgonzola cheese	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	1	2	0	0
Enteropathogenic E. coli (EPEC)	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_3	Household	Bakery products - cakes	Pineapple cake	Descriptive environmental evidence;Descriptive	Restaurant or Cafe or	Not Available	Not Available	Not Available	N_A				

									environmental evidence	Pub or Bar or Hotel or					1	2	0	0
Listeria monocytogenes	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_4	General	Fish - smoked	Smoked trout	Producttracing investigations;Detection of causative agent in food vehicle or its component Detection of indistinguishable causative agent in humans	Multiple places of exposure in one country	Not Available	Not Available	Not Available	N_A	1	20	19	1
Norovirus	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022	Unknown	Other processed food products and	Pizza	Descriptive environmental evidence;Descriptive environmental evidence	Restaurant or Cafe or	Not Available	Not Available	Not Available	N_A				
Salmonella spp., unspecified	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_11	General	Eggs and egg products	chocolate mousse	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans	School or kindergarten	Not Available	Not Available	Not Available	N_A	1	13	2	0
										Catering service								
	Not Available		Not Available		_5		prepared dishes - pizza and pizza-like dishes											
School or kindergarten		Not Available		Not Available	N_A					Pub or Bar or Hotel or Catering service					1	4	1	0
					1	22	0	0										

	Salmonella Typhimurium, monophasic	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_9	Part of multicountry outbreak	Confectionery products and pastes chocolate-based product	N_A															
										Causative agent	**Other Contributory H Setting**	**Causative AG of problem**	**FBO nat. N VT vehicle**	**More food vehicle human Agent factors**	**code Comment**	**Nature of Outbreak type**	**N outbreaks**	**Place of origin N Food vehicle cases**	**Origin of food info hosp.**	**deaths**	**evidence**
	Shigella sonnei	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_14	General	Tap water, including well water	N_A	Detection of causative agent in food vehicle or its component Detection of indistinguishable causative agent in humans	Domestic premises	Not Available	Not Available	Not Available	N_A		1	256	3	0	
										ducttracing investigations ;Descriptive environmental evidence	vehicle or its component places of exposure in more than one country	Symptoms and onset of illness Multiple Available				Not Available	Not	1	49	Not Available unk	N_A 0	
Pro										Detection of causative agent in food	Restaurant	Not Available	Not	Not Available	N_A or Cafe or							
	Vibrio parahaemolyticus	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_15	General	Live bivalve molluscs - oysters	N_A															

Pubo	r Bar pathognomonic to causative agent	or Hotel or Catering service	1	2	0	0

Weak Foodborne Outbreaks: detailed data

Causative agent	H	AG	VT	Other Causative Agent	FBO nat. code	Outbreak type	Food vehicle	More food vehicle info	Nature of evidence	Setting	Place of origin of problem	Origin of food vehicle	Contributory factors	Comment	N outbreaks	N human cases	N hosp.	N deaths
Norovirus	Salmonella spp., unspecified	Not	Not	Not	Not Available	CH_FB	General	Unknown	N_A									
	Descriptiv Available	Available	Available		O_2022_6	CH_FB O_2022_7	General	Unknown	N_A	Descriptive environmental evidence; Descriptive environmental evidence	Hospital or medical care facility	Not Available	Not Available	Not Available	N_A	1	100	unk	0
									evidence; Descriptive environm									

									de		Descriptive	kindergarten									
	Salmonella Agona	Not Available	Not Available	Not Available	Campylobacter, unspecified sp.	CH_FBO_2022_10	General	Unknown		N_A		Descriptive environmental evidence; Descriptive environmental evidence	Hospital or medical care facility	Not Available	Not Available	Not Available	N_A		1	8	0	0
									nce		environmental evidence							1	unk	0	0
CH_FB General	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_12	Unknown	Unknown	N_A			Descriptive environmental evidence	Residential home or institution (nursing	Not Available	Not Available	Not Available	N_A					
						CH_FBO_2022_13	General	Unknown		N_A		Descriptive	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A		1	4	3	0
	Unknown	Not Available	Not Available	Not Available	Not Available	CH_FB	Unknown	Unknown		N_A		Descriptive evidence; Descriptive environme	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A		2	80	1	0
Unknown																					
N_A	Descriptiv																				
	O_2022 e												Restaurant or Cafe or Pub or Bar or Hotel or	Not Available	Not Available	Not Available	N_A				
	_8 environme											environmental evidence; Descriptive environme	Cateringservice						1	2	2	0
									nt				or Bar orHotel or						2	7	0	0
		Available	Available		O_2022_16							e environmental evidence	Catering service								
		School or	Not Available	Not Available	Not Available	N_A															

Causative agent	H	AG	VT	Other Causative Agent	FBO nat. code	Outbreak type	Food vehicle	More food vehicle info	Nature of evidence	Setting	Place of origin of problem	Origin of food vehicle	Contributory factors	Comment	N outbreaks	N human cases	N hosp.	N deaths
Unknown	Not Available	Not Available	Not Available	Not Available	_17			N_A	Descriptive environmental evidence	Restaurant or Cafe or Pub or Bar or Hotel or service				N_A	3	108	0	0
					CH_FBO_2022	General	Unknown	N_A	Unknown	School or kindergarten	Not Available	Not Available	Not Available	N_A	2	22	2	0
					CH_FBO_2022_18	General	Unknown			Catering	Not Available	Not Available	Not Available					
					CH_FBO_2022_19	Household	Unknown	N_A	Descriptive environmental evidence	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	1	2	0	0
					CH_FBO_2022_20	Unknown	Unknown	N_A	Descriptive environme	Take-away or fast-food outlet 1	Not Available 3	Not Available 0	Not Available 0 ntal evidence	N_A				
					CH_FBO_2022_21	General	Unknown	N_A	Descriptive environmental evidence	Canteen or workplace catering	Not Available	Not Available	Not Available	N_A	1	3	3	0
					CH_FBO_2022	Household fast-food 2	Unknown 6	N_A 1	0 _22 Unknown	outlet Take-away or Catering service	Not Available	Not Available	Not Available	N_A				
					CH_FBO_2022_27	General	Unknown	N_A	Unknown	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A	3	18	2	0

					CH_FBO_2022_23	General	Unknown	N_A		Unknown	Domestic premises	Not Available	Not Available	Not Available	N_A					1	7	1	0
					CH_FBO_2022_24	General	Unknown	N_A		Unknown	Temporary mass catering(fairs or festivals)	Not Available	Not Available	Not Available	N_A					1	7	0	0
					CH_FBO_2022_25	Unknown	Unknown	N_A		Unknown	Restaurant or Cafe or Pub or Bar or Hotel or Catering service	Not Available	Not Available	Not Available	N_A					3	8	0	0
					CH_FBO_2022_26	Household or Bar or	Unknown Hotel or	N_A	1	Unknown 4	0	Restaurant or Cafe or Pub 0	Not Available	Not Available	Not Available	N_A								
Causative agent	**H**	**AG**	**VT**	**Other Causative Agent**	**FBO nat. code**	**Outbreak type**	**Food vehicle**	**More food vehicle info**		**Nature of evidence**	**Setting**	**Place of origin of problem**		**Origin of food vehicle**	**Contributory factors**		**Comment**			**N outbreaks**	**N human cases**	**N hosp.**	**N deaths**
Unknown	Not Available	Not Available	Not Available	Not Available	CH_FBO_2022_28	General	Unknown	N_A		Unknown	Residential institution (nursing home or	1	Not Available 20	Not Available 0	Not Available 0 prison or boarding school)		N_A						
					CH_FBO_2022_29	General	Unknown	N_A		Descriptive environmental evidence	Residential institution (nursing home or prison or boarding school)	Not Available		Not Available	Not Available		N_A			1	unk	0	0
					CH_FBO_2022_30	General	Unknown	N_A		Unknown	Canteen or workplace catering	Not Available		Not Available	Not Available		N_A			1	6	4	0

ANTIMICROBIAL RESISTANCE TABLES FOR CAMPYLOBACTER

Table Antimicrobial susceptibility testing of Campylobacter coli in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse | Sampling Type: animal sample - caecum | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: AMR MON

Analytical Method:

Country of Origin: Switzerland

	AM substance		Ciprofloxacin	Ertapenem	Erythromycin	Gentamicin	Tetracycline
	ECOFF	**16**	**0.5**	**0.5**	**8**	**2**	**2**
	Lowest limit	**2**	**0.125**	**0.125**	**1**	**0.25**	**0.5**
	Highest limit	**64**	**32**	**4**	**512**	**16**	**64**
	N of tested isolates	**62**	**62**	**62**	**62**	**62**	**62**
MIC	**N of resistant isolates**	**0**	**37**	**10**	**1**	**0**	**23**
<=0.125			19	32			
<=0.25						10	
0.25			6	8			
<=0.5							34
0.5				12		28	
<=1					56		
1				6		24	4
<=2		36					
2				4	3		1
4		24	2		1		
8		2	16		1		1
16			12				
32			7				1
64							8
>64							13

>512	1

Sampling details:

	Chloramphenicol

Table Antimicrobial susceptibility testing of Campylobacter jejuni in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse
Sampling Type: animal sample - caecum
Sampling Context: Monitoring - EFSA specifications
Sampler: Official sampling
Sampling Strategy: Objective sampling
Programme Code: AMR MON
Analytical Method:
Country of Origin: Switzerland

AM substance		Ciprofloxacin	Ertapenem	Erythromycin	Gentamicin	Tetracycline
ECOFF	16	0.5	0.5	4	2	1
Lowest limit	2	0.125	0.125	1	0.25	0.5
Highest limit	64	32	4	512	16	64
N of tested isolates	232	232	232	232	232	232
N of resistant isolates	0	106	0	1	0	63

MIC						
<=0.125		113	217			
<=0.25					71	

Chloramphenicol						
0.25		11	11			
<=0.5						161
0.5		2	4		148	
<=1				224		
1		1			13	8
<=2	221					
2		1		5		3
4	10	3		2		2
8	1	39		1		3
16		55				14
32		5				6
>32		2				
64						16
>64						19

Sampling details:

ANTIMICROBIAL RESISTANCE TABLES FOR SALMONELLA

Table Antimicrobial susceptibility testing of Salmonella 1,13,23:i:- in Gallus gallus (fowl)

Sampling Stage: Unspecified
Sampling Type: unknown
Sampling Context: Unspecified
Sampler: Not applicable
Sampling Strategy: Not specified
Programme Code: OTHER AMR MON
Analytical Method:
Country of Origin: Switzerland Sampling
Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.03	0.03	0.064	<=0.25	<=0.5	0.5	<=1	1	<=2	2	<=4	<=8	8	128
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	3	0														3
Tetracycline	Not Available	Not Available	Not Available	32	8	2	3	0									3					
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	3	0				2		1								

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	3	0				3									
Amikacin	Not Available	Not Available	Not Available	128	4	4	3	0											3		
Ampicillin	Not Available	Not Available	Not Available	32	8	1	3	0							1			2			
Azithromycin	Not Available	Not Available	Not Available	64	16	2	3	0													3
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	3	0				3									
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	3	0						2		1					
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	3	0												3	
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	3	0		3											
Colistin	Not Available	Not Available	Not Available	16	2	1	3	0							3						
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	3	0					3								
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	3	0	1		2										

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	3	0	3

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Table Antimicrobial susceptibility testing of Salmonella Agona in Gallus gallus (fowl)

Sampling Stage: Unspecified
Sampler: Not applicable
Analytical Method:
Country of Origin: Switzerland

Sampling Type: unknown
Sampling Strategy: Not specified

Sampling Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	<=0.25	<=0.5	0.5	<=1	1	<=2	2	<=4	4	<=8	8	64
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	2	0													1		1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	2	0									2						
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	2	0				1		1									

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	2	0				2											
Amikacin	Not Available	Not Available	Not Available	128	4	4	2	0											2				
Ampicillin	Not Available	Not Available	Not Available	32	8	1	2	0							1			1					
Azithromycin	Not Available	Not Available	Not Available	64	16	2	2	0												1		1	
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	2	0				2											
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	2	0				1		1									
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	2	0													2		
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	2	0	1		1												
Colistin	Not Available	Not Available	Not Available	16	2	1	2	0							1			1					
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	2	0					1			1							
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	2	0		2													

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	2	0														2			

Table Antimicrobial susceptibility testing of Salmonella Albany in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampler: Not applicable

Sampling Strategy: Not specified

Analytical Method: Country of

Origin: Switzerland Sampling

Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	<=0.25	<=0.5	0.5	<=1	<=2	2	<=4	4	<=8	8	32	64
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	2	0													1	1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	2	0							2							
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	2	0			2											

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	2	0			2									
Amikacin	Not Available	Not Available	Not Available	128	4	4	2	0									2			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	2	0						1		1				
Azithromycin	Not Available	Not Available	Not Available	64	16	2	2	0										1		1
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	2	0			2									
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	2	0			1		1							
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	2	0											2	
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	2	0	2											
Colistin	Not Available	Not Available	Not Available	16	2	1	2	0						2						
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	2	0				2								
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	2	0		2										

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	2	0																							2

Table Antimicrobial susceptibility testing of Salmonella Albany in Turkeys

Sampling Stage: Unspecified

Sampler: Not applicable

Analytical Method:

Country of Origin: Switzerland

Sampling Type: unknown

Sampling Strategy: Not specified

Sampling Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	0.064	<=0.25	<=0.5	0.5	<=1	1	<=2	2	<=4	4	<=8	8	16	32	64
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	6	0																1	2	3
Tetracycline	Not Available	Not Available	Not Available	32	8	2	6	0										6								
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	6	0					5		1											

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	6	0					6													
Amikacin	Not Available	Not Available	Not Available	128	4	4	6	0												6						
Ampicillin	Not Available	Not Available	Not Available	32	8	1	6	0								5			1							
Azithromycin	Not Available	Not Available	Not Available	64	16	2	6	0													4		2			
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	6	0					6													
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	6	0					1		5											
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	6	0														6				
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	6	0	4		2															
Colistin	Not Available	Not Available	Not Available	16	2	1	6	0								6										
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	6	0						2			4									
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	6	0		5		1														

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.03	0.03	0.064	<=0.25	<=0.5	0.5	<=1	<=2	2	<=4	4	<=8	8	128	256
Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	6	0												6			

Table Antimicrobial susceptibility testing of Salmonella Coeln in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampler: Not applicable

Sampling Strategy: Not specified

Analytical Method:

Country of Origin: Switzerland

Sampling Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.03	0.03	0.064	<=0.25	<=0.5	0.5	<=1	<=2	2	<=4	4	<=8	8	128	256
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	2	0														1	1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	2	0									2						
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	2	0						2									

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	2	0				2									
Amikacin	Not Available	Not Available	Not Available	128	4	4	2	0										2			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	2	0							1		1				
Azithromycin	Not Available	Not Available	Not Available	64	16	2	2	0											1		1
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	2	0				2									
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	2	0				1		1							
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	2	0												2	
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	2	0		2											
Colistin	Not Available	Not Available	Not Available	16	2	1	2	0							1		1				
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	2	0					2								
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	2	0	1		1										

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	2	0	2

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

Sampling Stage: Unspecified

Sampling Type: unknown

Sampler: Not applicable

Sampling Strategy: Not specified

Analytical Method:

Country of Origin: Switzerland

Sampling Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	0.064	<=0.25	<=0.5	0.5	<=1	<=2	2	<=4	4	<=8	8	32	64	128
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	15	0													1		2	5	7
Tetracycline	Not Available	Not Available	Not Available	32	8	2	15	0									15								
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	15	0					15												

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	15	0					14		1							
Amikacin	Not Available	Not Available	Not Available	128	4	4	15	0											15			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	15	0								3		12				
Azithromycin	Not Available	Not Available	Not Available	64	16	2	15	0												10		5
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	15	0					15									
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	15	0					14		1							
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	15	0													15	
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	15	0	10		5											
Colistin	Not Available	Not Available	Not Available	16	2	1	15	0								7		8				
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	15	0						15								
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	15	0		13		2										

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	15	0													14			1	

Table Antimicrobial susceptibility testing of Salmonella Infantis in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampler: Not applicable

Analytical Method:

Country of Origin: Switzerland

Sampling Type: unknown

Sampling Strategy: Not specified

Sampling Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	<=0.25	<=0.5	0.5	<=1	<=2	2	<=4	4	<=8	8	16	32	64
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	3	0														1	1	1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	3	0									3							
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	3	0					2		1									

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	3	0				3									
Amikacin	Not Available	Not Available	Not Available	128	4	4	3	0										3			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	3	0							2		1				
Azithromycin	Not Available	Not Available	Not Available	64	16	2	3	0											1		2
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	3	0				3									
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	3	0				1		2							
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	3	0												3	
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	3	0	2		1										
Colistin	Not Available	Not Available	Not Available	16	2	1	3	0							3						
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	3	0					3								
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	3	0		3											

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	<=0.25	<=0.5	0.5	<=1	<=2	2	<=4	<=8	8	64
Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	3	0										3			

Table Antimicrobial susceptibility testing of Salmonella Livingstone in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampler: Not applicable

Sampling Strategy: Not specified

Analytical Method:

Country of Origin: Switzerland

Sampling Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	<=0.25	<=0.5	0.5	<=1	<=2	2	<=4	<=8	8	64
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	2	0													2
Tetracycline	Not Available	Not Available	Not Available	32	8	2	2	0									2				
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	2	0				2									

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	2	0						2							
Amikacin	Not Available	Not Available	Not Available	128	4	4	2	0										2			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	2	0							1		1				
Azithromycin	Not Available	Not Available	Not Available	64	16	2	2	0												2	
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	2	0				2									
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	2	0				2									
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	2	0											2		
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	2	0	1		1										
Colistin	Not Available	Not Available	Not Available	16	2	1	2	0							2						
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	2	0					2								
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	2	0		2											

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	2	0												2		

Table Antimicrobial susceptibility testing of Salmonella Mbandaka in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampler: Not applicable

Sampling Strategy: Not specified

Analytical Method: Country of

Origin: Switzerland Sampling

Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	<=0.25	<=0.5	0.5	<=1	<=2	<=4	<=8	8	128
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	1	0											1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	1	0							1				
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	1	0			1								

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	1	0					1						
Amikacin	Not Available	Not Available	Not Available	128	4	4	1	0								1			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	1	0						1					
Azithromycin	Not Available	Not Available	Not Available	64	16	2	1	0										1	
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	1	0			1								
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	1	0					1						
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	1	0									1		
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	1	0	1										
Colistin	Not Available	Not Available	Not Available	16	2	1	1	0						1					
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	1	0				1							
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	1	0		1									

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	1	0													1				

Table Antimicrobial susceptibility testing of Salmonella Napoli in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampler: Not applicable

Sampling Strategy: Not specified

Analytical Method:

Country of Origin: Switzerland

Sampling Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	0.064	<=0.25	<=0.5	0.5	<=2	2	<=4	4	<=8	8	32	64
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	2	0														1	1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	2	0								2							
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	2	0					1		1								

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	2	0					2								
Amikacin	Not Available	Not Available	Not Available	128	4	4	2	0										2			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	2	0									2				
Azithromycin	Not Available	Not Available	Not Available	64	16	2	2	0											1		1
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	2	0					2								
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	2	0					1		1						
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	2	0												2	
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	2	0	1		1										
Colistin	Not Available	Not Available	Not Available	16	2	1	2	0									2				
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	2	0						2							
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	2	0		1		1									

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	2	0												2		

Table Antimicrobial susceptibility testing of Salmonella Sanga in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampler: Not applicable

Sampling Strategy: Not specified

Analytical Method: Country of

Origin: Switzerland Sampling

Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	<=0.25	<=0.5	<=1	2	<=4	4	<=8	>16	>32	>512
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	1	1												1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	1	1											1	
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	1	0			1									

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	1	1										1
Amikacin	Not Available	Not Available	Not Available	128	4	4	1	0							1			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	1	0						1				
Azithromycin	Not Available	Not Available	Not Available	64	16	2	1	0								1		
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	1	0			1							
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	1	0			1							
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	1	0									1	
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	1	0	1									
Colistin	Not Available	Not Available	Not Available	16	2	1	1	0					1					
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	1	0				1						
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	1	0		1								

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	0.064	<=0.25	0.25	<=0.5	0.5	<=1	1	<=2	2	<=4	4	<=8	>64	128	512
Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	1	0							1								

Table Antimicrobial susceptibility testing of Salmonella Senftenberg in Turkeys

Sampling Stage: Unspecified

Sampling Type: unknown

Sampler: Not applicable

Sampling Strategy: Not specified

Analytical Method:

Country of Origin: Switzerland

Sampling Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	0.064	<=0.25	0.25	<=0.5	0.5	<=1	1	<=2	2	<=4	4	<=8	>64	128	512
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	2	1														1	1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	2	0									2						
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	2	0		2													

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	2	0					2							
Amikacin	Not Available	Not Available	Not Available	128	4	4	2	0										2		
Ampicillin	Not Available	Not Available	Not Available	32	8	1	2	0									2			
Azithromycin	Not Available	Not Available	Not Available	64	16	2	2	0											2	
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	2	0		2										
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	2	0					1		1					
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	2	0												2
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	2	2			2									
Colistin	Not Available	Not Available	Not Available	16	2	1	2	0						2						
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	2	0				2								
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	2	0	2											

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	2	2																	2

Table Antimicrobial susceptibility testing of Salmonella Stourbridge in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampler: Not applicable

Analytical Method: Country of

Origin: Switzerland Sampling

Details:

Sampling Type: unknown

Sampling Strategy: Not specified

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.03	0.03	0.064	<=0.25	<=0.5	0.5	<=1	<=2	<=4	4	<=8	128	256
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	2	0												1	1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	2	0								2					
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	2	0				1		1							

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	2	0				2									
Amikacin	Not Available	Not Available	Not Available	128	4	4	2	0									2				
Ampicillin	Not Available	Not Available	Not Available	32	8	1	2	0							2						
Azithromycin	Not Available	Not Available	Not Available	64	16	2	2	0										2			
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	2	0				2									
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	2	0				1		1							
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	2	0											2		
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	2	0		2											
Colistin	Not Available	Not Available	Not Available	16	2	1	2	0							2						
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	2	0					2								
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	2	0	1		1										

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	2	0											2			

Table Antimicrobial susceptibility testing of Salmonella Tennessee in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampler: Not applicable

Analytical Method: Country of

Origin: Switzerland Sampling

Details:

Sampling Type: unknown

Sampling Strategy: Not specified

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	<=0.25	<=0.5	0.5	<=1	<=2	<=4	<=8	8	64
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	1	0											1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	1	0							1				
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	1	0			1								

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	1	0					1						
Amikacin	Not Available	Not Available	Not Available	128	4	4	1	0								1			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	1	0						1					
Azithromycin	Not Available	Not Available	Not Available	64	16	2	1	0										1	
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	1	0			1								
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	1	0					1						
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	1	0									1		
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	1	0	1										
Colistin	Not Available	Not Available	Not Available	16	2	1	1	0						1					
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	1	0				1							
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	1	0		1									

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	1	0								1										

Table Antimicrobial susceptibility testing of Salmonella Typhimurium in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampler: Not applicable

Sampling Strategy: Not specified

Analytical Method:

Country of Origin: Switzerland

Sampling Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	0.064	<=0.25	<=0.5	0.5	<=1	<=2	2	<=4	4	<=8	8	16	32	64	128
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	12	0															3	2	5	2
Tetracycline	Not Available	Not Available	Not Available	32	8	2	12	0									12									
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	12	0					9		3											

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	12	0					12									
Amikacin	Not Available	Not Available	Not Available	128	4	4	12	0											12			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	12	0								4		8				
Azithromycin	Not Available	Not Available	Not Available	64	16	2	12	0												11		1
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	12	0					12									
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	12	0					9		3							
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	12	0													12	
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	12	0	2		10											
Colistin	Not Available	Not Available	Not Available	16	2	1	12	1								2		9		1		
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	12	0						12								
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	12	0		4		8										

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	12	0													12

Table Antimicrobial susceptibility testing of Salmonella Typhimurium, monophasic in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampler: Not applicable

Analytical Method: Country of

Origin: Switzerland Sampling

Details:

Sampling Type: unknown

Sampling Strategy: Not specified

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	0.03	0.064	<=0.25	<=0.5	<=1	<=4	4	<=8	>32	>512
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	2	2										2
Tetracycline	Not Available	Not Available	Not Available	32	8	2	2	2									2	
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	2	0			2							

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	2	0			2							
Amikacin	Not Available	Not Available	Not Available	128	4	4	2	0						2				
Ampicillin	Not Available	Not Available	Not Available	32	8	1	2	2									2	
Azithromycin	Not Available	Not Available	Not Available	64	16	2	2	0							2			
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	2	0			2							
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	2	0			2							
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	2	0								2		
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	2	0	2									
Colistin	Not Available	Not Available	Not Available	16	2	1	2	0					2					
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	2	0				2						
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	2	0		2								

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	2	0												2	

Table Antimicrobial susceptibility testing of Salmonella Veneziana in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampler: Not applicable

Analytical Method: Country of

Origin: Switzerland Sampling

Details:

Sampling Type: unknown

Sampling Strategy: Not specified

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.015	0.064	<=0.25	<=0.5	<=1	<=2	<=4	<=8	8	64
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	1	0										1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	1	0						1				
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	1	0			1							

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	1	0			1							
Amikacin	Not Available	Not Available	Not Available	128	4	4	1	0							1			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	1	0					1					
Azithromycin	Not Available	Not Available	Not Available	64	16	2	1	0									1	
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	1	0			1							
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	1	0			1							
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	1	0								1		
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	1	0	1									
Colistin	Not Available	Not Available	Not Available	16	2	1	1	0					1					
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	1	0				1						
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	1	0		1								

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	1	0														1

Table Antimicrobial susceptibility testing of Salmonella Welikade in Gallus gallus (fowl)

Sampling Stage: Unspecified

Sampling Type: unknown

Sampler: Not applicable

Sampling Strategy: Not specified

Analytical Method: Country of

Origin: Switzerland Sampling

Details:

AM substance	AMPC Genes	CARBA Genes	ESBL Genes	Highest limit	ECOFF	Lowest limit	N of tested isolates	N of resistant isolates	<=0.03	0.03	<=0.25	<=0.5	0.5	<=1	<=2	2	<=4	4	<=8	32
Sulfamethoxazole	Not Available	Not Available	Not Available	512	256	8	1	0												1
Tetracycline	Not Available	Not Available	Not Available	32	8	2	1	0							1					
Tigecycline	Not Available	Not Available	Not Available	8	0.5	0.25	1	0			1									

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Trimethoprim	Not Available	Not Available	Not Available	16	2	0.25	1	0					1							
Amikacin	Not Available	Not Available	Not Available	128	4	4	1	0									1			
Ampicillin	Not Available	Not Available	Not Available	32	8	1	1	0						1						
Azithromycin	Not Available	Not Available	Not Available	64	16	2	1	0										1		
Cefotaxim	Not Available	Not Available	Not Available	4	0.5	0.25	1	0			1									
Ceftazidim	Not Available	Not Available	Not Available	8	2	0.25	1	0					1							
Chloramphenicol	Not Available	Not Available	Not Available	64	16	8	1	0											1	
Ciprofloxacin	Not Available	Not Available	Not Available	8	0.064	0.015	1	0		1										
Colistin	Not Available	Not Available	Not Available	16	2	1	1	0								1				
Gentamicin	Not Available	Not Available	Not Available	16	2	0.5	1	0				1								
Meropenem	Not Available	Not Available	Not Available	16	0.125	0.03	1	0	1											

Sampling Context: Unspecified

Programme Code: OTHER AMR MON

Nalidixic acid	Not Available	Not Available	Not Available	64	8	4	1	0	1

ANTIMICROBIAL RESISTANCE TABLES FOR INDICATOR ESCHERICHIA COLI

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

Sampling Stage: Retail
Sampling Type: food sample - meat
Sampling Context: Monitoring - EFSA specifications
Sampler: Official sampling
Sampling Strategy: Objective sampling
Programme Code: ESBL MON pnl2
Analytical Method:
Country of Origin: Germany
Sampling Details:

AM substance	CARBA Genes	AMPC Genes	ESBL Genes	Ceftazidime synergy test	Cefotaxime synergy test	ECOFF	Lowest limit	Highest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	<=0.064	<=0.125	0.125	0.25	0.5	1	2	4	8	16	32	64	>64
Cefepime	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.064	32	22	20						2		1		3	9	4	3			
Cefotaxim	Not Available	Not Available	Not Available	Not Available	Not Available	0.25	0.25	64	22	22									1	2			5	5	5	4
Ceftaxime + Clavulanic acid	Not Available	Not Available	Not Available		Positive/Present	0.25	0.064	64	22	3				15		4			1							
				Not Available	Negative/Absent	0.25	0.064	64	22	3									2							
Cefoxitin	Not Available	Not Available	Not Available	Not Available	Not Available	8	0.5	64	22	3										2	14	3	2		1	
Ceftazidim	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.25	128	22	22									1	4	9	6	2			
Ceftazidime + Clavulanic acid	Not Available	Not Available	Not Available	Positive/Present	Not Available	0.5	0.125	128	22	3					8		9	1								
				Negative/Absent	Not Available	0.5	0.125	128	22	3							1			2	1					
Ertapenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.06	0.015	2	22	0	17		5													
Imipenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.125	16	22	0					16		5	1								

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

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON

Analytical Method:

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

Meropenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.03	16	22	0	22		
Temocillin	Not Available	Not Available	Not Available	Not Available	Not Available	16	0.5	128	22	0		8	14

Country of Origin: Germany

Sampling Details:

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

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON pnl2

Analytical Method:

Country of Origin: France Sampling Details:

AM substance	CARBA Genes	AMPC Genes	ESBL Genes	Ceftazidime synergy test	Cefotaxime synergy test	ECOFF	Lowest limit	Highest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	<=0.064	0.25	1	4	8	64
Cefepime	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.064	32	1	1					1			
Cefotaxim	Not Available	Not Available	Not Available	Not Available	Not Available	0.25	0.25	64	1	1						1		
Cefotaxime + Clavulanic acid	Not Available	Not Available	Not Available	Not Available	Positive/Present	0.25	0.064	64	1	0			1					
Cefoxitin	Not Available	Not Available	Not Available	Not Available	Not Available	8	0.5	64	1	0							1	
Ceftazidim	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.25	128	1	1								1
Ceftazidime + Clavulanic acid	Not Available	Not Available	Not Available	Positive/Present	Not Available	0.5	0.125	128	1	0				1				
Ertapenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.06	0.015	2	1	0	1							
Imipenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.125	16	1	0				1				
Meropenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.03	16	1	0		1						
Temocillin	Not Available	Not Available	Not Available	Not Available	Not Available	16	0.5	128	1	0							1	

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

Sampling Stage: Retail
Sampling Type: food sample - meat
Sampling Context: Monitoring - EFSA specifications
Sampler: Official sampling
Sampling Strategy: Objective sampling
Programme Code: ESBL MON
Analytical Method:

No data returned for this view. This might be because the applied filter excludes all data.
Country of Origin: France Sampling

Details:

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

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON pnl2

Analytical Method:
Country of Origin: Hungary

Sampling Details:

AM substance	CARBA Genes	AMPC Genes	ESBL Genes	Ceftazidime synergy test	Cefotaxime synergy test	ECOFF	Lowest limit	Highest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	<=0.064	<=0.125	0.125	0.25	1	2	4	8	16	64	>64
Cefepime	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.064	32	3	2					1			1			1		
Ceftiofur	Not Available	Not Available	Not Available	Not Available	Not Available	0.25	0.25	64	3	3										2			1
Cefotaxime + Clavulanic acid	Not Available	Not Available	Not Available	Not Available	Positive/Present	0.25	0.064	64	3	1			2										
					Not Available														1				
					Negative/Absent	0.25	0.064	64	3	1													
Cefoxitin	Not Available	Not Available	Not Available	Not Available	Not Available	8	0.5	64	3	1									2			1	
Ceftazidim	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.25	128	3	3							1		1	1			
Ceftazidime + Clavulanic acid	Not Available	Not Available	Not Available	Positive/Present	Not Available	0.5	0.125	128	3	1						1							
				Negative/Absent	Not Available	0.5	0.125	128	3	1						1			1				
Ertapenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.06	0.015	2	3	0	3												
Imipenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.125	16	3	0				3									
Meropenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.03	16	3	0		3											

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

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON

Analytical Method:

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

Temocillin	Not Available	Not Available	Not Available	Not Available	Not Available	16	0.5	128	3	0	1	2	

Country of Origin: Hungary

Sampling Details:

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON pnl2

Analytical Method:

Ceftazidime + Clavulanic acid	Not Available	Not Available	Not Available	Positive/Present	Not Available	0.5	0.125	128	2	0			1	1	
Ertapenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.06	0.015	2	2	0	1	1			
Imipenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.125	16	2	0			1	1	
Meropenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.03	16	2	0		2			

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON

Analytical Method:

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

AM substance	CARBA Genes	AMPC Genes	ESBL Genes	Ceftazidime synergy test	Cefotaxime synergy test	ECOFF	Lowest limit	Highest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	<=0.064	<=0.125	0.125	0.25	0.5	1	2	8	16	64
Temocillin	Not Available	Not Available	Not Available	Not Available	Not Available	16	0.5	128	2	0											1	1	
Country of Origin: Austria Sampling Details:																							
Cefepime	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.064	32	2	1						1				1			
Cefotaxim	Not Available	Not Available	Not Available	Not Available	Not Available	0.25	0.25	64	2	2								1					1
Cefotaxime + Clavulanic acid	Not Available	Not Available	Not Available	Not Available	Positive/Present	0.25	0.064	64	2	0				1		1							
Cefoxitin	Not Available	Not Available	Not Available	Not Available	Not Available	8	0.5	64	2	1										1		1	
Ceftazidim	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.25	128	2	2									1	1			

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail

Sampling Type: food sample - meat

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: ESBL MON pnl2

Analytical Method:

Country of Origin: Austria Sampling

Details:

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON

Analytical Method:

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

Country of Origin: Slovenia Sampling Details:

AM substance	CARBA Genes	AMPC Genes	ESBL Genes	Ceftazidime synergy test	Cefotaxime synergy test	ECOFF	Lowest limit	Highest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	<=0.064	<=0.125	0.125	<=0.25	0.25	1	2	4	8	16	32	64
Cefepime	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.064	32	15	14			1				1			5	8			
Cefoperazone	Not Available	Not Available	Not Available	Not Available	Not Available	0.25	0.25	64	15	15								2			1		8	4
Cefotaxime + Clavulanic acid	Not Available	Not Available	Not Available	Not Available	Positive/Present	0.25	0.064	64	15	1			13		1									
					Negative/Absent	0.25	0.064	64	15	1								1						
Cefoxitin	Not Available	Not Available	Not Available	Not Available	Not Available	8	0.5	64	15	1									3	8	3	1		
Ceftazidim	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.25	128	15	14						1		3	11					
Ceftazidime + Clavulanic acid	Not Available	Not Available	Not Available	Not Available	Positive/Present	0.5	0.125	128	15	1				4			8							
				Negative/Absent	Not Available	0.5	0.125	128	15	1				1			1	1						
Ertapenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.06	0.015	2	15	0	15													
Imipenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.125	16	15	0				9			6							

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON pnl2

Analytical Method:

Meropenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.03	16	15	0	15				
Temocillin	Not Available	Not Available	Not Available	Not Available	Not Available	16	0.5	128	15	0				7	8

Country of Origin: Slovenia Sampling

Details:

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON

Analytical Method:

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

Country of Origin: Switzerland Sampling Details:

AM substance	CARBA Genes	AMPC Genes	ESBL Genes	Ceftazidime synergy test	Cefotaxime synergy test	ECOFF	Lowest limit	Highest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	<=0.064	<=0.125	0.125	0.25	0.5	1	2	4	8	16	32	64	>64
Cefepime	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.064	32	9	6				1		2	1	2			2	1				
Cefotaxim	Not Available	Not Available	Not Available	Not Available	Not Available	0.25	0.25	64	9	9									2		2	2		1	2	
Cefotaxime + Clavulanic acid	Not Available	Not Available	Not Available	Not Available	Positive/Present	0.25	0.064	64	9	3				6												
					Negative/Absent	0.25	0.064	64	9	3									1	1	1					
Cefoxitin	Not Available	Not Available	Not Available	Not Available	Not Available	8	0.5	64	9	3											5	1		2		1
Ceftazidim	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.25	128	9	9									1	1	1	4	1	1		
Ceftazidime + Clavulanic acid	Not Available	Not Available	Not Available	Not Available	Positive/Present	0.5	0.125	128	9	3					4		2									
				Negative/Absent	Not Available	0.5	0.125	128	9	3										1	1	1				
Ertapenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.06	0.015	2	9	0	8		1													
Imipenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.125	16	9	0					6		3									

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON pnl2

Analytical Method:

Meropenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.03	16	9	0	9						
Temocillin	Not Available	Not Available	Not Available	Not Available	Not Available	16	0.5	128	9	0				1	5	3	

Country of Origin: Switzerland Sampling

Details:

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON

Analytical Method:

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

Country of Origin: Germany

Ceftazidime + Clavulanic acid	Not Available	Not Available	Not Available	Positive/Present	Not Available	0.5	0.125	128	8	0			4	3		
				Negative/Absent	Not Available	0.5	0.125	128	8	0				1		
Ertapenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.06	0.015	2	8	0	8					
Imipenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.125	16	8	0			4	4		
Meropenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.03	16	8	0		8				

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON pnl2

Analytical Method:

AM substance	CARBA Genes	AMPC Genes	ESBL Genes	Ceftazidime synergy test	Cefotaxime synergy test	ECOFF	Lowest limit	Highest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	<=0.064	<=0.125	0.125	0.25	0.5	1	2	4	8	16
Temocillin	Not Available	Not Available	Not Available	Not Available	Not Available	16	0.5	128	8	0										4	4	
Sampling Details:																						
Cefepime	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.064	32	8	7					1	3	4					
Cefotaxim	Not Available	Not Available	Not Available	Not Available	Not Available	0.25	0.25	64	8	8							1	2	4	1		
Cefotaxime + Clavulanic acid	Not Available	Not Available	Not Available	Not Available	Positive/Present	0.25	0.064	64	8	0			8									
Cefoxitin	Not Available	Not Available	Not Available	Not Available	Not Available	8	0.5	64	8	0									1	6	1	
Ceftazidim	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.25	128	8	8								1	2	1		4

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON

Analytical Method:

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

Country of Origin: Germany

Sampling Details:

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON pnl2

Analytical Method:

Country of Origin: Hungary

Sampling Details:

AM substance	CARBA Genes	AMPC Genes	ESBL Genes	Ceftazidime synergy test	Cefotaxime synergy test	ECOFF	Lowest limit	Highest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	<=0.064	0.064	<=0.125	0.125	0.25	0.5	1	2	4	8	16	32	64	>64
Cefepime	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.064	32	20	19							1	1	2		1	9	6				
Cefotaxim	Not Available	Not Available	Not Available	Not Available	Not Available	0.25	0.25	64	20	20											2	1	1	4	8	4	
Ceftaxime + Clavulanic acid	Not Available	Not Available	Not Available		Positive/Present	0.25	0.064	64	20	2				17			1										
				Not Available	Negative/Absent	0.25	0.064	64	20	2										1			1				
Ceftoxin	Not Available	Not Available	Not Available	Not Available	Not Available	8	0.5	64	20	2											5	10	3	1			1
Ceftazidim	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.25	128	20	20										9	6	1		2	1	1	
Ceftazidime + Clavulanic acid	Not Available	Not Available	Not Available		Positive/Present	0.5	0.125	128	20	2						9		5									
				Negative/Absent	Not Available	0.5	0.125	128	20	2								4			1			1			
Ertapenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.06	0.015	2	20	0	15		3		2												
Imipenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.125	16	20	0						15		5									
Meropenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.03	16	20	0		20															

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Meat from broilers (Gallus gallus) - fresh chilled

Sampling Stage: Retail | Sampling Type: food sample - meat | Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling | Sampling Strategy: Objective sampling | Programme Code: ESBL MON

Analytical Method:

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

Temocillin	Not Available	Not Available	Not Available	Not Available	Not Available	16	0.5	128	20	0			1	10	8	1

Country of Origin: Hungary

Sampling Details:

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Analytical Method:

Country of Origin: Switzerland

Sampling Details:

Ceftazidime + Clavulanic acid	Not Available	Not Available	Not Available	Positive/Present	Not Available	0.5	0.125	128	1	0				1
Ertapenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.06	0.015	2	1	0		1		
Imipenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.125	16	1	0			1	
Meropenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.03	16	1	0	1			

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Analytical Method:

Country of Origin: Switzerland Sampling

Details:

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

AM substance	CARBA Genes	AMPC Genes	ESBL Genes	Ceftazidime synergy test	Cefotaxime synergy test	ECOFF	Lowest limit	Highest limit	N of tested isolates	N of resistant isolates	<=0.03	0.03	<=0.064	<=0.125	0.25	4	8	32
Temocillin	Not Available	Not Available	Not Available	Not Available	Not Available	16	0.5	128	1	0							1	
Cefepime	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.064	32	1	1							1	
Ceftolozane + Tazobactam	Not Available	Not Available	Not Available	Not Available	Not Available	0.25	0.25	64	1	1								1
Cefotaxime + Clavulanic acid	Not Available	Not Available	Not Available	Not Available	Positive/Present	0.25	0.064	64	1	0			1					
Cefoxitin	Not Available	Not Available	Not Available	Not Available	Not Available	8	0.5	64	1	0							1	
	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.25	128	1	1						1		

Programme Code: AMR MON pnl2

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Analytical Method:

Country of Origin: Switzerland

Sampling Details:

Programme Code: AMR MON

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Analytical Method:

Country of Origin: Switzerland Sampling

Details:

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

Programme Code: ESBL MON pnl2

AM substance	CARBA Genes	AMPC Genes	ESBL Genes	Ceftazidime synergy test	Cefotaxime synergy test	ECOFF	Lowest limit	Highest limit	N of tested isolates	N of resistant isolates	<=0.015	<=0.03	0.03	<=0.064	0.064	<=0.125	0.125	0.25	0.5	1	2	4	8	16	32	64
Cefquinome	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.064	32	22	12				3			7	8		2		2				
Cefotaxim	Not Available	Not Available	Not Available	Not Available	Not Available	0.25	0.25	64	22	22									2	8	1	3	5	2	1	
Ceftiofur + Clavulanic acid	Not Available	Not Available	Not Available	Not Available	Positive/Present	0.25	0.064	64	22	14				7			1									
					Negative/Absent	0.25	0.064	64	22	14									3	5		1	5			
Cefoxitin	Not Available	Not Available	Not Available	Not Available	Not Available	8	0.5	64	22	13										1		5	3	4	3	6
Ceftazidim	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.25	128	22	22										1	7	4	2	7	1	
Ceftazidime + Clavulanic acid	Not Available	Not Available	Not Available	Positive/Present	Not Available	0.5	0.125	128	22	13						4		4								
				Negative/Absent	Not Available	0.5	0.125	128	22	13									1	3	3	2	4	1		

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic, unspecified in Gallus gallus (fowl) - broilers

Sampling Stage: Slaughterhouse

Sampling Type: animal sample - caecum

Sampling Context: Monitoring - EFSA specifications

Sampler: Official sampling

Sampling Strategy: Objective sampling

Analytical Method:

Country of Origin: Switzerland

Sampling Details:

Ertapenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.06	0.015	2	22	0	13		8		1									
Imipenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.5	0.125	16	22	0						13		9						
Meropenem	Not Available	Not Available	Not Available	Not Available	Not Available	0.125	0.03	16	22	0		22												
Temocillin	Not Available	Not Available	Not Available	Not Available	Not Available	16	0.5	128	22	0												14	6	2

Programme Code: ESBL MON

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

Programme Code	Matrix Detailed	Zoonotic Agent Detailed	Sampling Strategy	Sampling Stage	Sampling Details	Sampling Context	Sampler	Sample Type	Sampling Unit Type	Sample Origin	Comment	Total Units Tested	Total Units Positive
CARBAMON	Gallus gallus (fowl) broilers	Escherichia coli, nonpathogenic, unspecified	Objective sampling	Slaughterhouse	N_A	Monitoring - EFSA specifications	Official sampling	animal sample caecum	slaughter animal batch	Switzerland	N_A	510	0
	Meat from broilers (Gallus gallus) fresh chilled	Escherichia coli, nonpathogenic, unspecified	Objective sampling	Retail	N_A	Monitoring - EFSA specifications	Official sampling	food sample meat	single (food/feed)	Austria	N_A	3	0
										France	N_A	14	0
										Germany	N_A	23	0
										Hungary	N_A	32	0
										Slovenia	N_A	23	0
										Switzerland	N_A	212	0
	Meat from turkey fresh chilled	Escherichia coli, nonpathogenic, unspecified	Objective sampling	Retail	N_A	Monitoring - EFSA specifications	Official sampling	food sample meat	single (food/feed)	France	N_A	16	0
										Germany	N_A	52	0
										Hungary	N_A	33	0
										Switzerland	N_A	38	0

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

Latest Transmission set

Table Name	Last submitted dataset transmission date
Antimicrobial Resistance	30-May-2023
Esbl	30-May-2023
Animal Population	31-May-2023
Disease Status	30-May-2023
Prevalence	31-May-2023

ZOONOSES MONITORING

EUROPEAN FOOD SAFETY AUTHORITY

SWITZERLAND

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

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

IN 2022

Table of contents

1. Institutions and Laboratories involved in zoonoses monitoring and reporting

Switzerland

1. Centre for Zoonoses, Bacterial Animal Diseases Antimicrobial Resistance (ZOBA) at the Institute of Veterinary Bacteriology, Vetsuisse Faculty University of Bern National Reference Laboratory for Brucellosis, Salmonellosis, Campylobacteriosis, Listeriosis, Yersiniosis, Tularemia, Coxiellosis, Antimicrobial Resistance
2. Institute for Food Safety and Hygiene (ILS), Vetsuisse Faculty University of Zurich, National Reference Laboratory for STEC, enteropathogenic bacteria
3. Section of Veterinary Bacteriology (VB), Institute for Food Safety and Hygiene, Vetsuisse Faculty University of Zurich National Reference Laboratory for Tuberculosis
4. Institute of Parasitology IPB, Vetsuisse Faculty and Faculty of Medicine University of Bern National Reference Laboratory for Trichinellosis, Toxoplasmosis
5. Swiss Rabies Center (SRC) at the Institute of Immunology and Virology (IVI) in cooperation with Vetsuisse Faculty, University of Bern National Reference Laboratory for Rabies
6. Institute of Parasitology (IPZ), Vetsuisse Faculty University of Zurich, National Reference Laboratory for Echinococcosis
7. Research Station Agroscope Liebefeld-Posieux (ALP) Official feed inspection service and Listeria Monitoring
8. Institute for Virology and Immunology (IVI) National Reference Laboratory for West Nil Fever
9. National Reference Center for Poultry and Rabbit Diseases, University of Zurich (NRGK) West Nile Fever data in birds

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

Switzerland

2. Animal population

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

Number of animals held in farms in Switzerland in 2022 (data status May 2023). Number of animals slaughtered in 2022.
Living animals and herds: Coordinated census of agriculture. Swiss federal office of agriculture, Swiss federal office of statistics and the animal movement database. Slaughtered animals: Official meat inspection statistics (FSVO) and monthly agricultural statistics (Swiss Farmer's Federation).

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

The indicated number of holdings is identical to the number of farms holding respective species. Agriculture census counts the number of farms.

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

In general, the number of animal holdings is decreasing slightly year by year (exception in 2022: holdings with poultry).
Poultry industry: the number of holdings with laying hens increased by 7.1% and the one with broilers by 1.5%. Over 90% of poultry meat is produced by 4 major meat-producing companies. The number of holdings with breeders have a large fluctuation due to a large number of very small flocks on farms, which are counted in agricultural census. The number of holdings with more than 250 breeders was 38 (last year, 44), keeping over 90% of all breeders.

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

Average size of the farms in 2022: 47 cattle, 251 pigs, 45 sheep, 13 goats, 186 laying hens and 6964 broilers.

2.5. Additional information

Hatching eggs for the meat production line are imported on a large scale to Switzerland. In 2022, the number of imported fertilized eggs of the broiler type increased by 4.2 % to 38.5 million and the imported fertilized eggs of the fattening turkey type increased by 7.7 % to 494266 hatching eggs. Day-old-chicks are imported to Switzerland mainly from the breeding type (egg production line and meat production line are not differentiated). In total, 400852 day-old-chicks of the breeding type were imported in 2022. Compared to 2021, the import of day-old-chicks of the breeding type increased by 15.5%. There are a few imports of day-old chicks of laying hens, which increased to 58614 in 2022 (instead of 58100 in 2021). As in 2021, no day-old chicks of the broiler type were imported to Switzerland.

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

3. General evaluation*: Brucella

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

Brucellosis in humans is notifiable (ordinance of the Federal Department of Home Affairs (FDHA) on notification of observations on communicable diseases). The number of detections of *Brucella* (B.) spp. in humans has been rare for many years.
Brucellosis in animals is notifiable (TSV, Article 3: disease to be eradicated: bovine brucellosis since 1956, in sheep and goats since 1966; Article 4: disease to be controlled: brucellosis in rams). Government measures are applied to control brucellosis in sheep and goats (TSV, Articles 190-195), in cattle (TSV, Articles 150-157), in pigs (TSV, Articles 207 – 211) and in rams (*B. ovis*, TSV, Articles 233-236). Cattle, pigs, sheep and goats must be tested for brucellosis in cases where the causes of abortion are being investigated (TSV, Article 129). Vaccination is prohibited since 1961. Switzerland is officially recognized as free of brucellosis in cattle, sheep and goats by the EU (Bilateral Agreement on Agriculture, Veterinary Annex). Requirements of section 8.4.4 and 8.4.6 of the WOAH International Animal Health Code are fulfilled since 1963.

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

In 2022, 6 brucellosis cases in humans were reported (2021: 6 cases). In 2 cases *B. melitensis* were identified. 5 of the 6 cases were men aged between 14 and 72 years. In the last 10 years, the notified cases ranged from 1 to 9 cases per year.
In 2022, no cases of zoonotic brucellosis in animals were reported by the cantonal veterinarians. In the annual national survey of 2022, all blood samples from sheep and goats tested negative for *B. melitensis.*
Information, on how many animals were tested in veterinary diagnostic laboratories in the context of clinical investigation is available in the data tables in the annexes.

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

National surveys on an annual basis are carried out to document freedom from brucellosis in sheep and goat.

3.4. Additional information

See previous national reports for additional information and website of the FSVO.

* **For each zoonotic agent**
(a): Epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, feed, animal). If relevant: the official “disease status” to be specified for the whole country and/or specific regions within the country
(b): If applicable

4. Description of Monitoring/Surveillance/Control programmes system*: Cattle and *Brucella abortus/melitensis/suis*

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

Switzerland is officially acknowledged as free from bovine brucellosis since 1959. Bovine brucellosis is notifiable since 1956. Requirements of section 8.4.4 and 8.4.6 of the WOAH International Animal Health Code are fulfilled since 1963. Free status is recognized by EU (Bilateral Agreement on Agriculture, Veterinary Annex).

4.2. Measures in place[(b)]

Vaccination is prohibited. Actions to be taken in suspicious farms are the ban of all animal traffic and investigation of the whole herd as well as the placenta of calving cows. In confirmed cases (herds) all diseased cattle have to be killed. All placentas, abortion material and the milk of diseased and suspicious cows have to be disposed of. The barn has to be disinfected. Official meat inspection includes each carcass, its organs and lymphatic tissues on the prevalence of abnormal alterations. Whole carcasses need to be destroyed if lesions typical for brucellosis are confirmed by a laboratory test. Without lesions or in case of unclear laboratory results, the udder, genitals and the blood must be destroyed (VHyS, Annex 7).

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

Notification of suspicious cases and outbreaks is mandatory. Brucellosis in bovine animals is regulated as zoonosis to be eradicated (TSV, Art. 150 - Art. 157).

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

In 2022, no cases of *Brucella abortus/melitensis/suis* were reported to the FSVO by cantonal veterinarians.
There are no observations that would challenge the freedom of Swiss cattle population from brucellosis.

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

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

(b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website. (c): Mandatory: Yes/No.

(d): Minimum five years.

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

5. Description of Monitoring/Surveillance/Control programmes system*: Sheep and Goats and *Brucella melitensis/abortus/suis*

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

Switzerland is officially acknowledged as free from ovine and caprine brucellosis.

5.2. Measures in place[(b)]

Vaccination is prohibited. Actions to be taken in suspicious farms are ban of all animal traffic and the investigation of the whole herd. In confirmed cases the whole herd has to be killed immediately. All placentas, abortion material and the milk of diseased and suspicious animals have to be disposed of. The barn has to be disinfected. Official meat inspection is investigating each carcass, its organs and lymphatic tissues on the prevalence of abnormal alterations. Whole carcasses need to be destroyed if lesions typical for brucellosis could be confirmed by a laboratory test. Without lesions or in case of unclear laboratory results, the udder, genitals and the blood must be destroyed (VHyS, Annex 7).

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

Notification of suspicious cases and outbreaks is mandatory. Brucellosis in sheep and goats is regulated as zoonosis to be eradicated (TSV, Art. 190 - Art. 195).

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

In the annual national survey of 2022, a randomized sample of 482 sheep farms (6588 blood samples) and 410 goat farms (3050 blood samples) tested negative for *Brucella melitensis* using serological tests.
In addition, no cases of *Brucella melitensis/abortus/suis* in sheep and goats were reported to the FSVO by cantonal veterinarians in 2022.
There are no observations that would challenge the freedom of Swiss sheep and goat population from brucellosis.

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

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

(b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website. (c): Mandatory: Yes/No.

(d): Minimum five years.

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

6. General evaluation*: *Mycobacterium*

6.1. History of the disease and/or infection in the country[a]

Tuberculosis in humans is notifiable (ordinance of the Federal Department of Home Affairs (FDHA) on notification of observations on communicable diseases). Human tuberculosis cases transmitted by infected cattle through the consumption of raw milk are very rare nowadays. They correspond to less than 2% of all reported human tuberculosis cases.
In animals, tuberculosis is notifiable (TSV, Article 3: disease to be eradicated and 158 – 159). Vaccination is prohibited. Requirements of section 8.11.4 of the WOAH International Animal Health Code are fulfilled. Free status is recognized by EU (Bilateral Agreement on Agriculture, Veterinary Annex).

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

In 2022, 1 human case (*M. bovis)* was reported. The case was a young migrant in which the consumption of raw milk can be assumed to be the origin of infection. *M. bovis* and *M. caprae* are reported on a low scale (not more than 13 cases per year since 2005). As Swiss livestock is recognized free of bovine tuberculosis today, human cases are anticipated to be mainly attributable to stays abroad or to the consumption of foreign food products. Otherwise, an infection in Switzerland cannot be excluded in the elderly people by the consumption of unpasteurized milk during their childhood, when the disease in Swiss cattle was more frequent.
In 2022, no tuberculosis outbreaks in animals were reported to the FSVO by the cantonal veterinarians. Tuberculosis cases in animals are reported extremely rarely (not more than 2 cases per year). In 2013 and 2014, a total of 11 cases were reported due to two unusual outbreaks in cattle (one due to *M. bovis*, the other due to *M. caprae*). Risk factors for the incursion of the disease are international trade with animals and summer grazing of Swiss cattle in risk areas such as the border areas with Austria and Germany where contact with infected cattle or wildlife cannot be excluded.
In 2022 two cats tested positive for *M. microti. M. microti* is rarely found in Switzerland, mainly in cats and camelids. Information on the amount of animals tested in veterinary diagnostic laboratories in the context of clinical investigation is available in the data tables in the annexes.
At slaughterhouses, 6 lymphatic tissue and organ material of cattle suspicious for bovine TB were taken during meat inspection in 2022. All samples tested negative by real-time PCR and culture. Within the framework of the LyMON monitoring program in 2022, lymphatic tissue with unspecific alterations of 94 cattle were analyzed using a graduated diagnostic scheme (pathological investigation, Ziehl-Neelsen staining, genus-specific mycobacterial real-time PCR, MTBC culture and histology). All samples were negative for bacteria of the *M. tuberculosis*-complex.
In addition, lymphatic tissue and rarely unspecific alterations of organs of 193 wild animals (mainly red deer) were investigated in 2022. There was no evidence of tuberculosis infections in wildlife in 2022.
As almost every year, a few cultures revealed growth of non-tuberculous mycobacteria (such as *M. vaccae, M. nonchromogenicum, M. diernhoferi, M. avium* ssp. *hominissuis*), which are known to be in the majority of cases nonpathogenic for humans or animals. These non-tuberculous mycobacteria are mainly found in the environment, in soil and water.

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

The detection of suspect cases during meat inspection in slaughterhouses is a challenge in a country with a very low disease prevalence. The special monitoring program LyMON at the slaughterhouses continues to keep awareness at slaughterhouses high.

6.4. Additional information

[1] See previous national reports for additional information and website of the FSVO.
[2] Ghielmetti, G. et al. (2020) Mycobacterial infections in wild boars (*Sus scrofa*) from southern Switzerland:
Diagnostic improvements, epidemiological situation and zoonotic potential. Transboundary and Emerging Diseases
[3] Ghielmetti, G. et al. (2021). Evaluation of Three Commercial Interferon-γ Assays in a Bovine Tuberculosis Free Population. Frontiers in Veterinary Science
[4] Ghielmetti, G. et al. (2021). Mycobacterium microti Infections in Free-Ranging Red Deers (Cervus elaphus). Emerging Infectious Diseases
[5] Ghielmetti, G. et al. (2021). *Mycobacterium helveticum* sp. nov., a novel slowly growing mycobacterial species associated with granulomatous lesions in adult swine. International Journal of Systematic and Evolutionary Microbiology

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

7. Description of Monitoring/Surveillance/Control programmes system*: Cattle and M. bovis / M. caprae / M. tuberculosis

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

Switzerland is officially acknowledged as free from bovine tuberculosis since 1959.

7.2. Measures in place[(b)]

Actions to be taken in suspicious farms are ban of all animal traffic and investigation of the whole herd. In confirmed cases (herds) all diseased or suspicious cattle has to be slaughtered and the milk of them is disposed. The barn has to be disinfected.

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

Bovine tuberculosis (*M. bovis*, *M. caprae* and *M. tuberculosis*) is notifiable (TSV, Art. 3: disease to be eradicated and Art. 158 - Art. 165). Notifications of suspicious cases are mandatory.

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

In 2022, no cases of tuberculosis in cattle were reported to the FSVO by cantonal veterinarians. There were no further outbreaks in cattle since the last two unusual outbreaks in 2013 and 2014.

* **For all combinations of zoonotic agents and matrix (Food, Feed and Animals) for 'Prevalence' and 'Disease Status': one text form reported per each combination of matrix/zoonoses or zoonotic agent**
(a): Sampling scheme (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) + testing scheme (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow (parallel testing, serial testing) to assign and define cases. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.
(b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website. (c): Mandatory: Yes/No.
(d): Minimum five years.
(e): Relevance of the findings in animals to findings in foodstuffs and for human cases (as a source of infection).

8. General evaluation*: *Campylobacter*

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

Human campylobacteriosis is notifiable (ordinance of the Federal Department of Home Affairs (FDHA) on notification of observations on communicable diseases). Campylobacteriosis is the most commonly reported food borne infectious disease in humans.
In animals, campylobacteriosis is also notifiable (TSV, Article 5: disease to be monitored).

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

The number of notified human campylobacteriosis cases increased from 6'759 in 2021 to 7'546 confirmed cases in 2022. Slightly more men (56%) than women (44%) were affected. In accordance with previous years, most cases were caused by *C. jejuni* (58% of all cases, in 31% of cases no distinction was made between *C. jejuni* and *C. coli*). In 2022, the typical summer peak occurred in the months of July and August accounting for 1'041 cases[1].
84 cases of campylobacteriosis were reported in animals to the FSVO by cantonal veterinarians in 2022. The number of reports decreased steadily from 2020 until 2022. As usual, dogs, cattle and cats were affected mainly.
Healthy broilers are often carriers of *Campylobacter jejuni* and to a lesser extend of *C. coli* and carcasses might become contaminated during slaughter. The occurrence of this pathogen in broiler chicken farms is studied as part of the antimicrobial resistance monitoring program. Broilers are sampled every second year (since the year 2015) by collecting caecal samples at the slaughterhouse level. In the years, when broilers are not tested, pigs are tested for *Campylobacter* by examining caecal samples. Since 2021, also calves are monitored in addition to the pigs.
In 2022, 266 of 800 broilers (33%) were *Campylobacter*-positive (204x *C. jejuni*, 34x *C. coli, 28x C. jejuni and C. coli)*. The prevalence of 33% was within the range of the previous years (28% in 2018 (95CI 25% - 32%) and 38% in 2013 (95CI 33% - 42%)). In each year, a typical summer peak can be observed.
There are no pig and calve data for the year 2022. In 2021, 191 of 289 slaughter pigs (66%) were *Campylobacter coli*-positive (191x *C. coli)*. Thus, the prevalence stayed at the same level as in 2019. Compared to the year 2017 (57%) the percentage of positive samples increased slightly. In addition, 143 of 294 calves (49%) were *Campylobacter jejuni*-positive (143x *C. jejuni)*. As 2021 was the first time that calves were tested, there are no data from previous years for comparison.

Mainly the handling of raw poultry meat and the following cross-contamination of other foods leads to human cases of campylobacteriosis. Cattle and the contact to pets were shown to be less important as sources of human campylobacteriosis. It is assumed that the high rate of disease in young adults aged 15 to 24 years is attributable to less regard for kitchen hygiene at this age and increased travel. Above average infections in summer (July/August) could possibly be related to the higher infection rate in poultry flocks, frequent barbecue activities and travels abroad, the peak around New Year's Eve to increased consumption of meat dishes such as "Fondue Chinoise" (with resulting crosscontaminations) and travelling abroad.

8.3. Additional information

1: Ghielmetti, G., Seth-Smith, H.M.B., Roloff, T., Cernela, N., Biggel, M., Stephan, R., Egli, A. (2023). Whole genome-based characterization of Campylobacter jejuni from human patients with gastroenteritis collected over an 18-year period (2003-2020). Microbial Genomics 9:000941 DOI 10.1099/mgen.0.000941
See previous national reports for additional information and website of the FSVO.

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

9. Description of Monitoring/Surveillance/Control programmes system*: Fresh poultry meat, poultry meat preparations and poultry meat products and *Campylobacter*

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

The industry takes responsibility for the monitoring of the poultry meat production in a system of selfauditing following the HACCP (Hazard Analysis and Critical Control Points) principles. Results of the *Campylobacter* monitoring of the largest poultry slaughterhouses and poultry meat producers are available, covering more than 90% of the poultry meat production. Carcasses, fresh poultry meat, poultry meat preparations and poultry meat products are tested at different stages, such as slaughterhouses, cutting plants, and processing plants. No data of imported poultry meat are included in the analysis.

9.2. Measures in place[(b)]

The Ordinance on Hygiene (SR 817.024.1) lays down a process hygiene criterion for broiler carcasses. At the slaughterhouse level, a certain number of broiler carcasses must be tested quantitatively for *Campylobacter* after chilling. *Campylobacter* counts must thereby not exceed a certain limit too frequently. Otherwise, the slaughterhouse must implement measures (improvement of hygiene, review of process control etc.) to ensure adequate *Campylobacter* counts on the broiler carcasses.

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

None.

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

Within the framework of the self-auditing system of the poultry meat industry, a total of 1'197 examinations including samples from broiler and turkey meat (carcasses and meat) were performed in 2022. Of them, 322 (26.9%) proved to be positive for *Campylobacter* spp. (2021: 21.2%): 138x *C. jejuni* (42.9%), 26x *C. coli* (8.1%), and 158x unspecified (49.1%); see also *Campylobacter* poultry meat table.
Thereby, 287 (32.2%) of the 890 tested broiler carcass samples and 35 (11.5%) of the 304 tested broiler meat samples were positive for *Campylobacter*. Moreover, none (0%) of the 3 turkey meat samples (proved to be positive for *Campylobacter*.
In order to verify the correct implementation of the process hygiene criterion for *Campylobacter* on broiler carcasses by the food business operators, the 890 samples from broiler carcasses were analyzed quantitatively for *Campylobacter* in 2022. Overall, 98 (11.0%) of the 890 tested samples from broiler carcasses exceeded 1'000 CFU/g. In addition, 189 (21.2%) of the 890 tested samples from broiler carcasses showed *Campylobacter* counts above the detection limit but counts were ≤1'000 CFU/g. Of all 287 *Campylobacter*-positive samples (below and above 1'000 CFU/g), 65 samples showed counts in the range from >detection limit to ≤100 CFU/g, 124 samples were in the range from >100 to ≤1'000 CFU/g, 72 samples were in the range from >1'000 to ≤10'000 CFU/g and 26 samples exceeded 10'000 CFU/g.
Considering the *Campylobacter* species, the *Campylobacter* counts were distributed as follows: *Campylobacter jejuni*-positive (137 samples) - 31 samples in the range from >detection limit to ≤100 CFU/g, 59 samples in the range from >100 to ≤1'000 CFU/g, 34 samples in the range from >1'000 to ≤10'000 CFU/g and 13 samples exceeded 10'000 CFU/g; *Campylobacter coli*-positive (26 samples) - 9 samples in the range from >detection limit to ≤100 CFU/g, 12 samples in the range from >100 to ≤1'000 CFU/g, 5 samples in the range from >1'000 to ≤10'000 CFU/g and no sample exceeded 10'000 CFU/g; *Campylobacter*-positive without typing (124 samples) - 25 samples in the range from >detection limit to ≤100 CFU/g, 53 samples in the range of >100 to ≤1'000 CFU/g, 33 samples in the range of >1'000 to ≤10'000 CFU/g and 13 samples exceeded 10'000 CFU/g.

9.5. Additional information

The poultry industry encourages farmers to lower the *Campylobacter* burden by incentives for *Campylobacter*-free herds at slaughter. No immunoprophylactic measures are approved.

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

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

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

programme approved by the EC, please provide link to the specific programme in the Commission`s website. (c): Mandatory: Yes/No.
(d): Minimum five years.
(e): Relevance of the findings in animals to findings in foodstuffs and for human cases (as a source of infection).

10. General evaluation*: *Coxiella*

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

Coxiellosis in humans is notifiable (ordinance of the Federal Department of Home Affairs (FDHA) on notification of observations on communicable diseases). The number of detections of *C. burnetii* in humans has been stable for the past years.
Coxiellosis in animals is notifiable (TSV, Article 5: disease to be monitored). Cumulative abortions in cattle after three months of pregnancy and every abortion in sheep, goats and pigs have to be reported to a veterinarian. If more than one animal in a holding of ruminants aborts within the space of four months, or if an abortion occurs in a dealer's stable or during alpine pasturing, cattle, sheep and goats undergo laboratory investigation. If clinically suspected cases are confirmed by a laboratory, the cantonal veterinarian is notified.
The seroprevalence of the pathogen in cases of abortion is estimated about 16% in cattle. The seroprevalence of *Coxiella burnetii* in small ruminants was determined in a study in 2017 by commercial ELISA from a representative sample of 100 sheep flocks and 72 goat herds. Herd-level seroprevalence was 5.0% (95% CI: 1.6-11.3) for sheep and 11.1% (95% CI: 4.9-20.7) for goats. Animal-level seroprevalence was 1.8% (95% CI: 0.8-3.4) for sheep and 3.4% (95% CI: 1.7-6) for goats.

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

In 2022, 89 human cases of Coxiellosis were reported corresponding to a notification rate of 1.0 per 100'000 inhabitants. Compared to 2021, the number of cases decreased (2021: 111 cases). However, the number in 2022 is still higher compared to years before 2021. An outbreak as an explanation could not be detected. Cases occurred throughout Switzerland and spread throughout the year.
Predominantly men (58%) of adult age were affected.
In 2022, 323 cases of coxiellosis, mainly in ruminants, were reported to the FSVO by cantonal veterinarians. Since 2020 the number of notifications in animals, especially in cattle (85% of all notifications), has risen significantly. This significant increase in reporting in cattle is mainly due to the introduction of more sensitive detection methods (real time PCR) since 2020.
In sheep and goats underreporting is estimated to be higher than in cattle.
Information, on how many animals were tested in veterinary diagnostic laboratories in the context of clinical investigation is available in the data tables in the annexes.
Coxiella burnetii as a cause of abortions is much more often reported in cattle. However, infected cattle are less important as source of infection for humans than infected sheep and goats. This could also be seen in the outbreak in Ticino in spring 2019, where two infected goat herds were most likely the source of human infection. Especially during lambing of small ruminants the risk of human infection is higher.

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

Q-Fever in humans is again notifiable since 2012. Disease awareness and knowledge how to avoid infections must be improved. Farmers need to be motivated to send abortion material to the laboratories for further investigation.

10.4. Additional information

[1] See previous national reports for additional information and website of the FSVO.
[2] Sara Vidal, Kristel Kegler, Gilbert Greub, Sebastien Aeby, Nicole Borel, Mark P Dagleish, Horst Posthaus, Vincent Perreten, Sabrina Rodriguez-Campos: Neglected zoonotic agents in cattle abortion: tackling the difficult to grow bacteria. BMC Vet Res . 2017 Dec 2;13(1):373.

[3] Magouras I, Hunninghaus J, Scherrer S, Wittenbrink MM, Hamburger A, Stärk KD, SchüpbachRegula G.: *Coxiella burnetii* Infections in Small Ruminants and Humans in Switzerland. Transbound Emerg Dis 2017; 64(1): 204-212.

* **For each zoonotic agent**

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

11. General evaluation*: *Cysticercus*

Switzerland

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

Cysticercosis in animals and humans is not notifiable. Cattle, small ruminants and swine are inspected at slaughter for cysticerci. According to the ordinance on hygiene during slaughter (VHyS; SR 817.190.1) all cattle older than 8 months must be checked for cysticerci by incisions into the jaw muscles (*M. masseter* and *M. pterygoideus* on both sides) and incisions into the heart. Carcasses with few cysticerci must be frozen before they can be processed further, whereas carcasses with generalized infections of the musculature will be confiscated.

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

Taenia saginata cysticerci in cattle remain an issue of food safety (zoonotic) and economic significance. Based on routine slaughterhouse reports, the prevalence is likely underestimated in the Swiss cattle population. Data from carcasses with generalized cysticercosis have been documented in Fleko (Swiss meat inspection statistics) for many years, however without systematic molecular species identification. Since 2020, cases with non-generalized infections by few cysticerci are also documented.
In 2022, cases of generalized cysticercosis were detected in 19 cattle (*T. saginata*) and 3 sheep (species not identified). The year before, there were 27 and 3 cases in cattle and sheep, respectively. Weak or non-generalized infections (*Taenia* spp., without species identification) were detected in 845 cattle and 15 sheep in 2022 (2021: 1'002 cattle, 32 sheep and 1 goat).

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

None.

11.4. Additional information

See previous national reports for additional information and website of the FSVO.

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

12. General evaluation*: *Echinococcus*

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

Echinococcus granulosus sensu lato, the causative agent of cystic Echinococcosis (CE) has been nearly extinct in Switzerland. Sporadically, imported cases are diagnosed in humans or animals (dogs or cattle and sheep).
Alveolar echinococcosis (AE) is caused by the fox tapeworm *Echinococcus multilocularis.* Infections in intermediate or accidental hosts may lead to serious disease. The parasite is endemic in Switzerland and few cases in humans and domestic animals are continuously identified.
Echinococcosis is notifiable in animals (TSV, Article 5: disease to be monitored) but not in humans.

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

The hospitalization rate of human AE-cases (patients who were hospitalized for the first time due to AE) is stable since 2015 (0.68 cases per 100'000 inhabitants in 2021 (hospital-based data)). However, the hospitalization rate should not be considered equal to the number of new infections. Albeit the risk of infection human cases of AE remains low.

In 2022, 16 cases in animals were reported to the FSVO by cantonal veterinarians (in 7 dogs, 3 foxes, 2 wild boars, 2 beavers, 1 horse and 1 wallaby). The reported cases were within the range of previous years. No systematic monitoring of wild animals is established and therefore, the cases reported do not represent the real endemic situation. The prevalence of *E. multilocularis* in foxes, the main reservoir, is estimated to lie between 20% and 70%, with lower prevalence in the alpine regions and higher prevalence in the Swiss Plateau and Jura.

The Institute of Parasitology of the University of Zurich has examined 573 hunted foxes from the Zurich region in a small surveillance study conducted between 2016 and 2022. All in all, 44% were positive for *E. multilocularis* (range: 25% – 61%). In 2012 and 2013, 157 of 300 hunted foxes from Eastern Switzerland (54%) were positive for *E. multilocularis.*

Fox tapeworm eggs can be found in fresh foodstuff (outdoor cultivation) and several studies report on microscopic detection of taeniid eggs in vegetables (Alvarez Rojas et al., 2018) and in fresh produce (lettuce) (Guggisberg et al., 2020). In a field study in 2020, DNA of *E. multilocularis* was detected in 2 of 157 (1.2%) lettuce samples.

A research project on the prevalence of *E. multilocularis* in slaughter pigs and associated risk factors was conducted between 2016 and 2018. In total, 456 pig livers with lesions suggestive of *E. multilocularis* infection were submitted of which 200 livers were confirmed as *E. multilocularis*-positive. Related to the total number of pigs slaughtered during the study period the prevalence was below 0.1%. No geographical clusters were observed. Livers are destroyed at slaughterhouse as they are not fit for human consumption. Pigs are - like humans - accidental hosts for *E. multilocularis*. Thus, infected pigs are not a source of infection for humans. Host densities (red foxes and rodent species) and predation rates are key drivers for the spread of parasite eggs and of major importance for the infection risk of intermediate or accidental hosts.

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

Owners of dogs that hunt and eat mice are encouraged to deworm their dogs monthly. The public is advised not to feed or tame foxes but to keep them at a distance. The monthly distribution of anthelmintic baits (Praziquantel) for foxes proved to be effective, but no control programs are currently implemented.

12.4. Additional information

See previous national reports for additional information and website of the FSVO.

[1] Alvarez Rojas, C.A. C, Mathis A, Deplazes P 2018. Assessing the contamination of food and the environment with *Taenia* and *Echinococcus* eggs and their zoonotic transmission. Current Clinical Microbiology Reports https://doi.org/10.1007/s40588-018-0091-0

[2] Information on fox tapeworm: www.paras.uzh.ch/infos, Expert group ESCCP_CH and guidelines for deworming of dogs and cats: http://www.esccap.ch

[3] Guggisberg, A., R., Alvarez Rojas, C., A., Kronenberg, P., A., Miranda, N., Deplazes, P.: A sensitive, one-way sequential sieving method to isolate helminths' eggs and protozoal oocysts from lettuce for genetic identification. Pathogens 9, 0624 (2020):

In 2020, a project developed and validated a simple and practical method for the simultaneous detection of parasite stages from fresh produce (lettuce) for human consumption by a one-way isolation test kit followed by genetic identification (PCR, sequencing). The detection limits in the recovery experiments were 4 *Toxocara* eggs, 2 *E. multilocularis* eggs and 18 *T. gondii* oocysts in 300 g of lettuce. In a field study, helminth DNA was detected in 14 of 157 lettuce samples including *Hydatigera taeniaeformis* (4 samples), *T. polyacantha* (3), *T. martis* (1), *E. multilocularis* (2, 1.2%) and *Toxocara cati* (4). *Toxoplasma gondii* was detected in 6 of 100 samples. The developed diagnostic strategy is highly sensitive for the isolation and genetic characterization of a broad range of parasite stages from lettuce.

Switzerland

* **For each zoonotic agent**
(a): Epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, feed, animal). If relevant: the official “disease status” to be specified for the whole country and/or specific regions within the country
(b): If applicable

Switzerland

13. General evaluation*: *Francisella*

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

Tularemia in humans is a notifiable disease (ordinance of the Federal Department of Home Affairs (FDHA) on notification of observations on communicable diseases). Positive test results have to be declared to the Federal Office of Public health (FOPH) and the cantonal physicians. Physicians have to fill in a form concerning information on manifestation and exposure and send it to the cantonal physician who then forwards this form to the Federal Office of Public Health. Tularemia is also notifiable in animals (TSV, Article 5: disease to be monitored).

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

114 cases of tularemia were registered at the Federal Office of Public Health in 2022. The notification rate was 1.3 cases per 100'000 inhabitants. Compared to the previous year, the number of cases decreased (226 cases in 2021). 60 cases were men and 54 women, aged between 1 and 85 years. Tick bite was the most frequent probable source of infection. Other reported sources of infection for humans are contact to wild animals (mainly mice and hares), bites of insects as well as the inhalation of dust/aerosol and contaminated water or food. Those most at risk are mainly gamekeepers, hunters, people who work in agriculture or forestry, wild animal veterinary practitioners and laboratory staff.
Tularemia affects mainly wild animals, especially hares and rodents but also zoo animals. In 2022, 8 cases in animals were reported to the FSVO by cantonal veterinarians, all in hares. This is comparable to the recent years. The increase in reported numbers in 2018 was due to much more tested hares in 2018. Since than the number of tested hares decreased again. Laboratory data show, that the positivity rate was not higher compared with other years (38% (2018), 46% (2019, 2020), 40% (2021)). In 2022, the positivity rate was 50%.
In 2021 and 2019 *Francisella tularensis subsp. holarctica* was detected in Switzerland in two cats (see case report 2019). This were very rare events. Published cases of *F. tularensis* in cats so far were related to North America (Baldwin et al., 1991; Woods et al., 1998; Farlow et al., 2001; DeBey et al., 2002; Staples et al., 2006). *F. tularensis subsp. holarctica* seems to be of minor importance in North America as mainly *F. tularensis subsp. tularensis* were found.
From 2020 until 2022, no monitoring in ticks was conducted. In 2019, between April and August ticks were collected in a specific area in the canton of Bern. The ticks were homogenized in pools and analyzed by PCR. Two samples were positive for *F. tularensis subsp. holarctica*. In a study from 2018 the prevalence of *F. tularensis* in ticks in Switzerland was estimated to be around 0.02%.
In addition, from 2018 to 2020 a total of about 1250 tick samples have been collected in the framework of a citizen science project involving the app "tick prevention". Every citizen living in Switzerland and using the app could send in ticks that they had removed from themselves to the national reference center (for study purposes, not for individual testing for pathogens). Analysis of this project are still ongoing.

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

None.

13.4. Additional information

[1] See previous national reports for additional information and website of the FSVO or website of the FOPH.
[2] Wittwer et al, 2018: Population Genomics of *Francisella tularensis subsp. holarctica* and its implication on the eco-epidemiology of Tularemia in Switzerland; Frontiers in Cellular and Infection Microbiology, Volume 8, Article 89.
[3] Publication in the FOPH Bulletin 18/18 from 30.04.2018.
[4] Sonja Kittl, et al.: First European report of *Francisella tularensis subsp. holarctica* isolation from a domestic cat. Vet Res . 2020 Aug 31;51(1):109.

[5] Peterhans, S., Ghielmetti, G., Botta, C., Friedel, U., Hilbe, M., Schneeberger, M., Stephan, R. (2018). Case of the month: Tularemia in a European brown hare (*Lepus europaeus*): a disease with an increasing veterinary public health relevance. Schweizer Archiv für Tierheilkunde 160, 673–675.

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

Switzerland

14. General evaluation*: *Listeria*

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

Listeriosis in humans is notifiable (ordinance of the Federal Department of Home Affairs (FDHA) on notification of observations on communicable diseases). People mainly affected are adults aged over 60.
Listeriosis in animals is notifiable (TSV, Article 5: disease to be monitored).

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

In 2022, 78 human cases were reported (notification rate: 0.9 per 100'000 inhabitants). Thus, the number of notifications was higher compared to previous years. This was due to an outbreak with 20 reported cases. Smoked trout was identified as the source and was eliminated. Persons over 65 years of age remained the most affected age group and more men (55%) than women (45%) were reported. In 2022, 15 cases of animal listeriosis were reported to the FSVO by cantonal veterinarians. The reported cases were within the range of previous years. Affected are mainly ruminants: cattle (53%), goats (18 %) and sheep (17%). Information, on how many animals were tested in veterinary diagnostic laboratories in the context of clinical investigation is available in the data tables in the annexes. *Listeria monocytogenes* is repeatedly leading to disease in humans. Even if the number of cases is relatively small, the high lethality makes it very significant. Monitoring the occurrence of *Listeria* spp. at different stages in the food chain is extremely important to prevent infections due to contaminated food. Dairy products such as cheeses made from unpasteurized milk or soft cheeses that are eaten with the rind are potential sources of infection. With regard to *Listeria* spp. in the dairy industry, the situation has remained on a constantly low level for many years. In animals, the reported listeriosis cases have remained stable at a low level over the last years.

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

None.

14.4. Additional information

See previous national reports for additional information and website of the FSVO.

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

15. Description of Monitoring/Surveillance/Control programmes system*: *dairy products and Listeria monocytogenes*

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

Agroscope Food Microbial Systems (MSL) is running a *Listeria* monitoring program (LMP) for early detection of *Listeria* spp. in production facilities. Products are tested for *Listeria* spp. as part of the quality assurance programs.

15.2. Measures in place[(b)]

The concerned food has to be confiscated and destroyed. Depending on the situation, the product is recalled and a public warning is submitted. The implementation of a hygiene concept in order to control the safety of the products is in the responsibility of the producers. All larger cheese producers have a certified quality and hygiene management system in place.

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

None.

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

In the framework of the *Listeria* Monitoring Program (LMP), 1'128 samples (environmental, milk and cheese samples) were tested for the presence of *Listeria* spp. In 2022, *Listeria monocytogenes* were detected 4 times (0.35%), once in cow milk and three times associated to cheese/cheese producing environment. Other species of *Listeria* were found in 25 samples (2.22%).
In a master thesis recently completed at the Institute for Food Safety and Hygiene of the University of Zurich (sample survey 2021), no *Listeria monocytogenes* were detected in 100 raw milk alpine cheeses from different regions of Switzerland.

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

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

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

(c): Mandatory: Yes/No.

(d): Minimum five years.

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

16. General evaluation*: *Salmonella*

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

Salmonellosis in humans is notifiable (ordinance of the Federal Department of Home Affairs (FDHA) on notification of observations on communicable diseases).
Salmonellosis in animals is notifiable (TSV, Article 4: disease to be controlled).

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

In 2022, 1'838 human cases were reported representing a notification rate of 21 cases per 100'000 inhabitants (2021: 1'479 cases or 17/100'000), which is an increase compared to previous years. As in previous years, the most affected age group was children under 5 years. The typical seasonal increase of notifications during summer and autumn was also observed in 2022. The most frequently reported serovars remained ***S.*** Enteritidis (39%), ***S.*** Typhimurium (16%) and monophasic ***S.*** Typhimurium (1,4,[5],12,i:-) (11%).
The longstanding *S.* Enteritidis control program showed its effect in the decline of human cases in the years around 2000. However, salmonellosis is still the second most frequent zoonosis in Switzerland and showed an increasing trend in human cases since 2015.
Stepping up and expanding the national control program might be needed in order to further reduce human salmonellosis cases.

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

Control measures were implemented according to Commission Regulations (EC): No. 200/2010 (breeding flocks), No. 517/2011 (laying hen flocks), No. 200/2012 (broilers) and No. 1190/2012 (turkeys).
The Hygiene Ordinance lays down limits for *Salmonella* in various foods. If these limits are exceeded, the cantonal laboratories are required to report this to the FSVO. The foods affected are confiscated and destroyed. Depending on the situation, the products may be recalled, and a warning is issued to the population. All larger manufacturers have a certified quality and hygiene management system in place.

16.4. Additional information

Biggel, M., Horlbog, J., Nüesch-Inderbinen, M., Chattaway, M.A., Stephan, R. (2022). Epidemiological links and antimicrobial resistance of clinical Salmonella enterica ST198 isolates: a nationwide microbial population genomic study in Switzerland. Microbial Genomics 8(10). doi: 10.1099/mgen.0.000877.
See previous national reports for additional information and website of the FSVO.

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

17. Description of Monitoring/Surveillance/Control programmes system*: All animals and *Salmonella* spp.

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

Salmonellosis is notifiable in all animals (passive surveillance). Animal keepers, livestock inspectors, AI technicians, animal health advisory services, meat inspectors, slaughterhouse personnel, police and customs officers have to report any suspected case of salmonellosis in animals to a veterinarian. If *Salmonella* are confirmed by a diagnostic laboratory, this must be reported to the cantonal veterinarian. Cases in cows, goats or dairy sheep must be reported to the cantonal health and food safety authorities.

17.2. Measures in place[(b)]

If biungulates are affected, the sick animals must be isolated and the whole herd and the environment must be tested. Healthy animals from this herd may be slaughtered with a special official permit and subject to appropriate precautions at the slaughterhouse. Milk from animals that are excreting *Salmonella* must not be used for human consumption and may only be used as animal feed after pasteurization or boiling. If the disease occurs in animals other than biungulates, appropriate action must likewise be taken to prevent any risk to humans.

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

Salmonellosis in animals is notifiable (TSV, Art. 4: diseases to be controlled and Article 222-227).

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

Salmonellosis in all animals is regularly registered.
In 2022, 114 salmonellosis cases in animals were reported to the FSVO by cantonal veterinarians. As usual mainly cows (32%), reptiles (28%) and dogs/cats (21%) were affected. In the past 10 years reported cases ranged between 63 and 127 per year.
Information, on how many animals were tested in veterinary diagnostic laboratories in the context of clinical investigation is available in the data tables in the annexes.

17.5. Additional information

[1] See previous national reports for additional information and website of the FSVO. [2] Vogler, B.R., et al. (2021). Low occurrence of *Salmonella* spp. in wild birds from a Swiss rehabilitation centre. Veterinary Record open.

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

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

(b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website. (c): Mandatory: Yes/No.

(d): Minimum five years.

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

18. Description of Monitoring/Surveillance/Control programmes system*: Poultry and *Salmonella* spp.

Switzerland

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

There is a control program in place based on Commission Regulation (EC) No. 200/2010 regarding breeding flocks with more than 250 places, Commission Regulation (EC) No. 517/2011 regarding laying hen flocks with more than 1'000 places, Commission Regulation (EC) No. 200/2012 regarding broilers with more than 333 m^2 floor space and Commission Regulation (EC) No. 1190/2012 regarding fattening turkeys with more than 200 m^2 floor-space. Subject to state control measures are *S.* Enteritidis, *S.* Typhimurium and monophasic *S.* Typhimurium (1,4,[5],12,i:-); for breeding flocks additionally *S.* Hadar, *S.* Infantis and *S.* Virchow.

Measures in place[(b)]

18.2.

Control measures are taken according to the Swiss ordinance of epizootics (TSV, Article 255-261). If *Salmonella* serotypes subject to control measures are detected in the environment, there is a suspicion of *Salmonella* infection. In the event of a suspected infection, the official veterinarian samples 20 killed animals or fallen stock per flock and submits them to bacteriological testing for *Salmonella*. If *S.* Enteritidis, *S.* Typhimurium or monophasic *S.* Typhimurium (1,4,[5],12,i:-) are detected in the animal samples, or in the case of breeding flocks *S.* Hadar, *S.* Infantis and/or *S.* Virchow, a case of *Salmonella* infection is reported. In this case, animal movements from this holding are prohibited (TSV**,** Article 69) in order to prevent spread of disease. The flocks must not be changed either by moving animals to other flocks or by introducing animals from other flocks.
In breeding flocks, the animals are culled and the eggs are no longer allowed to be used for breeding purposes. If laying hens, broilers or fattening turkeys are affected, the flocks can be culled or slaughtered. Fresh meat and eggs either have to be disposed of or subjected to treatment in order to destroy the *Salmonella* before being marketed as food.
The animal movement ban is lifted when all animals have been culled or slaughtered and the premises were cleaned and disinfected. Freedom of the premises from *Salmonella* should be proven by means of bacteriological testing. Vaccination is prohibited.

18.3. Notification system in place to the national competent authority[(c)] *Salmonella* infection in poultry is notifiable (TSV, Art. 4 and Article 255-261).

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

In 202**2,** 2 cases were reported in the framework of the control program in laying hens (1x *S.* Enteritidis, 1x *S.* Typhimurium). Further 5 suspect cases (positive environmental samples not confirmed in animal samples) were detected:
2 in laying hens >1'000 places (*S.* Enteritidis (1x), *S.* Typhimurium (1x)) and 3 in broilers > 333m^2 floor space (*S.* Enteritidis (3x)).
In addition, several serovars not covered in the control program were detected in environmental samples. Outside from the control program, 7 smaller flocks were tested positive: 5 in laying hens (*S.* Typhimurium (3x), *S.* Enteritidis (2x)), in broilers (*S.* Typhimurium (1x)) and in a purebred chicken (*S.* Typhimurium (1x)). Furthermore, there were 7 suspect cases in 2022: 6 in small laying hen flocks (*S.* Typhimurium (3x), *S.* Enteritidis (2x, one double infection with S. Livingstone), monophasic *S.* Typhimurium (1,4,[5],12,i:-)) (1x)) and one in chicken unspecified (*S.* Enteritidis (1x)).
The results of the control program show that the *Salmonella* prevalence in Switzerland is low. The target of max. 1% *Salmonella*-positive flocks regarding the controlled serovars in broilers, turkeys and breeding flocks as well as max. 2 % in laying hens could be reached in 2021 according to Swiss law, as every year so far. Most cases occurred in laying hens. Switzerland wants to maintain the current situation by applying the aforementioned control measures.

18.5. Additional information

[1] See previous national reports for additional information and website of the FSVO.
[2] From January 2020 until May 2021 an outbreak with S. Jerusalem was detected in Switzerland concerning 9 poultry holdings in 8 different cantons. All strains showed a very close relationship to a strain isolated in feed for poultry. Thus, contaminated feed was the most likely cause of this outbreak, showing the necessity of the heat-treated for feedstuff. More details can be found in the publication (Horlbog**,** J., et al. (2021). Feedborne *Salmonella enterica* serovar Jerusalem outbreak in different organic poultry flocks in Switzerland and Italy linked to soya expeller. Microorganisms)

Switzerland

* **For all combinations of zoonotic agents and matrix (Food, Feed and Animals) for 'Prevalence' and 'Disease Status': one text form reported per each combination of matrix/zoonoses or zoonotic agent**
(a): Sampling scheme (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) + testing scheme (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow (parallel testing, serial testing) to assign and define cases. If programme approved by the EC, please provide link to the specific programme in the Commission`s website. (b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website. (c): Mandatory: Yes/No. (d): Minimum five years. (e): Relevance of the findings in animals to findings in foodstuffs and for human cases (as a source of infection).

Switzerland

19. Description of Monitoring/Surveillance/Control programmes system*: Poultry meat and *Salmonella*

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

The industry takes responsibility for the monitoring of the poultry meat production in a system of selfauditing following the HACCP principles. In addition, the Ordinance on Hygiene (SR 817.024.1) lays down limits for *Salmonella* in various foods (food safety criteria and process hygiene criteria). Results of the *Salmonella* monitoring of the largest poultry slaughterhouses and poultry meat producers are available, covering more than 90% of the poultry meat production. Carcasses, fresh poultry meat, poultry meat preparations and poultry meat products are tested at different stages such as slaughterhouses, cutting plants and processing plants. No data of imported poultry meat are included in the analysis.

19.2. Measures in place[(b)]

If the limits of the Ordinance on Hygiene (food safety criteria) are exceeded, the cantonal laboratories are required to report this to the FSVO. The foods affected are confiscated and destroyed. Depending on the situation, the products may be recalled and a warning is issued to the population.

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

None.

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

Within the framework of the self-auditing system of the poultry meat industry, a total of 2'389 examinations including samples from broiler and turkey meat (carcasses and meat) were performed in 2022. Of them, 6 (0.3%) proved to be positive for *Salmonella* spp. (2021: 1.0%).
The *Salmonella*-positive samples comprised: 3x *S.* Enteritidis, 1x *S.*Albany and 1x *S.* Tennessee, whereas one isolates was not serotyped. *S.* Enteritidis were found on broiler carcasses (2x; slaughterhouse) and in fresh broiler meat with skin (1x; processing plant). *S.* Tennessee originated from broiler carcasses (1x; slaughterhouse). *S.* Albany (1x) and the non-serotyped *Salmonella* (1x) were found in turkey meat without skin (cutting plant).
Of all 2'092 broiler meat samples (carcasses and meat), 4 (0.2%) proved to be positive for *Salmonella*. Thereby, 3 of the 761 tested broiler carcass samples and one of the 1'331 tested broiler meat samples were positive for *Salmonella*.
Furthermore, 2 (0.7%) of the 297 turkey meat samples (carcasses and meat) proved to be positive for *Salmonella*. Thereby, 2 of the 120 tested turkey carcass samples and none of the 177 tested turkey meat samples were positive for *Salmonella*.

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

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

(c): Mandatory: Yes/No.

(d): Minimum five years.

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

20. General evaluation*: *Rabies virus*

Switzerland

20.1. History of the disease and/or infection in the country[a]

Rabies in humans is a notifiable disease (ordinance of the Federal Department of Home Affairs (FDHA) on notification of observations on communicable diseases).
Rabies in animals is a disease to be eradicated (TSV, Art. 3 and Art. 142-149). Government action is taken to control the disease. An animal is rabies diseased if the analytical method (see additional information) gives a positive result. Anyone who sees a wild animal or stray pet that behaves in a way that appears suspiciously like rabies is required to report this to the police, hunting authorities or a veterinarian. Furthermore, animal keepers must report pets that behave in a way that is suspiciously like rabies to a veterinarian.

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

According to the definitions of the WOAH and WHO (no cases for at least two years) the territory of Switzerland is considered to be free of rabies. In 2022, no cases of rabies were registered in Switzerland in terrestrial animals and in humans. The last imported human rabies case in Switzerland occurred in 2012. Travelling to countries with rabies can pose a threat to people, especially if they are unaware of this risk. Human infections of tourists (who usually are not vaccinated against rabies) in rabies risk countries were reported in the past.
In 2022, a bat (*Myotis daubentonii*) tested positive for European Bat Lyssavirus 2 (EBLV-2) by the national reference laboratory (Swiss Rabies Center). Bat rabies occurs rarely in Switzerland: This is the fifth detected case of bat rabies in Switzerland. Previously, 3 cases of EBLV-2 (1992, 1993 and 2002) and one case of EBLV-1 (2017) have been detected.
In 2022, 1421 sera from humans were tested for neutralizing antibodies by rapid fluorescent focus inhibition test (RFFIT) at the Swiss Rabies Center. 834 times (59%) antibody titers were controlled after pre-expositional immunization, 532 times (37%) the blood was checked after post exposure prophylaxis (PEP), 6 samples were tested in the context of clinical suspicion cases and in 49 cases, the reason for the investigation was not indicated. The trend of the number of analyses is steadily increasing; in 2022, the number of tested samples was higher than before the Corona pandemic.
Vaccination of dogs is recommended in Switzerland, but not mandatory, if the dog does not travel abroad. (Re-)Import conditions for cats, dogs and ferrets are implemented according to the EU regulation 998/2003/EC.
2587 sera of dogs and cats were tested in the context of travelling procedures in order to detect the level of neutralizing antibodies. Also in pets, the number of performed analyses in 2022 was higher than in the years before the Corona pandemic.
Regularly, dogs and cats are imported illegally from rabies risk countries into Switzerland. In 2022, 34 illegally imported animals (21dogs and 13 cats) were examined, none of them tested positive for rabies. In total, 96 animals were tested for rabies at the Swiss Rabies Center in 2022. The samples originated mainly from dogs (33%), cats (24%), bats (29%) and foxes (10%). All samples but one (bat case, see above) were negative.
Illegally imported animals pose a certain risk for pets and their owners in the EU and Switzerland and lead to time-consuming investigations, euthanisation of contact animals, post exposure prophylaxis (PEP) and prophylactic vaccinations.
Although bat rabies is very rare in Switzerland, the current case shows that there is a low risk of contracting rabies through contact with bats.

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

The situation in neighboring countries and the EU is closely monitored. In addition, close collaboration with neighboring countries is important especially with regards to control measures in wild animals. People are instructed to be cautious in the handling of diseased and abnormally behaving wild animals. Animals with suspect symptoms originating from countries with urban rabies are tested for rabies.

20.4. Additional information

See previous national reports for additional information and website of the FSVO.
[1] Diagnostic/analytical methods used: All tests concerning rabies are carried out in the reference laboratory, the Swiss Rabies Center http://www.ivv.unibe.ch/Swiss_Rabies_Center/swiss_rabies_center.html. It is authorized by the EU for rabies testing, see http://ec.europa.eu/food/animal/liveanimals/pets/approval_en.htm. For rabies virus detection immunofluorescence (FAT) and virus isolation using murine neuroblastoma cell culture (RTCIT) is used and the rabies antibody detection is carried out using the rapid fluorescent focus inhibition test (RFFIT) as described in the WOAH manual, see https://www.woah.org/fileadmin/Home/eng/Health_standards/tahm/3.01.18_RABIES.pdf [2] Swiss Rabies Center: Services: Swiss Rabies Center - Institute of Virology and Immunology (unibe.ch)
[3] http://www.who-rabies-bulletin.org/ Queries/
[4] Nouveau schéma de vaccination contre la rage pour les voyageurs 2018- Forum Médical Suisse (medicalforum.ch)

* **For each zoonotic agent**
(a): Epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, feed, animal). If relevant: the official “disease status” to be specified for the whole country and/or specific regions within the country
(b): If applicable

21. General evaluation*: *Toxoplasma*

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

Toxoplasmosis in humans is not notifiable. Thus, no data on the frequency of human toxoplasmosis are available. Some sporadic human cases have however been reported.
In animals, toxoplasmosis is notifiable (TSV, Article 5: disease to be monitored and Article 291). Veterinarians and diagnostic laboratories must report any suspected case of toxoplasmosis to the cantonal veterinarian, who may issue an order for the suspected case to be investigated.

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

In 2022, 11 cases in animals (3 in cats, 4 in dogs, 1 each in beaver, a catta, a monkey and a rock hyrax) were reported to the FSVO by cantonal veterinarians. In these cases, the parasite was confirmed by molecular methods. Only serologic evidence of infection was not reported. In the past ten years never more than 16 cases per year were recorded. Affected animals were mainly cats (31%), goats (11%) and sheep (11%). In non-immune sheep and goats (first-time infection) *Toxoplasma gondii* is regarded as a major cause of abortion and loss of lambs.
Information, on how many animals were tested in veterinary diagnostic laboratories in the context of clinical investigation is available in the data tables in the annexes. In addition, each year, over 1000 routine coprology of cats are carried out.
While infections with *Toxoplasma gondii* are widespread in some meat-producing animals such as small ruminants and South American camelids, in which high seroprevalences (50-80%) were observed, low seroprevalences were observed in pigs under conventional management systems (16%) during the last years in Switzerland.
Cats are the main contaminators of the environment. Caution is generally called for when faced with cat faeces.
A project in 2020 developed and validated a simple and practical method for the simultaneous detection of parasite stages from fresh produce (lettuce) for human consumption. *Toxoplasma gondii* was detected in 6 of 100 samples (6%), see also additional information below.
Humans become infected by the oral route, through the uptake of infectious oocysts from the environment (i.e. vegetables / lettuce contaminated with oocysts) or by means of tissue cysts from the consumption of raw or undercooked meat from infected animals.
Pregnant women are informed about the recommendations from the FOPH to disclaim on raw or insufficient cooked meat and that caution is generally called for when faced with cat feces (and potentially contaminated surroundings).

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

None.

21.4. Additional information

[1] See previous national reports for additional information and website of the FSVO.
[2] Guggisberg, A., et al.: A sensitive, one-way sequential sieving method to isolate helminths' eggs and protozoal oocysts from lettuce for genetic identification. Pathogens 9, 0624 (2020): In 2020 a project developed and validated a simple and practical method for the simultaneous detection of parasite stages from fresh produce (lettuce) for human consumption by a one-way isolation test kit followed by genetic identification (PCR, sequencing). The detection limits in the recovery experiments were 4 *Toxocara* eggs, 2 *Echinococcus multilocularis* eggs and 18 *T. gondii* oocysts. In a field study, helminth DNA was detected in 14 of 157 lettuce samples including *Hydatigera taeniaeformis* (4 samples), *Taenia polyacantha* (3), *Taenia martis* (1), *E. multilocularis* (2, 1.2%) and *Toxocara cati* (4). *Toxoplasma gondii* was detected in 6 of 100 samples. The developed diagnostic strategy is highly sensitive for the isolation and genetic characterization of a broad range of parasite stages from lettuce.
[3] Basso W. et al., *Toxoplasma gondii* and *Neospora caninum* infections in sheep and goats in Switzerland: Seroprevalence and occurrence in aborted foetuses. Food Waterborne Parasitol. 2022 Aug 17;28:e00176. The observed seroprevalences for *T. gondii* in sheep and goats were 66.3% and 50.5% at the animal level, and 90.9% and 81.1% at the farm level, respectively. Older small ruminants, and sheep (vs. goats) had a higher risk of being seropositive to *T. gondii*. Alpine grazing in summer was identified as a protective factor for seropositivity to *T. gondii* in both animal species. In addition, *T. gondii* DNA was detected in 6.1% (n = 82), and in 6.8% (n = 73) of the tested ovine and caprine foetuses, respectively. These results suggest the involvement of these parasites in abortions and reveal a high prevalence of *T. gondii* in small ruminants in Switzerland. They also suggest that consumption of undercooked meat from *T. gondii* infected sheep and goats may represent a risk for public health.
[4] Basso W. et al.: *Toxoplasma gondii* and *Neospora caninum* infections in South American camelids in Switzerland and assessment of serological tests for diagnosis. Parasites and Vectors. 2020;13(1):256. This study estimated the seroprevalence of *T. gondii* infections in South American camelids in Switzerland, optimized serological tests for these animal species and identified risk factors, which may favour infection. Seroprevalences of 82.3% and 84.8% were estimated for alpacas and llamas respectively, and 99.2% of the sampled farms had at least one seropositive animal. The variables "older age" and "female sex" were identified as risk factors for seropositivity and "absence of cats in the farm during the last two years" as a protective factor. This nationwide cross-sectional study demonstrated for the first time the presence of antibodies against *T. gondii* in the Swiss SAC population, highlighting a high seroprevalence for *T. gondii*, and suggested that SAC meat might represent an additional infection source for humans.
[5] Lucien Kelbert et al.: Seroprevalence of *Toxoplasma gondii*, hepatitis E virus and *Salmonella* antibodies in meat juice samples from pigs at slaughter in Switzerland. Journal of Food Protection, In a study in 2020, diaphragm muscles of Swiss fattening pigs were collected in three Swiss abattoirs from a total of 188 farms. Two randomly chosen pig carcasses per farm were selected. On the basis of the slaughter data, the production system and the canton of origin were noted, comparing indoor (n=120) and free-range farming (n=68), and regional allocation. The meat juice of these samples was analyzed for pathogen-specific antibodies using commercial enzyme-linked immunosorbent assay (ELISA) kits. The seroprevalence for *Toxoplasma gondii* was 1.3%.
[5] Bassi, A.M.G., et al. **(**2021). Seroprevalence of *Toxoplasma gondii* and *Salmonella* in hunted wild boars from two different regions in Switzerland. Animals.
[6] Kauter J, et al., Detection of Toxoplasma gondii-specific antibodies in pigs using an oral fluid-based commercial ELISA: Advantages and limitations. Int J Parasitol. 2022 Dec 29:S0020-7519(22)00183-7. This study investigated the possibility of detecting *T. gondii* infections in pigs by detection of specific antibodies in oral fluid using an adapted commercial indirect ELISA kit (OF-ELISA). In experimentally infected animals, positive results were observed from 1.5 weeks post inoculation (pi) until the end of the experimental setup (8 to 30 weeks pi); however, values below the estimated cut-off were occasionally observed in some animals despite constant seropositivity. In group-housed fatteners, antibodies against *T. gondii* could be reliably detected by OF-ELISA in groups in which at least 25% of the animals were seropositive. This test may represent an interesting non-invasive screening tool for detecting pig groups with a high exposure to *T. gondii* at the farm level.

Nevertheless, the OF-ELISA may need further adjustments to consistently detect individual infected pigs, probably due to variations in OF antibody concentration over time.

Switzerland

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

22. General evaluation*: *Trichinella*

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

Trichinellosis is notifiable in humans (ordinance of the Federal Department of Home Affairs (FDHA) on notification of observations on communicable diseases) and in animals (TSV SR 916.401, Article 5: disease to be monitored).
The testing of slaughter pigs (as well as wild boars and horses) for trichinellosis is mandatory (Commission Regulation (EC) No. 2075/2005). Exceptions can be made for slaughterhouses of small capacity, which do not export to the EU. Pig meat not being tested for trichinellosis and originating from these small slaughterhouses is labeled with a special stamp and cannot be exported.

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

In 2022, 4 human cases of Trichinellosis were reported. The FOPH receives very few reports of human trichinellosis, there were never more than 4 human cases notified per year. Usually, the *Trichinella* species is not known as cases are only tested by serology. Thus, trichinellosis in humans is very rare in Switzerland and often associated with infections acquired abroad.
In 2022, 2'392'018 slaughter pigs were tested for *Trichinella*. All results were negative. For many decades, *Trichinella* infections have not been detected in domestic pigs. Due to the extensive testing over the last years with only negative results, Swiss slaughter pigs are projected to be free of *Trichinella.* In addition, 906 horses and 11'582 wild boars were also tested for trichinellosis in 2022. All results from horses and wild boars were negative. In 2021 it was the first time since many years that one wild boar tested positive for *Trichinella* (*Trichinella britovi*). Until then, only antibodies against *Trichinella* were found in a few wild boars.
However, *Trichinella* is detected in a few wild animals other than wild boars each year. In 2022, 13 cases of *Trichinella* infections (*T. britovi*) were reported in wild animals to the FSVO by the cantonal veterinarians (7x in wolves and 6x in lynx). Never more than 13 cases were reported per year in carnivorous wild animals, mainly in lynx (about 67%) and wolves (28%). *Trichinella britovi* circulates in the wild animal population since decades. Up to the year 2020, the nematodes involved in the wild animal population were always *Trichinella britovi.* In 2020, *Trichinella spiralis* was detected for the first time in a wild animal (a lynx) in Switzerland. The detection of *Trichinella spiralis* is estimated to be a rare event.
Thus, infections in wild boars in Switzerland cannot be completely excluded. Therefore, meat especially from wild boars should not be consumed raw. Although the risk of transmission from wild animals to domestic pigs is negligible, the surveillance of trichinellosis in wild animals is crucial.

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

None.

22.4. Additional information

See previous national reports for additional information and website of the FSVO.

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

23. Description of Monitoring/Surveillance/Control programmes system*: *Horses and Trichinella*

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

The investigation of horses is mandatory (Swiss ordinance of slaughter and meat control, VSFK SR 817.190, Article 31). Slaughtered horses are tested during or immediately after the slaughter process. A piece of tongue is used to detect *Trichinella* spp. larvae using the artificial digestion method according to Commission Regulation (EC) No. 2075/2005.

23.2. Measures in place[(b)]

A positive tested animal would be traced back and the contaminated carcass would be disposed.

23.3. Notification system in place to the national competent authority[(c)] Trichinellosis in animals is notifiable (TSV, Article 5).

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

In 2022, 906 horses were tested for *Trichinella*. All results were negative. There are no observations that would challenge the freedom of Swiss horses from trichinellosis.

* **For all combinations of zoonotic agents and matrix (Food, Feed and Animals) for 'Prevalence' and 'Disease Status': one text form reported per each combination of matrix/zoonoses or zoonotic agent**
(a): Sampling scheme (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) + testing scheme (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow (parallel testing, serial testing) to assign and define cases. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.
(b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website.
(c): Mandatory: Yes/No.
(d): Minimum five years.
(e): Relevance of the findings in animals to findings in foodstuffs and for human cases (as a source of infection).

24. Description of Monitoring/Surveillance/Control programmes system*: Pigs and *Trichinella*

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

The investigation of slaughter pigs and wild boars is mandatory (Swiss ordinance of slaughter and meat control, VSFK SR 817.190, Article 31). All pigs slaughtered in slaughterhouses that are approved to export to the EU are tested for *Trichinella*. Exceptions are made for small slaughterhouses of the national market, which do not export to the EU.
Census sampling with the exception of pigs slaughtered in small slaughterhouses and only produced for the local market, is done during or immediately after the slaughter process. A piece of pillar of the diaphragm is taken at slaughter in order to detect *Trichinella* spp. larvae using the artificial digestion method or the latex agglutination test according to Commission Regulation (EC) No. 2075/2005.

24.2. Measures in place[(b)]

A positive tested batch at a slaughterhouse would be traced back and contaminated carcasses would be disposed.

24.3. Notification system in place to the national competent authority[(c)] Trichinellosis in animals is notifiable (TSV, Article 5).

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

In 2022, 2'392'018 slaughter pigs (93.7% of all slaughtered pigs) were tested for *Trichinella*. All results were negative. Although the risk of the parasite cycle crossing from the wild animal population into the conventional domestic pig population can be regarded as negligible, the risk has to be categorized differently or higher with regard to the special situation of grazing pigs. As all results were negative since many years in domestic pigs, it is highly unlikely that *Trichinella* infections acquired from domestic pig meat originating from Switzerland will occur in humans.

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

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

(b): The control program/strategies in place, including vaccination if relevant. If applicable a description of how eradication measures are/were implemented, measures in case of the positive findings or single cases; any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation, if applicable. If programme approved by the EC, please provide link to the specific programme in the Commission`s website. (c): Mandatory: Yes/No.

(d): Minimum five years.

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

25. General evaluation*: Shiga toxin-producing *E. coli* (STEC)

25.1. History of the disease and/or infection in the country[a]

Detection of STEC in humans is notifiable (ordinance of the Federal Department of Home Affairs (FDHA) on notification of observations on communicable diseases). Children under 5 years were the age group mostly affected, ranging between 3 and 9 reports per 100'000 inhabitants.
Ruminants are an important reservoir for STEC. Shiga toxin genes (*stx*) are frequently found in (young) Swiss cattle at slaughter, but isolation of STEC strains may be a challenge.
Recent studies investigating the occurrence of STEC in food samples comprised raw milk cheeses, raw meat products, raw milk, fresh herbs, flour and game meat.
In a master thesis recently completed at the Institute for Food Safety and Hygiene of the University of Zurich (sample survey 2021), no STEC were detected in 100 raw milk alpine cheeses from different regions of Switzerland. In 2017, 51 raw milk cheeses and 53 raw meat products from 63 different farms in 9 different Swiss cantons were tested. STEC were isolated from 2.0% (1 out of 51) of the raw milk cheeses and in 1.9% (1 out of 53) of the raw meat products.
In the same year (2017), 73 samples from raw milk sold directly from farms to consumers were tested for their microbiological quality. STEC were thereby not found in any of the 73 raw milk samples (61 from raw milk vending machines and 12 pre-filled bottles).
With regard to fresh herbs collected at retail level, a study (master thesis P. Kindle, 2017) examining the occurrence of selected bacterial pathogens did not find STEC in 70 samples (16 of them imported from foreign countries).
In 2018, 70 flour samples tested for STEC. The reason for this was that dough made from wheat flour had led to STEC infections in the USA. Nine (12.9%) of the 70 flour samples tested positive for genes encoding Shiga toxin (*stx*). In an additional study, 93 flour samples were collected at Swiss retail markets and 10 (10.8%) of them tested positive for stx_1 and/or stx_2 by PCR assay. 10 STEC strains were isolated and further characterized by PCR assays and whole genome sequencing (WGS). Of 92 game meat samples (red deer, roe deer, wild boar, chamois; sampling in November 2021) from Switzerland and other European countries, 78 (84.8%) game meat samples were found to be positive for Shiga toxin-encoding genes (*stx*) after enrichment. STEC were isolated from 23 (25.0%) of the samples and further characterized by PCR assays and whole genome sequencing (WGS). Overall, the pathogenic potential of STEC in game meat is moderate, though the isolation of one STEC strain carrying stx_{2a}, and of STEC/ExPEC hybrids suggests a role of game meat as a potential source of STEC infections in humans.

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

In 2022, 1191 laboratory confirmed cases of human STEC infections were registered. The notification rate was 13.6 per 100'000 inhabitants (2021: 927 cases, 10.6/100'000). There were more women (56%) than men (44%) affected. No source of infection could be identified. The number of HUS is stable with 22 cases in 2022 (29 cases in 2021), thereof 12 were children under 5 years of age and 8 were adults over 65 years of age.
Reported STEC cases in humans are on the rise since 2014. As most of the laboratories did not routinely test for STEC until then, it is very likely that the impact of STEC was underestimated. New diagnostic tools might have led to more samples being analyzed for STEC.
In view of the low infectious dose of STEC (<100 microorganisms) an infection via contaminated food or water is easily possible. Strict maintenance of good hygiene practices at slaughter and in the context of milk production is of central importance to ensure both public health protection and meat quality. In addition, thorough cooking of critical foods prevents infection with STEC originally present in raw products.

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

Several studies relating to Shiga toxin-producing *E. coli* in foodstuffs, in humans and animals were performed by the national reference laboratory to generate new information in the past years.

25.4. Additional information

[1] See previous national reports for additional information and website of the FSVO.

[2] Isler et al. (2021). Animal petting zoos as sources of Shiga toxin-producing *Escherichia coli* (STEC), *Salmonella*, and extended-spectrum ß-lactamase (ESBL)-producing Enterobacteriaceae. Zoonoses and Public Health:

Animal petting zoos and farm fairs provide the opportunity for children and adults to interact with animals, but contact with animals carries a risk of exposure to zoonotic pathogens and antimicrobialresistant bacteria. The aim of this study was to assess the occurrence of Shiga toxin-producing

Escherichia coli (STEC), *Salmonella*, extended-spectrum β-lactamase (ESBL)-producing Enterobacteriaceae and methicillin-resistant Staphylococcus aureus (MRSA) in animal faeces from six animal petting zoos and one farm fair in Switzerland. Furthermore, hygiene facilities on the venues were evaluated. Of 163 faecal samples, 75 contained *stx*$_1$, *stx*$_2$ or *stx*$_1$/ *stx*$_2$ genes, indicating the presence of STEC. Positive samples included faeces from sika deer (100%), sheep (92%), goats (88%), mouflons (80%), camels (62%), llamas (50%), yaks (50%), pigs (29%) and donkeys (6%), whereas no Shiga toxin genes were found in faeces of calves, guinea pigs, hens, ostriches, ponies, zebras or zebus. On all animal petting venues, there were inadequacies with regard to access to hygiene information and handwashing hygiene facilities. This study provides data that underscore the importance of hygiene measures to minimize the risk of transmission of zoonotic pathogens and MDR, ESBL-producing *E. coli* to visitors of animal petting venues.

[3] In 2020, a master thesis “Prevalence of Shigatoxin-producing *E. coli* in fecal samples of Lama (*Lama glama*) and Alpaca (*Vicugna pacos*) in Switzerland” was conducted at the Institute for Food Safety and Hygiene (ILS), Vetsuisse Faculty University of Zurich: A total of 96 pooled fecal samples were collected from 22 different farms in different regions of Switzerland. For the occurrence of STEC, 9.4% (9/96) of the fecal samples were positive for *stx*$_1$ only, 41.7% (40/96) for *stx*$_2$ only and 3.1% (3/96) for both *stx*$_1$ and *stx*$_2$. Five STEC strains were isolated and further characterized by Whole Genome Sequencing, resulting in two strains of the serotype O166:H28, two others belonging to the serotype O76:H19 and one of serotype O150:H2. All five strains harbored *stx*$_1$ and *ehx*A, while only three strains were positive for *stx*$_2$ as well. Only in the O150:H2 strain the intimin gene (*eae*) could be detected.

[4] Treier et al. (2021). High occurrence of Shiga toxin-producing Escherichia coli in raw meat-based diets for companion animals – a public health issue. Microorganisms.

Feeding pets raw meat-based diets (RMBDs) is becoming increasingly popular but comes with a risk of pathogenic bacteria, including Shiga toxin-producing Escherichia coli (STEC). In humans, STEC may cause gastrointestinal illnesses, including diarrhea, hemorrhagic colitis (HC), and the hemolytic uremic syndrome (HUS). The aim of this study was to evaluate commercially available RMBDs with regard to the occurrence of STEC. Of 59 RMBD samples, 59% tested positive by real-time PCR for the presence of Shiga toxin genes *stx*$_1$ and/or *stx*$_2$. STEC were recovered from 41% of the 59 samples, and strains were subjected to serotyping and virulence gene profiling, using whole genome sequencing (WGS)based methods. Of 28 strains, 29% carried *stx*$_{2a}$ or *stx*$_{2d}$, which are linked to STEC with high pathogenic potential. Twenty different serotypes were identified, including STEC O26:H11, O91:H10, O91:H14, O145:H28, O146:H21 and O146:H28, which are within the most common non-O157 serogroups associated with human STEC-related illnesses worldwide. Considering the low infectious dose and potential severity of disease manifestations, the high occurrence of STEC in RMBDs poses an important health risk for persons handling raw pet food and persons with close contact to pets fed on RMBDs, and is of concern in the field of public health.

[5] Nüesch-Inderbinen, M., Treier, A., Stevens, M., Stephan, R. (2023). Whole genome sequencebased characterisation of Shiga toxin-producing Escherichia coli isolated from game meat from several European countries. Scientific Reports 13:3247. https://doi.org/10.1038/s41598-023-30333-4

The aim of this study was to assess the occurrence of STEC in 92 meat samples from chamois (n=2), red deer (n=27), roe deer (n=38), and wild boar (n=25), from Switzerland and other European countries.

Switzerland

After enrichment, Shiga-toxin encoding genes (stx) were detected by PCR in 78 (84%) of the samples and STEC were isolated from 23 (25%) of the same samples. Nine different serotypes and eight different sequence types (STs) were found, with O146:H28 ST738 (n=10) and O110:H31 ST812

Switzerland

(n=5) predominating. None of the STEC belonged to the so-called top-five serogroups O26, O103, O111, O145, and O157. Subtyping of stx identified stx1c (n=9), stx2a (n=1), stx2b (n=19), stx2e (n=2), and stx2g (n=1). Additional virulence factors (VFs) comprised ehx (n=12), iha (n=21), sta1 (n=1), and subAB (n=19). None of the isolates contained the eae gene. Twenty-one STEC contained VFs associated with extra-intestinal pathogenic E. coli (ExPEC). Overall, the pathogenic potential of STEC in game meat is moderate, though the isolation of one STEC strain carrying stx2a, and of STEC/ExPEC hybrids suggests a role of game meat as a potential source of STEC infections in humans. Therefore, detailed knowledge of the safe handling and preparation of game meat is needed to prevent foodborne infections.

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

26. General evaluation*: West Nile virus

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

WNF in humans is notifiable (ordinance of the Federal Department of Home Affairs (FDHA) on notification of observations on communicable diseases) and in animals (TSV, Article 5: disease to be monitored).

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

Up to date, no autochthonous cases in humans or animals were reported in Switzerland. Since 2010 four confirmed "imported" human cases were reported in Switzerland, who acquired their infection abroad (2012: 1x Kosovo; 2013: 1x Croatia, 2019: 1x Egypt, 2020: 1x Spain). In 2022, no imported human cases were reported.
In 2022, 17 horses and 1 donkey were tested negative for WNV using RT-qPCR. In general horses and donkeys should only be examined for WNV if they show neurological symptoms of unknown origin and if they were not vaccinated.
In 2022, 24 birds from zoos and wild birds were tested negative for WNV using RT-qPCR at the National Reference Center for Poultry and Rabbit Diseases, University of Zurich.
Since 2010, the Institute of Microbiology of the University of Applied Sciences and Arts of Southern Switzerland (SUPSI) performs a surveillance in mosquitoes for flaviviruses in the Canton of Ticino, which is very close to a big endemic area for WNV in Northern Italy. During the 2022 season starting from July to mid-October, 12 sites were monitored with a total of 100 traps and over 14000 mosquitoes (*Culex pipiens/torrentium)* collected. In 2022, significantly more mosquitoes were caught in the mosquito traps than in the previous years. In 2021, only about 3000 mosquitoes were caught with 70 traps at 10 locations.
Pools of Cx. pipiens/torrentium and FTA cards have been analyzed for flaviviruses by molecular methods. In 2022, in 8 of the 12 sites WNV could be detected. This is the first report of WNV circulation in local mosquitoes in Switzerland. It was to be expected that WNV was already circulating in Switzerland, especially in mosquitoes. Possibly, too few mosquitoes had been caught in the traps in previous years to exceed a certain detection limit. So far, there has been no reports of cases of WNF in a person infected in Switzerland (no autochthonous cases).

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

Disease awareness in Switzerland was strengthened. The WNF situation - with a special focus on neighboring countries – is evaluated regularly. If cases in animals or humans appear, the Federal Food Safety and Veterinary Office and the Federal Office of Public Health will inquire immediately. A vaccine for horses was approved in 2011.

26.4. Additional information

See previous national reports for additional information and website of the FSVO.

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

27. General evaluation*: *Yersinia*

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

Yersiniosis in humans is not notifiable. In animals, yersiniosis is notifiable (TSV, Article 5: disease to be monitored and Article 291).

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

No official data for human Yersiniosis case reports are available because, in Switzerland, yersiniosis is not a notifiable disease. However, the number of human samples sent to the national reference laboratory NENT are at least an indicator for the recent situation. In 2022, NENT tested 106 human samples positive for *Yersinia* which is an increase compared to the previous year (2021 78 positive samples). They found 101 *Y. enterocolitica*, 2 *Y. intermedia*, 1 *Y. pseudotuberculosis*, 1 *Y. fredericksenii* and 1 *Y. aleksiciae*.
In 2022 14 cases of yersiniosis in animals were reported to the FSVO by cantonal veterinarians (11in dogs, 1 in each a guinea pig, a monkey and a sheep). In the last 10 years never more than 19 cases per year were reported: affected were mainly dogs (57%), guinea pigs (7%) and cattle (7%).
Information, on how many animals were tested in veterinary diagnostic laboratories in the context of clinical investigation is available in the data tables in the annexes.
In a countrywide survey conducted in 2013 the overall prevalence of *Y. enterocolitica* in Swiss slaughter pigs was 56% using PSB enrichment and alkaline treatment for isolation. Other isolation methods are significantly less sensitive. *Yersinia enterocolitica* bioserotype 4/O:3 (74%) was the most common bioserotype in this study, followed by bioserotype 3/O:5,27 (17%). Data on contamination rates of Swiss pig and beef meat are not available.

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

None.

27.4. Additional information

[1] See previous national reports for additional information and website of the FSVO.
[2] Katharina Meidinger, 2013: Countrywide survey on the detection and biotype distribution of *Yersinia enterocolitica* from slaughter pigs in Switzerland, Inaugural Dissertation to be rewarded the Doctoral Degree of the Vetsuisse Faculty University of Bern.
[3] M Schneeberger et al., 2015: Virulence-associated gene pattern of porcine and human *Yersinia enterocolitica* biotype 4 isolates. Int J Food Microbiol, 2015, 198:70-4.
[4] Hahn, K., et al. (2021). *Yersinia pseudotuberculosis* serotype O:1 infection in a captive Seba's short tailed-fruit bat (*Carollia perspicillata*) colony in Switzerland. BMC Veterinary Research.

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

28. Food-borne Outbreaks

28.1. System in place for identification, epidemiological investigations and reporting of foodborne outbreaks

The Swiss Federal Office of Public Health (FOPH) coordinates the national surveillance of communicable diseases. Notifications of physicians and laboratories are made to cantonal (regional) health authorities and to the FOPH under the provisions of the public health legislation, namely the Ordinance on Disease Notification of December 1 2015. Under this scheme, data provided for each notification depend on its supplier: (i) laboratories report diagnostic confirmations (subtype, method, material) while for selected diseases (ii) physicians additionally cover the subsidiaries of clinical diagnosis, exposition, development and measures. Besides the case-oriented reporting, physicians also have to report observations of unexpected clusters of any communicable disease. At the FOPH, the combined notifications of laboratories and physicians are analyzed and published in the weekly Bulletin.
The surveillance of food-borne infectious agents follows the mandatory system. The laboratories are required to report identifications of *Salmonella* causing gastroenteritis, *Salmonella* Typhi, *Salmonella* Paratyphi, *Campylobacter spp., Shigella* spp., Shigatoxin-producing *Escherichia coli*, *Listeria monocytogenes*, *Clostridium botulinum* and hepatitis A virus. A complementary notification by physicians is required for typhoid/paratyphoid fever, diseases associated with Shigatoxin-producing *Escherichia coli*, botulism, hepatitis A. Following a modification of the Ordinance on Disease Notification, laboratories are additionally required to report identifications of *Trichinella* spp. since January 1 2009 and hepatitis E virus since January 1 2018.
Basically, the responsibility for outbreak investigations lies with the cantonal authorities. Relevant data of food-borne outbreaks are reported to the Federal Food Safety and Veterinary Office (FSVO) in a standardized format as soon as the investigations are accomplished. On request, the FSVO and FOPH offer the cantons their expertise in epidemiology, infectious diseases, food microbiology, risk assessment and risk management. However, under the Federal Law on the Control of Human Communicable Diseases of Man and the Federal Law on Food-Stuffs and Utility Articles, the central government, respectively the FSVO and FOPH, have the duty to supervise the enforcement of the concerned legislations. In cases of outbreaks which are not limited to the territory of one canton, the federal authorities have the competence to coordinate, and if necessary, to direct control actions and information activities of the cantons. In such a situation, the concerned federal offices can conduct their own epidemiological investigations in cooperation with national reference laboratories. In the field of food-borne diseases, the Federal Offices are supported by the National Centre for Enteropathogenic Bacteria and *Listeria* (NENT). This reference laboratory disposes of the facilities, techniques and agents required not only to confirm results from other laboratories but also for epidemiological typing (serotyping and molecular typing) of various bacterial pathogens.

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

The outbreaks were categorized according to the Manual for reporting on food-borne outbreaks in accordance with Directive 2003/99/EC.

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

In 2022, 40 outbreaks were reported throughout Switzerland by the supervisory authorities. In total, more than 780 people became ill, at least 40 people were hospitalized, and one death occurred. The number of reported outbreaks in Switzerland was relatively stable until 2020. In contrast, a significant increase was observed in 2021 and this number is maintained in 2022. The causes of this increase are not confirmed but hypotheses can be formulated.

First of all, it is known that not all cases of food-borne diseases are reported. Consequently, the collected data do not necessarily give a complete picture of the real situation. The reporting of cases depends, among other things, on the number of patients, the severity of the disease, the possible hospitalizations associated with it as well as the collaboration of the various actors involved (patients, doctors, control authorities). Since 2019, the Federal Food Safety and Veterinary Office (FSVO) has been working to raise awareness of the importance of reporting cases among the various authorities concerned, and has set up projects to provide them with the necessary investigation tools during such events. These tools are now available to the authorities and the increase in the number of cases may reflect improved awareness (*Investigation manuals for foodborne outbreaks (admin.ch)*).

A second hypothesis could be that small outbreaks, associated with a small number of people, are also now reported more systematically, even if the cause of the outbreak has not been conclusively elucidated.

Finally, a simple coincidence can also be a plausible hypothesis. The data for the next few years may provide us with an answer.

In 17 of the 40 reported outbreaks, it was possible to identify the causative agent with a high probability. However, the food at the origin of the contamination could only be identified with a strong evidence in nine outbreaks. Restaurants and similar settings for collective catering were the most frequent settings of outbreaks.

The majority of the outbreaks (38) involved only one canton. In the remaining two cases, one involved at least six cantons and the last one involved 15 cantons as well as countries other than Switzerland.

Most foodborne disease outbreaks occur locally after a punctual exposure, but few are investigated by analytical epidemiological studies. This hypothesis put forward by Werber and Bernard (2014) is also found in the present data set. Clearly, there are barriers to the use of analytical epidemiological studies in outbreak investigations at the local level. The reasons why such studies are rarely used are likely to be multiple. Extensive lack of human or technical resources, contradictory public health priorities, late detection of outbreaks and lack of experience in conducting such studies could be reasons. This means that new pathogen-matrix combinations may not be detected. Even more, it also means that a wide variety of outbreaks cannot be traced back to either a causative agent or a food vehicle.

28.4. Descriptions of single outbreaks of special interest

The nationwide outbreak of listeriosis linked to the consumption of smoked fish, affecting 20 people including one death, is noteworthy**.**
At the beginning of July 2022, an unusually high number of cases of listeriosis were reported to the Swiss Federal Office of Public Health (FOPH). Genetic analyses were carried out, and the Whole Genome Sequencing (WGS) confirmed that it was a series of linked cases. Large investigations were then undertaken. The results of these investigations quickly revealed that smoked trouts could be the source of the contamination and that they came from the same company**.**
In mid-July, the local cantonal authority inspected the company, which revealed the presence of *Listeria monocytogenes* bacteria in various products and in the production environment. These bacteria were then identified by WGS as identical to those that caused the outbreak.
After stopping production, recalling the products and informing consumers, the company took various measures in cooperation with the authorities to remedy the problem. In the autumn of 2022, the company achieved complete sanitation (OFSP-Bulletin 3/23, Elucidation d'une flambée de listériose provoquée par des truites fumées).
A second outbreak, large in terms of the number of people affected, involved water from the network of a municipality with a population of 4703 inhabitants. Between 19 and 26 October 2022, the untreated water in the network of this municipality was declared unfit for consumption by the municipal authorities. This was due to analysis results from self-monitoring showing the abnormal presence of bacteria (*Escherichia coli* and *Enterococci*). The alert in the municipality with the message to stop drinking the water from the network was given at the end of the day on 19 October. At the same time, an unusually high number of Shigellosis patients living in the affected municipality is reported to the public health authority.
In total, 256 people showed symptoms of gastroenteritis, three of whom were hospitalised. All three were found to be carriers of *Shigella sonnei* bacteria. Other *Shigella sonnei*-positive cases were subsequently added. The most frequent symptoms were diarrhea, abdominal cramps and tiredness. Fever (78 cases) and bloody diarrhea (19 cases) are signs of severity that suggest invasive infections compatible with *Shigella sonnei*.
Purging and disinfection work by chlorination was carried out on the communal water network, making the water fit for consumption again. The responsiveness of the municipal and cantonal health authorities enabled the outbreak to be contained and the situation returned to normal within a week.

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

2021 was the year of the final phase of a project, initiated in 2019 by the competent federal authorities, to create the tools needed to investigate food-borne outbreaks. All the tools have been available to the supervisory authorities since the beginning of 2022. *Investigation manuals for foodborne outbreaks (admin.ch)*

28.6. 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

None.

(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.

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

The department of Animal Health of the Federal Food Safety and Veterinary Office (FSVO) is the competent authority to design, coordinate and report the AMR-Monitoring Program according to EFSA specifications. The competent cantonal veterinary offices are responsible for taking the caecal samples at slaughterhouses and sending them to the NRL. The competent cantonal chemists are responsible for taking the meat samples in retail stores and sending them to the NRL. The Centre for Zoonoses, Bacterial Animal Diseases and Antibiotic Resistance, University of Bern, Switzerland (ZOBA) is the NRL and responsible for the isolation of the bacteria and the AMR testing. All results are transmitted periodically to the Federal Laboratory Database ARes.
Short description of the institutions and laboratories involved in data collection and reporting

30. General Antimicrobial Resistance Evaluation

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

Overall, increasing and decreasing trends in antimicrobial resistance in zoonotic and indicator bacteria isolated from broiler and meat thereof were detected in comparison to 2020.
Antimicrobial resistance rates of *Campylobacter coli* from broilers showed an increase for ciprofloxacin and a decrease for tetracycline compared to 2020. *Campylobacter jejuni* showed no significant changes in resistance rates compared to 2020.
Antimicrobial resistance rates of indicator *Escherichia coli* from broilers showed slightly decreased resistance rates to fluoroquinolones, ampicillin and tetraycycline compared to 2020. Resistance to cefotaxime and ceftazidime was detected in one isolate, meropenem and colistin resistance was not detected at all.
With selective enrichment the detection rate of ESBL-producing *Escherichia coli* in broilers decreased significantly from 9.9% in 2020 to 4.3% in 2022[1]. ESBL-producing isolates showed a high resistance rate to fluoroquinolones (>50%). Moreover, the overall detection rate of ESBL-producing *Escherichia coli* in chicken meat decreased from 29.4% in 2020 to 17.6% in 2022. The detection rate of ESBLproducing *Escherichia coli* in turkey meat was analysed for the first time with 18.7%. ESBL-producing isolates from meat showed extremely high resistance rate to fluoroquinolones.
With selective enrichment the detection rate of Carbapenemase-producing *Escherichia coli* was zero (0%) for broilers, chicken and turkey meat.
In total 60 *Salmonella* isolates from poultry were tested, no isolate was confirmed as ESBL-producing strain. No carbapenemase-producing isolate was detected.

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

The high fluoroquinolones resistance rates in *Campylobacter jejuni* and *Campylobacter coli* from broilers is important for public health, as these zoonotic agents accounts for more than 8000 human cases of campylobacteriosis in Switzerland. In contrast, the ongoing decreased detection rate of ESBLproducing *Escherichia coli* of broilers and meat thereof is desirable. Although the remaining ESBLproducing *Escherichia coli* as well as indicator *Escherichia coli* showed high to extremely high resistance rate against fluoroquinolones.

30.3 Recent actions taken to control AMR in food producing animals and food No specific measures are ongoing.

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

A national strategy to combat antibiotic resistance (StAR) has been developed and implemented. It follows the one health approach covering public and veterinary health and the environment as well. It includes fields in different sectors (regulatory, prudent use, surveillance, research, control in hospitals etc.) with the long-term objective to ensure the effectiveness of antimicrobials for humans and animals in order to preserve their health. For further information see https://www.star.admin.ch/star/en/home.html.

30.5 Additional information

1: Nüesch-Inderbinen, M., Heyvaert, L., Cernela, N., Zurfluh, K., Biggel, M., Stephan, R. (2023). Emergence of blaSHV-12 and qnrS1 encoded on IncX3 plasmids: changing epidemiology of extendedspectrum ß-lactamases among Enterobacterales isolated from broilers. Journal of Global Antimicrobial
Resistance 33, 194-200. https://doi.org/10.1016/j.jgar.2023.03.008

Further information will be found in the Swiss antibiotic resistance report 2024 on the usage of antibiotics and the occurrence of antibiotic resistance in Switzerland on the FSVO website.

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

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

31. General Description of Antimicrobial Resistance Monitoring; *Campylobacter jejuni/coli* from caecum of broilers

Switzerland

31.1. General description of sampling design and strategy[a]

A stratified random sampling approach according to EFSA specifications is used for taking samples. The samples are taken by the competent authorities.

31.2. Stratification procedure per animal population and food category

The two slaughterhouses included in the monitoring program produce over 75% of slaughtered broilers. The number of samples for each slaughterhouse is determined in proportion to the number of animals slaughtered per year. The samples are taken evenly distributed over the year, in order to exclude seasonal effects.

31.3. Randomisation procedure per animal population and food category

A random sample of 800 caecal samples were taken. The number of samples per month were defined in the sampling plan for each slaughterhouse, samples could be taken from Monday to Friday.

31.4. Analytical method used for detection and confirmation[b]

Direct detection of *Campylobacter jejuni/coli* according to ISO 10272 using two selective agar plates (mCCDA and Butzler) was performed. Species identification were performed by Matrix Assisted Laser Desorption Ionisation Time Of Flight Mass Spectrometry (MALDI TOF MS) using the direct transfer protocol recommended by the manufacturer (Biotyper 3.0, Bruker Daltonics GmbH, Bremen, Germany).

31.5. Laboratory methodology used for detection of antimicrobial resistance[C]

MICs were determined by broth microdilution method using Sensititre susceptibility plates (EUCAMP3) (Thermo Fisher Scientific). Resistance was defined following the epidemiological cut-off values according to the European directive EU/2020/1729.

31.6. Results of investigation

Antimicrobial resistance rates of *Campylobacter coli* from broilers showed an increase for ciprofloxacin and a decrease for tetracycline compared to 2020. *Campylobacter jejuni* showed no significant changes in resistance rates compared to 2020.

31.7. Additional information

Further information will be found in the Swiss antibiotic resistance report 2024 on the usage of antibiotics and the occurrence of antibiotic resistance in Switzerland on the FSVO website.

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

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

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

(c): Antimicrobials included, Cut-off values

32. General Description of Antimicrobial Resistance Monitoring; indicator *Escherichia coli* from caecum of broilers

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

A stratified random sampling approach according to EFSA specifications is used for taking samples. The samples are taken by the competent authorities.

32.2. Stratification procedure per animal population and food category

The two slaughterhouses included in the monitoring program produce over 75% of slaughtered broilers. The number of samples for each slaughterhouse is determined in proportion to the number of animals slaughtered per year. The samples are taken evenly distributed over the year, in order to exclude seasonal effects.

32.3. Randomisation procedure per animal population and food category

A random sample of 240 caecal samples were taken. The number of samples per month were defined in the sampling plan for each slaughterhouse, samples could be taken from Monday to Friday.

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

Direct detection of indicator *E. coli* on Mac Conkey Agar was performed. Species identification were performed by Matrix Assisted Laser Desorption Ionisation Time Of Flight Mass Spectrometry (MALDI TOF MS) using the direct transfer protocol recommended by the manufacturer (Biotyper 3.0, Bruker Daltonics GmbH, Bremen, Germany).

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

MICs were determined by broth microdilution method using Sensititre susceptibility plates (EUVSEC3) (Thermo Fisher Scientific). Resistance was defined following the epidemiological cut-off values according to the European directive EU/2020/1729. If ESBL/CARBA-suspicious isolates occur, the EUVSEC2 plate was used additionally for confirmation.

32.6. Results of investigation

Antimicrobial resistance rates of 229 indicator *E. coli* showed slightly decreased resistance rates to fluoroquinolones, ampicillin and tetraycycline compared to 2020. Resistance to cefotaxime and ceftazidime was detected in one isolate, meropenem and colistin resistance was not detected at all.

32.7. Additional information

Further information will be found in the Swiss antibiotic resistance report 2024 on the usage of antibiotics and the occurrence of antibiotic resistance in Switzerland on the FSVO website.

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

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

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

(c): Antimicrobials included, Cut-off values

33. General Description of Antimicrobial Resistance Monitoring; ESBL-producing *Escherichia coli* from caecum of broilers

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

A stratified random sampling approach according to EFSA specifications is used for taking samples. The samples are taken by the competent authorities.

33.2. Stratification procedure per animal population and food category

The two slaughterhouses included in the monitoring program produce over 75% of slaughtered broilers. The number of samples for each slaughterhouse is determined in proportion to the number of animals slaughtered per year. The samples are taken evenly distributed over the year, in order to exclude seasonal effects.

33.3. Randomisation procedure per animal population and food category

A random sample of 510 caecal samples were taken. The number of samples per month were defined in the sampling plan for each slaughterhouse, samples could be taken from Monday to Friday.

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

Selective enrichment for ESBL-producing *Escherichia coli* according to the revised protocols published by the EU-RL for Antimicrobial Resistance at the National Food Institute, Lyngby, DENMARK was performed. Suspected isolates were recultured on the Mac Conkey Agar with Cefotaxime before MIC testing was performed. Resistance type was confirmed phenotypically with the EUVSEC2 plate. Species identification were performed by Matrix Assisted Laser Desorption Ionisation Time Of Flight Mass Spectrometry (MALDI TOF MS) using the direct transfer protocol recommended by the manufacturer (Biotyper 3.0, Bruker Daltonics GmbH, Bremen, Germany).

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

MICs were determined by broth microdilution method using Sensititre susceptibility plates (EUVSEC3) (Thermo Fisher Scientific). Resistance was defined following the epidemiological cut-off values according to the European directive EU/2020/1729.

33.6. Results of investigation

With selective enrichment the detection rate of ESBL-producing *Escherichia coli* in broilers decreased significantly from 9.9% in 2020 to 4.3% in 2022. ESBL-producing isolates showed a high resistance rate to fluoroquinolones (>50%).

33.7. Additional information

Further information will be found in the Swiss antibiotic resistance report 2024 on the usage of antibiotics and the occurrence of antibiotic resistance in Switzerland on the FSVO website.

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

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

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

(c): Antimicrobials included, Cut-off values

34. General Description of Antimicrobial Resistance Monitoring; ESBL-producing *Escherichia coli* from chicken meat

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

A stratified random sampling approach according to EFSA specifications is used for taking samples. The samples are taken by the competent authorities.

34.2. Stratification procedure per animal population and food category

Fresh, chilled and untreated meat samples were gathered in all Swiss cantons throughout the year. The applied sampling scheme considered each canton's population density and market shares of retailers. Approximately 30% of the chicken meat consumed in Switzerland is imported. Hence, imported and domestic meat accounted for approximately one third and two thirds, respectively.

34.3. Randomisation procedure per animal population and food category

A random sample of 307 meat samples for selective enrichment method was analyzed. The number of samples per week were defined in the sampling plan for each cantonal laboratory, samples could be taken from Monday to Friday.

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

Selective enrichment for ESBL-producing *Escherichia coli* according to the revised protocols published by the EU-RL for Antimicrobial Resistance at the National Food Institute, Lyngby, DENMARK was performed. Suspected isolates were recultured on the Mac Conkey Agar with Cefotaxime before MIC testing was performed. Resistance type was confirmed phenotypically with the EUVSEC2 plate. Species identification were performed by Matrix Assisted Laser Desorption Ionisation Time Of Flight Mass Spectrometry (MALDI TOF MS) using the direct transfer protocol recommended by the manufacturer (Biotyper 3.0, Bruker Daltonics GmbH, Bremen, Germany).

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

MICs were determined by broth microdilution method using Sensititre susceptibility plates (EUVSEC3) (Thermo Fisher Scientific). Resistance was defined following the epidemiological cut-off values according to the European directive EU/2020/1729.

34.6. Results of investigation

The overall detection rate of ESBL-producing *Escherichia coli* in chicken meat decreased from 29.4% in 2020 to 17.6% in 2022.

34.7. Additional information

Further information will be found in the Swiss antibiotic resistance report 2024 on the usage of antibiotics and the occurrence of antibiotic resistance in Switzerland on the FSVO website.

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

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

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

(c): Antimicrobials included, Cut-off values

35. General Description of Antimicrobial Resistance Monitoring; ESBL-producing *Escherichia coli* from turkey meat

35.1. General description of sampling design and strategy[a]

A stratified random sampling approach according to EFSA specifications is used for taking samples. The samples are taken by the competent authorities.

35.2. Stratification procedure per animal population and food category

Fresh, chilled and untreated meat samples were gathered in all Swiss cantons throughout the year. The applied sampling scheme considered each canton's population density and market shares of retailers. No data were available about the import of turkey meat consumed in Switzerland. Imported and domestic meat analysed accounted for approximately two thirds and one third, respectively.

35.3. Randomisation procedure per animal population and food category

A random sample of 139 meat samples for selective enrichment method was analyzed. The number of samples per week were defined in the sampling plan for each cantonal laboratory, samples could be taken from Monday to Friday.

35.4. Analytical method used for detection and confirmation[b]

Selective enrichment for ESBL-producing *Escherichia coli* according to the revised protocols published by the EU-RL for Antimicrobial Resistance at the National Food Institute, Lyngby, DENMARK was performed. Suspected isolates were recultured on the Mac Conkey Agar with Cefotaxime before MIC testing was performed. Resistance type was confirmed phenotypically with the EUVSEC2 plate. Species identification were performed by Matrix Assisted Laser Desorption Ionisation Time Of Flight Mass Spectrometry (MALDI TOF MS) using the direct transfer protocol recommended by the manufacturer (Biotyper 3.0, Bruker Daltonics GmbH, Bremen, Germany).

35.5. Laboratory methodology used for detection of antimicrobial resistance[C]

MICs were determined by broth microdilution method using Sensititre susceptibility plates (EUVSEC3) (Thermo Fisher Scientific). Resistance was defined following the epidemiological cut-off values according to the European directive EU/2020/1729.

35.6. Results of investigation

With selective enrichment the detection rate of ESBL-producing *Escherichia coli* was 18.7%.

35.7. Additional information

Further information will be found in the Swiss antibiotic resistance report 2024 on the usage of antibiotics and the occurrence of antibiotic resistance in Switzerland on the FSVO website.

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

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

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

(c): Antimicrobials included, Cut-off values

Switzerland

36. General Description of Antimicrobial Resistance Monitoring; Carbapenem-resistant *Escherichia coli* from caecum of broilers

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

A stratified random sampling approach according to EFSA specifications is used for taking samples. The samples are taken by the competent authorities.

36.2. Stratification procedure per animal population and food category

The two slaughterhouses included in the monitoring program produce over 75% of slaughtered broilers. The number of samples for each slaughterhouse is determined in proportion to the number of animals slaughtered per year. The samples are taken evenly distributed over the year, in order to exclude seasonal effects.

36.3. Randomisation procedure per animal population and food category

A random sample of 510 caecal samples were taken. The number of samples per month were defined in the sampling plan for each slaughterhouse, samples could be taken from Monday to Friday.

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

Selective enrichment for carbapenemase-producing *Escherichia coli* according to the revised protocols published by the EU-RL for Antimicrobial Resistance at the National Food Institute, Lyngby, DENMARK was performed. Suspected isolates were recultured on the selective Carba and Oxa48 Agar before MIC testing was performed. Resistance type was confirmed phenotypically with EUVSEC2 plate and Carba Blue test. Species identification were performed by Matrix Assisted Laser Desorption Ionisation Time Of Flight Mass Spectrometry (MALDI TOF MS) using the direct transfer protocol recommended by the manufacturer (Biotyper 3.0, Bruker Daltonics GmbH, Bremen, Germany).

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

MICs were determined by broth microdilution method using Sensititre susceptibility plates (EUVSEC3) (Thermo Fisher Scientific). Resistance was defined following the epidemiological cut-off values according to the European directive EU/2020/1729.

36.6. Results of investigation

With selective enrichment the detection rate of Carbapenemase-producing *Escherichia coli* was zero (0%).

36.7. Additional information

Further information will be found in the Swiss antibiotic resistance report 2024 on the usage of antibiotics and the occurrence of antibiotic resistance in Switzerland on the FSVO website.

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

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

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

(c): Antimicrobials included, Cut-off values

37. General Description of Antimicrobial Resistance Monitoring; Carbapenem-resistant *Escherichia coli* from chicken meat

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

A stratified random sampling approach according to EFSA specifications is used for taking samples. The samples are taken by the competent authorities.

37.2. Stratification procedure per animal population and food category

Fresh, chilled and untreated meat samples were gathered in all Swiss cantons throughout the year. The applied sampling scheme considered each canton's population density and market shares of retailers. Approximately 30% of the chicken meat consumed in Switzerland is imported. Hence, imported and domestic meat accounted for approximately one third and two thirds, respectively.

37.3. Randomisation procedure per animal population and food category

A random sample of 307 meat samples for selective enrichment method was analyzed. The number of samples per week were defined in the sampling plan for each cantonal laboratory, samples could be taken from Monday to Friday.

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

Selective enrichment for carbapenemase-producing *Escherichia coli* according to the revised protocols published by the EU-RL for Antimicrobial Resistance at the National Food Institute, Lyngby, DENMARK was performed. Suspected isolates were recultured on the selective Carba and Oxa48 Agar before MIC testing was performed. Resistance type was confirmed phenotypically with EUVSEC2 plate and Carba blue test. Species identification were performed by Matrix Assisted Laser Desorption Ionisation Time Of Flight Mass Spectrometry (MALDI TOF MS) using the direct transfer protocol recommended by the manufacturer (Biotyper 3.0, Bruker Daltonics GmbH, Bremen, Germany).

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

MICs were determined by broth microdilution method using Sensititre susceptibility plates (EUVSEC3) (Thermo Fisher Scientific). Resistance was defined following the epidemiological cut-off values according to the European directive EU/2020/1729.

37.6. Results of investigation

With selective enrichment the detection rate of Carbapenemase-producing *Escherichia coli* was zero (0%).

37.7. Additional information

Further information will be found in the Swiss antibiotic resistance report 2024 on the usage of antibiotics and the occurrence of antibiotic resistance in Switzerland on the FSVO website.

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

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

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

(c): Antimicrobials included, Cut-off values

38. General Description of Antimicrobial Resistance Monitoring; Carbapenem-resistant *Escherichia coli* from turkey meat

38.1. General description of sampling design and strategy[a]

A stratified random sampling approach according to EFSA specifications is used for taking samples. The samples are taken by the competent authorities.

38.2. Stratification procedure per animal population and food category

Fresh, chilled and untreated meat samples were gathered in all Swiss cantons throughout the year. The applied sampling scheme considered each canton's population density and market shares of retailers. No data were available about the import of turkey meat consumed in Switzerland. Imported and domestic meat analysed accounted for approximately two thirds and one third, respectively.

38.3. Randomisation procedure per animal population and food category

A random sample of 139 meat samples for selective enrichment method was analyzed. The number of samples per week were defined in the sampling plan for each cantonal laboratory, samples could be taken from Monday to Friday.

38.4. Analytical method used for detection and confirmation[b]

Selective enrichment for carbapenemase-producing *Escherichia coli* according to the revised protocols published by the EU-RL for Antimicrobial Resistance at the National Food Institute, Lyngby, DENMARK was performed. Suspected isolates were recultured on the selective Carba and Oxa48 Agar before MIC testing was performed. Resistance type was confirmed phenotypically with EUVSEC2 plate and Carba blue test. Species identification were performed by Matrix Assisted Laser Desorption Ionisation Time Of Flight Mass Spectrometry (MALDI TOF MS) using the direct transfer protocol recommended by the manufacturer (Biotyper 3.0, Bruker Daltonics GmbH, Bremen, Germany).

38.5. Laboratory methodology used for detection of antimicrobial resistance[C]

MICs were determined by broth microdilution method using Sensititre susceptibility plates (EUVSEC3) (Thermo Fisher Scientific). Resistance was defined following the epidemiological cut-off values according to the European directive EU/2020/1729.

38.6. Results of investigation

With selective enrichment the detection rate of Carbapenemase-producing *Escherichia coli* was zero (0%).

38.7. Additional information

Further information will be found in the Swiss antibiotic resistance report 2024 on the usage of antibiotics and the occurrence of antibiotic resistance in Switzerland on the FSVO website.

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

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

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

(c): Antimicrobials included, Cut-off values

Switzerland

39. General Description of Antimicrobial Resistance Monitoring; *Salmonella* spp. / diverse poultry species

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

The prevalence of *Salmonella* spp. in food-producing animals in Switzerland is very low as a consequence of long term control programs. Therefore, besides isolates from national control programs (breeding hens, laying hens, broilers and fattening turkeys, Swiss ordinance of epizootics (TSV, Article 255-261) isolates from diagnostic submissions from poultry were included.

39.2. Stratification procedure per animal population and food category

All *Salmonella enterica* subspecies *enterica* isolates from hen and turkey serotyped at the national reference laboratory in 2022 were tested for AMR.

39.3. Randomisation procedure per animal population and food category

No randomisation take place. A total of 60 *Salmonella* isolates were tested.

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

Identification and serotyping according to ISO 6579 was performed.

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

MICs were determined by broth microdilution method using Sensititre susceptibility plates (EUVSEC3) (Thermo Fisher Scientific). Resistance was defined following the epidemiological cut-off values according to the European directive EU/2020/1729. If ESBL or CARBA suspicious isolates occurred, the EUVSEC2 plate was used for confirmation.

39.6. Results of investigation

In total 60 *Salmonella* isolates were tested, no ESBL-producing nor carbapenem-resistant isolate was detected.

39.7. Additional information

Further information will be found in the Swiss antibiotic resistance report 2024 on the usage of antibiotics and the occurrence of antibiotic resistance in Switzerland on the FSVO website.

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

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

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

(c): Antimicrobials included, Cut-off values