European Food Safety Authority

ZOONOSES MONITORING

Iceland

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 2015

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 Iceland during the year 2015.

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

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

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

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1 ANIMAL POPULATIONS

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

1.1 Populations

1.1.1 Information on susceptible animal population

Sources of information

Information on poultry population is only on production under official supervision. The data is stored and managed in an excel file, kept by the veterinary officer for poultry diseases. Information on cattle, pigs, horses, sheep and goat population are collected from the livestock database BUSTOFN. The Icelandic Food and Veterinary Authority (MAST) is responsible for the database. Information regarding slaughtered animals is based on data fromthe slaughterhouses. The data is stored in databases hosted at the Farmers Association but under surveillance of MAST.

Dates the figures relate to and the content of the figures

Poultry: The number of animals is the sum of the maximum capacity of the poultry houses according to the poultry welfare regulation from 2015. However, since not all poultry farms have been visited since the new welfare regulation was put into force, not all data on capacity of poultry houses has been updated. For broilers, the capacity of the houses is estimated, given that the birds are slaughtered at 35 days of age with an average life weight of 2,1 kg. The number of cattle, pigs, horses, sheep and goat population in the report are collected from an autumn report that all livestock owners have to turn in before 20th of November each year. The database is based on information which farmers have to turn in according to law. MAST (The Icelandic Food and Veterinary Authority) animal inspectors and the Agricultural office review the autumn reports before official numbers are released in May each year. The information is collected from 20th of October 2014 to 20th of May 2015. The number of slaughtered animals indicates all slaughtered animals in slaughterhouses from 1st of January 2015 to 31st of December 2015.

Definitions used for different types of animals, herds, flocks and holdings as well as the types covered by the information

The number of poultry flocks is given by the number of houses. The number of holdings and herds are the same for cattle, pigs, horses, sheep and goats.

National evaluation of the numbers of susceptible population and trends in these figures

When comparing animal population 2013-2014 to 2014-2015 there has been an increase in the number of horses, but the number of horses is not reliable due to reports that are not submitted from horse owners located in the urban areas of Iceland. However, there has been systematic action done to improve this factor in data collection, cooperatively with the Farmers Association. We can see an increased number of dairy cows and a small increase in the number of calves. The number of sheep and cattle has been stable as well as the number of holdings.

Geographical distribution and size distribution of the herds, flocks and holdings

All existing animal groups in Iceland are relatively evenly spread around the agricultural lowland areas. There are no herds or holdings in the highlands, which cover over 80 % of the island. In the summer, from June to September, the flocks of sheep and herds of horses are grazing in the highlands.

2 ANTIMICROBIAL RESISTANCE INFORMATION ON SPECIFIC ZOONOSES AND ZOONOTIC AGENTS

2.1 SALMONELLOSIS

2.1.1 Salmonella in foodstuffs

2.1.1.1 Antimicrobial resistance in Salmonella Meat from pig

Description of sampling designs

The isolates detected through the national control control programme for Salmonella in pigs were tested for AMR. See chapter on Salmonella in pigs.

Stratification procedures per animal populations and food categories

Since all samples were included in the AMR monitoring, no stratification procedures had to be implemented.

Randomisation procedures per animal populations and food categories

Since all isolates were included in the AMR testing, no randomisation procedures had to be implemented.

Sampling strategy used in monitoring

Frequency of the sampling

Salmonella found on pig carcasses in the Icelandic Salmonella Control Programme is included in the resistance monitoring. All herds are always objective sampled but in a case of a positive sample the herd is census sampled. At least one serotype is tested for antimicrobial sensitivity.

Type of specimen taken

Swab samples from carcasses, according to the icelandic monitoring programme.

Methods of sampling (description of sampling techniques)

Isolates detected within the national control programme.

Procedures for the selection of isolates for antimicrobial testing

Mast selects one isolate per serotype per epidemiological unit (herd) for antimicrobial testing.

Methods used for collecting data

The laboratory performing the AMR testing sends all results to MAST.

Laboratory methodology used for identification of the microbial isolates

When Salmonella is detected in the RapidChek test, isolates are obtained with the bacteriological method NMKL 187:2007. For serotyping, the presumtive Salmonella colonies are confirmed with MALDI TOF, then serotyped.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Ampicillin, Cefotaxime, Ceftazidime, Chloramphenicol, Ciprofloxacin, Colistin, Gentamicin, Meropenem, Nalidixic acid, Sulfamethoxazole, Tetracycline, Trimethoprim, Azithromycin, Tigecycline. According to decision 2013/652/EU.

Cut-off values used in testing

The values used are ECOFF values given in the 2013/652/EU decision.

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

It is difficult to draw any conclusions due to the limited informations available. See Salmonella, general evaluation.

Notification system in place

AMR in Salmonella isolates is not notifiable, but all results from surveillance is reported from the laboratory to MAST.

Measures in case of the positive findings or single cases

Not determined.

Control program/mechanisms

The control program/strategies in place

Up to date, there are no strategies for the control or reduction of AMR in meat. Veterinarians are reminded of prudent use of antimicrobial.

2.1.1.2 Antimicrobial resistance in Salmonella Meat from poultry, unspecified

Sampling strategy used in monitoring

Frequency of the sampling

Salmonella found in neck skin samples taken according to the icelandic Salmonella control programme is included in the resistance monitoring. One positive sample from each poultry flock is serotyped and tested for antimicrobial sensitivity.

Type of specimen taken

Neck skin samples. Isolates detected within the national control program

Methods of sampling (description of sampling techniques)

Isolates detected within the national control program

Procedures for the selection of isolates for antimicrobial testing

The icelandic Food and Veterinary Authority MAST selects the isolates to ensure that only one isolate from each serovar from each batch is tested for AMR.

Methods used for collecting data

The laboratory performing the AMR testing sends all results to MAST.

Laboratory methodology used for identification of the microbial isolates

NMKL No 71:1999.For serotyping, the presumtive Salmonella colonies are confirmed with MALDI TOF, then serotyped.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Ampicillin, Cefotaxime, Ceftazidime, Chloramphenicol, Ciprofloxacin, Colistin, Gentamicin, Meropenem, Nalidixic acid, Sulfamethoxazole, Tetracycline, Trimethoprim, Azithromycin, Tigecycline. According to decision 2013/652/EU.

Cut-off values used in testing

The values used are ECOFF values given in the 2013/652/EU decision.

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

No conclusions can be drawn yet so far on the trends. No multiresistant strains have been found so far, and no resistance has been detected to important antimicrobials for the treatment in humans.

Notification system in place

AMR in Salmonella is not notifiable, but all results from surveillance are reported from the laboratory to Mast.

Measures in case of the positive findings or single cases

Not determined.

Control program/mechanisms

The control program/strategies in place

Up to date, there are no strategies for the control or reduction of AMR in meat. Veterinarians are reminded of prudent use of antimicrobial.

2.1.2 Salmonella in animals

2.1.2.1 Antimicrobial resistance in Salmonella Pigs

Sampling strategy used in monitoring

Frequency of the sampling

Salmonella isolates found in pig herds within the icelandic Salmonella monitoring programme are included in the resistance monitoring. However, no samples were taken from pig herds on farms in 2015.

2.1.2.2 Antimicrobial resistance in Salmonella Poultry, unspecified

Sampling strategy used in monitoring

Frequency of the sampling

Salmonella found in poultry in samples taken according to the icelandic Salmonella control programme is included in the resistance monitoring.

Type of specimen taken

Sock samples, fecal samples, dust samples from all types of poultry production, according to the national control programme.

Methods of sampling (description of sampling techniques)

Isolates detected within the national control programme.

Procedures for the selection of isolates for antimicrobial testing

Mast selects the isolates, in order to ensure, that only one isolate from each flock is tested.

Methods used for collecting data

The laboratory performing the AMR testing sends all results to MAST.

Laboratory methodology used for identification of the microbial isolates

NMKL No 187. For serotyping, the presumtive Salmonella colonies are confirmed with MALDI TOF, then serotyped.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Ampicillin, Cefotaxime, Ceftazidime, Chloramphenicol, Ciprofloxacin, Colistin, Gentamicin, Meropenem, Nalidixic acid, Sulfamethoxazole, Tetracycline, Trimethoprim, Azithromycin, Tigecycline. According to decision 2013/652/EC

Cut-off values used in testing

The values used are ECOFF values given in the 2013/652/EU decision.

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

It is difficult to draw any conclusions due to the limited informations available. See Salmonella, general evaluation.

Notification system in place

AMR in Salmonella isolates is not notifiable, but all results from surveillance are reported from the laboratory to MAST.

Measures in case of the positive findings or single cases

All poultry flocks positive for Salmonella spp. are destructed on the farm since it is not allowed to distribute meat from positive flocks. No additional actions are taken for flocks with salmonella isolates resistant to one or more antibiotics.

Control program/mechanisms

The control program/strategies in place

Up to date, there are no strategies for the control or reduction of AMR in production animals. Veterinarians are reminded of prudent use of antimicrobial.

2.2 ESCHERICHIA COLI, NON-PATHOGENIC

2.2.1 Escherichia coli, non-pathogenic in animals

2.2.1.1 Antimicrobial resistance in E.coli, non-pathogenic, unspecified Meat from bovine animals

Description of sampling designs

Commission decision 2013/652/EU is not implemented in Iceland. No samples were taken for the monitoring of ESBL producing E. coli in meat from bovine.

2.2.1.2 Antimicrobial resistance in E.coli, non-pathogenic, unspecified Meat from pig

Description of sampling designs

Commission decision 2013/652/EU is not implemented in Iceland. No samples were taken for the monitoring of ESBL producing E. coli in pig meat.

2.2.1.3 Antimicrobial resistance in E.coli, non-pathogenic, unspecified Pigs

Description of sampling designs

Commission decision 2013/652/EU is not implemented in Iceland. No samples were taken for the monitoring of ESBL producing E. coli in pigs. No samples were taken for the monitoring of antimicrobial resistance in indicator commensial E. coli in pigs.

3 FOODBORNE OUTBREAKS

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

3.1 Outbreaks

3.1.1 Foodborne outbreaks

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

LCAs and the Food and Veterinary authority (MAST) shall inform the chief epidemiologist immediately if they become aware of a risk of infections. Laboratories detecting zonoosis in food should report to MAST. Phycisians and laboratories analysing human samples are required, according to article 3 in the Act on Health Security and Communicable Diseases no. 1997/19 to report notifiable diseases and diseases subject to registration to the the Chief epidemiologist. The Chief epidemiologist monitor the data and shall report suspected foodborne outbreaks to MAST and the relevant LCAs. MAST, chief epidemiologist and LCA if relevant work together in investigations of food borne outbreak. The chief epidemiologist is responsible for epidemiological investigation of humans and MAST is responsible investigation of animals coordination of the LCAs. MAST and the LCSs are responsible for investigation of food and the FBOs .

ANIMAL POPULATION TABLES

Table Susceptible animal population

		Population			
Animal species	**Category of animals**	**holding**	**animal**	**slaughter animal (heads)**	**herd/flock**
Cattle (bovine animals)	Cattle (bovine animals) - calves (under 1 year) - dairy calves	720	11,025		720
	Cattle (bovine animals) - calves (under 1 year) - for slaughter	717	10,349		717
	Cattle (bovine animals) - dairy cows - adult	670	26,159		670
	Cattle (bovine animals) - dairy cows - young cattle (1-2 years)	682	7,160		682
	Cattle (bovine animals) - meat production animals - suckler cows	125	1,844		125
	Cattle (bovine animals) - unspecified			19,064	
	Cattle (bovine animals) - young cattle (1-2 years)	795	17,907		795
Gallus gallus (fowl)	Gallus gallus (fowl) - broilers	27	739,500	5,025,923	85
	Gallus gallus (fowl) - laying hens - adult	13	206,100	3,522	47
	Gallus gallus (fowl) - laying hens - during rearing period	10	78,600	0	13
	Gallus gallus (fowl) - parent breeding flocks for broiler production line - adult	4	64,900	24,723	19
	Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period	5	42,600	0	5
	Gallus gallus (fowl) - parent breeding flocks for egg production line - adult	4	12,600	0	6
	Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period	1	5,100	0	1
Goats	Goats	111	989	167	111
Pigs	Pigs - breeding animals - raised under controlled housing conditions - boars	14	56	365	14
	Pigs - breeding animals - raised under controlled housing conditions - gilts	16	2,939	1,480	16
	Pigs - fattening pigs - raised under controlled housing conditions	17	18,423	78,497	17
	Pigs - fattening pigs - raised under controlled housing conditions - piglets	12	7,229		12
Sheep	Sheep - animals over 1 year	4,667	391,168	55,401	4,667
	Sheep - animals under 1 year (lambs)	4,174	95,430	544,708	4,174
Solipeds, domestic	Solipeds, domestic - horses		67,997	7,770	
Turkeys	Turkeys - meat production flocks	5	15,300	48,982	9
	Turkeys - parent breeding flocks - adult	1	1,000	545	2
	Turkeys - parent breeding flocks - during rearing period	1	700	770	2

DISEASE STATUS TABLES

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

Region	Number of herds with status officially free	Number of infected herds	Total number of herds
ICELAND	907	0	907

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

Region	Number of herds with status officially free	Number of infected herds	Total number of herds
ICELAND	4,778	0	4,778

DISEASE STATUS TABLES

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

Region	Number of herds with status officially free	Number of infected herds	Total number of herds
ICELAND	907	0	907

PREVALENCE TABLES

Table CAMPYLOBACTER in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
Not Available	Gallus gallus (fowl) - broilers - before slaughter - Farm - Iceland - animal sample - caecum - Control and eradication programmes - Industry sampling - Selective sampling	slaughter animal batch	18	0	thermotolerant Campylobacter, unspecified	0
	Gallus gallus (fowl) - broilers - before slaughter - Farm - Iceland - animal sample - faeces - Control and eradication programmes - Industry sampling - Census	herd/flock	664	10	thermotolerant Campylobacter, unspecified	10
	Gallus gallus (fowl) - broilers - Slaughterhouse - Iceland - animal sample - caecum - Control and eradication programmes - Industry sampling - Selective sampling	slaughter animal batch	367	8	thermotolerant Campylobacter, unspecified	8
	Sheep - meat production animals - Farm - Iceland - animal sample - foetus/stillbirth - Clinical investigations - Industry sampling - Suspect sampling	herd/flock	1	1	Campylobacter fetus subsp. fetus	1
	Turkeys - meat production flocks - before slaughter - Farm - Iceland - animal sample - faeces - Control and eradication programmes - Industry sampling - Census	herd/flock	29	2	thermotolerant Campylobacter, unspecified	2

Table COXIELLA in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Total units tested	Total units positive	N of clinical affected herds	Zoonoses	N of units positive
Not Available	Cattle (bovine animals) - dairy cows - adult - Farm - Iceland - animal sample - milk - Monitoring - Official sampling - Objective sampling	herd/flock	63	0	0	Coxiella burnetii	0

Table ESCHERICHIA COLI in food

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Total units tested	Total units positive	Zoonoses	N of units positive
Not Available	Meat from other animal species or not specified - fresh - frozen - Wholesale - Australia - food sample - Surveillance - Official sampling - Suspect sampling	batch (food/feed)	25	Gram	2	0	Verocytotoxigenic E. coli (VTEC)	0

Table HISTAMINE in food

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Total units tested	Total units positive	Method	Zoonoses	N of units tested	N of units positive
Not Available	Fish - raw - frozen - Processing plant - Iceland - food sample - Monitoring - Official sampling - Convenient sampling	single (food/feed)	5	Gram	13	0	<= 100	Histamine	0	0

Table LISTERIA in food

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Sample weight	Sample weight unit	Total units tested	Total units positive	Method	Zoonoses	N of units tested	N of units positive
Not Available	Fish - gravad /slightly salted - Processing plant - Not Available - food sample - Surveillance - Official sampling - Convenient sampling	single (food/feed)	125	Gram	5	0	Not Available	Listeria monocytogenes	5	0
	Fish - smoked - cold-smoked - Processing plant - Not Available - food sample - Surveillance - Official sampling - Convenient sampling	single (food/feed)	125	Gram	10	0	Not Available	Listeria monocytogenes	10	0
	Meat from other animal species or not specified - meat products - cooked, ready-to-eat - chilled - Processing plant - Not Available - food sample - Surveillance - Official sampling - Convenient sampling	single (food/feed)	125	Gram	18	0	Not Available	Listeria monocytogenes	18	0

Table 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	Total units tested	Total units positive	Zoonoses	N of units positive
Not Available	Cattle (bovine animals) - dairy cows - adult - Farm - Iceland - animal sample - milk - Monitoring - Official sampling - Objective sampling	herd/flock		N_A	63	0	Salmonella Dublin	0
	Gallus gallus (fowl) - broilers - before slaughter - Farm - Iceland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	686	Y	686	13	Salmonella Agona	10
							Salmonella Worthington	3
	Gallus gallus (fowl) - laying hens - adult - Farm - Iceland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	47	Y	42	0	Salmonella	0
	Gallus gallus (fowl) - laying hens - day-old chicks - Farm - Iceland - environmental sample - delivery box liner - Control and eradication programmes - Industry sampling - Census	herd/flock	92	N_A	44	1	Salmonella Worthington	1
	Gallus gallus (fowl) - laying hens - during rearing period - Farm - Iceland - animal sample - faeces - Control and eradication programmes - Industry sampling - Census	herd/flock	37	N_A	17	0	Salmonella	0
	Gallus gallus (fowl) - parent breeding flocks for broiler production line - adult - Farm - Iceland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	40	Y	40	0	Salmonella	0
	Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks - Farm - Iceland - animal sample - eggshells - Control and eradication programmes - Industry sampling - Census	herd/flock	8	N_A	8	0	Salmonella	0
	Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period - Farm - Iceland - environmental sample - boot swabs - Control and eradication programmes - Industry sampling - Census	herd/flock	17	N_A	17	0	Salmonella	0
	Gallus gallus (fowl) - parent breeding flocks for egg production line - adult - Farm - Iceland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	6	Y	6	0	Salmonella	0
	Gallus gallus (fowl) - parent breeding flocks for egg production line - day-old chicks - Farm - Iceland - environmental sample - boot swabs - Control and eradication programmes - Industry sampling - Census	herd/flock	3	N_A	3	0	Salmonella	0
	Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period - Farm - Iceland - environmental sample - boot swabs - Control and eradication programmes - Industry sampling - Census	herd/flock	2	N_A	2	0	Salmonella	0
	Pigs - fattening pigs - raised under controlled housing conditions - Slaughterhouse - Iceland - animal sample - meat juice - Control and eradication programmes - Official sampling - Objective sampling	animal		N_A	1111	354	Salmonella	354
	Pigs - fattening pigs - raised under controlled housing conditions - Slaughterhouse - Iceland - food sample - carcase swabs - Control and eradication programmes - Official sampling - Objective sampling	slaughter animal batch		N_A	2541	16	Salmonella Agona	3
							Salmonella Derby	1
							Salmonella Enteritidis	1
							Salmonella Kedougou	2
							Salmonella Typhimurium	3
							Salmonella Typhimurium, monophasic	6
	Turkeys - fattening flocks - before slaughter - Farm - Iceland - environmental sample - boot swabs - Control and eradication programmes - Official and industry sampling - Census	herd/flock	26	Y	26	0	Salmonella	0
	Turkeys - parent breeding flocks - adult - Farm - Iceland - environmental sample - boot swabs and dust - Control and eradication programmes - Official and industry sampling - Census	herd/flock	4	Y	4	0	Salmonella	0
	Turkeys - parent breeding flocks - day-old chicks - Farm - Iceland - environmental sample - boot swabs - Control and eradication programmes - Industry sampling - Census	herd/flock	2	N_A	2	0	Salmonella	0
	Turkeys - parent breeding flocks - during rearing period - Farm - Iceland - environmental sample - boot swabs - Control and eradication programmes - Industry sampling - Census	herd/flock	2	N_A	2	0	Salmonella	0

Table 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	Total units tested	Total units positive	Zoonoses	N of units positive
Not Available	Meat from broilers (Gallus gallus) - carcase - Slaughterhouse - Iceland - food sample - neck skin - Control and eradication programmes - Industry sampling - Census	batch (food/feed)	25	Gram	749	7	Salmonella Agona	3
							Salmonella Infantis	4
	Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - frozen - Border inspection activities - Thailand - food sample - meat - Monitoring - Official sampling - Objective sampling	batch (food/feed)	25	Gram	5	0	Salmonella	0
	Meat from sheep - fresh - frozen - Wholesale - Iceland - food sample - meat - Unspecified - Official sampling - Suspect sampling	batch (food/feed)	25	Gram	1	0	Salmonella	0

Table 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	Total units tested	Total units positive	Zoonoses	N of units positive
Not Available	All feedingstuffs - Feed mill - Iceland - environmental sample - dust - Surveillance - Industry sampling - Selective sampling	batch (food/feed)	25	Gram	345	7	Salmonella Cubana	1
							Salmonella Enteritidis	2
							Salmonella Mbandaka	1
							Salmonella spp., unspecified	1
							Salmonella Szentes	1
							Salmonella Worthington	1
	All feedingstuffs - Feed mill - Iceland - environmental sample - dust - Surveillance - Official sampling - Selective sampling	batch (food/feed)	25	Gram	35	2	Salmonella Worthington	2
	Feed material of marine animal origin - fish meal - Feed mill - Iceland - environmental sample - dust - Surveillance - Industry sampling - Selective sampling	batch (food/feed)	25	Gram	933	2	Salmonella Montevideo	2

Table TRICHINELLA in animal

Area of Sampling	Matrix - Sampling stage - Sampling origin - Sample type - Sampling context - Sampler - Sampling strategy	Sampling unit	Total units tested	Total units positive	Zoonoses	N of units positive
Not Available	Pigs - fattening pigs - raised under controlled housing conditions - Slaughterhouse - Iceland - food sample - Control and eradication programmes - Industry sampling - Census	animal	81561	0	Trichinella	0
	Solipeds, domestic - horses - Slaughterhouse - Iceland - food sample - Control and eradication programmes - Industry sampling - Census	animal	7649	0	Trichinella	0

FOODBORNE OUTBREAKS TABLES

Foodborne Outbreaks: summarized data

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

Strong Foodborne Outbreaks: detailed data

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Weak Foodborne Outbreaks: detailed data

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ANTIMICROBIAL RESISTANCE TABLES FOR CAMPYLOBACTER

ANTIMICROBIAL RESISTANCE TABLES FOR SALMONELLA

Table Antimicrobial susceptibility testing of Salmonella Agona in Meat from pig - carcase

Sampling Stage: Slaughterhouse

Sampling Type: food sample - carcase swabs

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Iceland

	AM substance	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
	ECOFF	**8**	**16**	**0.5**	**2**	**16**	**0.06**	**2**	**2**	**0.125**	**16**	**256**	**8**	**1**	**2**
	Lowest limit	**1**	**2**	**0.25**	**0.5**	**8**	**0.015**	**1**	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
	Highest limit	**64**	**64**	**4**	**8**	**128**	**8**	**16**	**32**	**16**	**128**	**1024**	**64**	**8**	**32**
	N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0.5														1	1
4			1										1		
128												1			
<=0.015							1								
<=0.03										1					
<=0.25				1											
<=0.5					1				1						
<=1		1						1							
<=4											1				
<=8						1									

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

Sampling Stage: Farm

Sampling Type: environmental sample - boot swabs

Sampling Context: Control and eradication programmes

Sampler: Industry sampling

Sampling Strategy: Census

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Iceland

	AM substance	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
	ECOFF	**8**	**16**	**0.5**	**2**	**16**	**0.06**	**2**	**2**	**0.125**	**16**	**256**	**8**	**1**	**2**
	Lowest limit	**1**	**2**	**0.25**	**0.5**	**8**	**0.015**	**1**	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
	Highest limit	**64**	**64**	**4**	**8**	**128**	**8**	**16**	**32**	**16**	**128**	**1024**	**64**	**8**	**32**
	N of tested isolates	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**
MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**
0.03							5								
0.06										1					
0.5														7	8
1					1									2	1
2		1													
4			6										11		
8			1								5				
64												5			
128												1			
256												4			
>1024												1			
<=0.015							6								
<=0.03										10					
<=0.25				11										2	2
<=0.5					10				11						
<=1		10						11							
<=2			4												
<=4											6				
<=8						11									

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

Sampling Stage: Slaughterhouse

Sampling Type: food sample - neck skin

Sampling Context: Control and eradication programmes

Sampler: Industry sampling

Sampling Strategy: Census

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Iceland

	AM substance	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
	ECOFF	**8**	**16**	**0.5**	**2**	**16**	**0.06**	**2**	**2**	**0.125**	**16**	**256**	**8**	**1**	**2**
	Lowest limit	**1**	**2**	**0.25**	**0.5**	**8**	**0.015**	**1**	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
	Highest limit	**64**	**64**	**4**	**8**	**128**	**8**	**16**	**32**	**16**	**128**	**1024**	**64**	**8**	**32**
	N of tested isolates	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0.5														3	3
4			2										1		
8											3		2		
128												3			
<=0.015							3								
<=0.03										3					
<=0.25				3											
<=0.5					3				3						
<=1		3						3							
<=2			1												
<=8						3									

Table Antimicrobial susceptibility testing of Salmonella Derby in Meat from pig - carcase

Sampling Stage: Slaughterhouse

Sampling Type: food sample - carcase swabs

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Iceland

	AM substance	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
	ECOFF	**8**	**16**	**0.5**	**2**	**16**	**0.06**	**2**	**2**	**0.125**	**16**	**256**	**8**	**1**	**2**
	Lowest limit	**1**	**2**	**0.25**	**0.5**	**8**	**0.015**	**1**	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
	Highest limit	**64**	**64**	**4**	**8**	**128**	**8**	**16**	**32**	**16**	**128**	**1024**	**64**	**8**	**32**
	N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0.5														2	
4			1										2		
128												2			
<=0.015							2								
<=0.03										2					
<=0.25				2											2
<=0.5					2				2						
<=1		2						2							
<=2			1												
<=4											2				
<=8						2									

Table Antimicrobial susceptibility testing of Salmonella Enteritidis in Meat from pig - carcase

Sampling Stage: Slaughterhouse

Sampling Type: food sample - carcase swabs

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Iceland

	AM substance	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
	ECOFF	**8**	**16**	**0.5**	**2**	**16**	**0.06**	**2**	**2**	**0.125**	**16**	**256**	**8**	**1**	**2**
	Lowest limit	**1**	**2**	**0.25**	**0.5**	**8**	**0.015**	**1**	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
	Highest limit	**64**	**64**	**4**	**8**	**128**	**8**	**16**	**32**	**16**	**128**	**1024**	**64**	**8**	**32**
	N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0.5														1	
1															1
8													1		
128												1			
<=0.015							1								
<=0.03										1					
<=0.25				1											
<=0.5					1				1						
<=1		1						1							
<=2			1												
<=4											1				
<=8						1									

Table Antimicrobial susceptibility testing of Salmonella Indiana in Meat from duck - carcase - frozen

Sampling Stage: Retail

Sampling Type: food sample

Sampling Context: Control and eradication programmes

Sampler: Industry sampling

Sampling Strategy: Census

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: United Kingdom

	AM substance	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
	ECOFF	**8**	**16**	**0.5**	**2**	**16**	**0.06**	**2**	**2**	**0.125**	**16**	**256**	**8**	**1**	**2**
	Lowest limit	**1**	**2**	**0.25**	**0.5**	**8**	**0.015**	**1**	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
	Highest limit	**64**	**64**	**4**	**8**	**128**	**8**	**16**	**32**	**16**	**128**	**1024**	**64**	**8**	**32**
	N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0.5														1	1
4													1		
<=0.015							1								
<=0.03										1					
<=0.25				1											
<=0.5					1				1						
<=1		1						1							
<=2			1												
<=4											1				
<=8						1						1			

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

Sampling Stage: Slaughterhouse

Sampling Type: food sample - neck skin

Sampling Context: Control and eradication programmes

Sampler: Industry sampling

Sampling Strategy: Census

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Iceland

	AM substance	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
	ECOFF	**8**	**16**	**0.5**	**2**	**16**	**0.06**	**2**	**2**	**0.125**	**16**	**256**	**8**	**1**	**2**
	Lowest limit	**1**	**2**	**0.25**	**0.5**	**8**	**0.015**	**1**	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
	Highest limit	**64**	**64**	**4**	**8**	**128**	**8**	**16**	**32**	**16**	**128**	**1024**	**64**	**8**	**32**
	N of tested isolates	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**
MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0.5														4	4
4													4		
8											1				
128												2			
256												2			
<=0.015							4								
<=0.03										4					
<=0.25				4											
<=0.5					4				4						
<=1		4						4							
<=2			4												
<=4											3				
<=8						4									

Table Antimicrobial susceptibility testing of Salmonella Kedougou in Meat from pig - carcase

Sampling Stage: Slaughterhouse

Sampling Type: food sample - carcase swabs

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Iceland

	AM substance	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
	ECOFF	**8**	**16**	**0.5**	**2**	**16**	**0.06**	**2**	**2**	**0.125**	**16**	**256**	**8**	**1**	**2**
	Lowest limit	**1**	**2**	**0.25**	**0.5**	**8**	**0.015**	**1**	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
	Highest limit	**64**	**64**	**4**	**8**	**128**	**8**	**16**	**32**	**16**	**128**	**1024**	**64**	**8**	**32**
	N of tested isolates	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
MIC	**N of resistant isolates**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**2**
0.03							2								
0.5														2	
4			2												
>32															2
>64		2											2		
>1024												2			
<=0.03										2					
<=0.25				2											
<=0.5					2				2						
<=1								2							
<=4											2				
<=8						2									

Table Antimicrobial susceptibility testing of Salmonella Typhimurium, monophasic in Meat from pig - carcase

Sampling Stage: Slaughterhouse

Sampling Type: food sample - carcase swabs

Sampling Context: Control and eradication programmes

Sampler: Official sampling

Sampling Strategy: Objective sampling

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Iceland

	AM substance	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
	ECOFF	**8**	**16**	**0.5**	**2**	**16**	**0.06**	**2**	**2**	**0.125**	**16**	**256**	**8**	**1**	**2**
	Lowest limit	**1**	**2**	**0.25**	**0.5**	**8**	**0.015**	**1**	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
	Highest limit	**64**	**64**	**4**	**8**	**128**	**8**	**16**	**32**	**16**	**128**	**1024**	**64**	**8**	**32**
	N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0.03							1								
0.5														1	1
4													1		
8											1				
128												1			
<=0.03										1					
<=0.25				1											
<=0.5					1				1						
<=1		1						1							
<=2			1												
<=8						1									

Table Antimicrobial susceptibility testing of Salmonella Worthington in Gallus gallus (fowl) - laying hens - day-old chicks

Sampling Stage: Farm

Sampling Type: environmental sample - delivery box liner

Sampling Context: Control and eradication programmes

Sampler: Industry sampling

Sampling Strategy: Census

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Iceland

	AM substance	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
	ECOFF	**8**	**16**	**0.5**	**2**	**16**	**0.06**	**2**	**2**	**0.125**	**16**	**256**	**8**	**1**	**2**
	Lowest limit	**1**	**2**	**0.25**	**0.5**	**8**	**0.015**	**1**	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
	Highest limit	**64**	**64**	**4**	**8**	**128**	**8**	**16**	**32**	**16**	**128**	**1024**	**64**	**8**	**32**
	N of tested isolates	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0.5														1	1
4			1										1		
32												1			
<=0.015							1								
<=0.03										1					
<=0.25				1											
<=0.5					1				1						
<=1		1						1							
<=4											1				
<=8						1									

Table Antimicrobial susceptibility testing of Salmonella Worthington in Gallus gallus (fowl) - broilers

Sampling Stage: Farm

Sampling Type: environmental sample - boot swabs

Sampling Context: Control and eradication programmes

Sampler: Industry sampling

Sampling Strategy: Census

Programme Code: AMR MON

Analytical Method: Dilution - sensititre

Country of Origin: Iceland

	AM substance	Ampicillin	Azithromycin	Cefotaxim	Ceftazidim	Chloramphenicol	Ciprofloxacin	Colistin	Gentamicin	Meropenem	Nalidixic acid	Sulfamethoxazole	Tetracycline	Tigecycline	Trimethoprim
	ECOFF	**8**	**16**	**0.5**	**2**	**16**	**0.06**	**2**	**2**	**0.125**	**16**	**256**	**8**	**1**	**2**
	Lowest limit	**1**	**2**	**0.25**	**0.5**	**8**	**0.015**	**1**	**0.5**	**0.03**	**4**	**8**	**2**	**0.25**	**0.25**
	Highest limit	**64**	**64**	**4**	**8**	**128**	**8**	**16**	**32**	**16**	**128**	**1024**	**64**	**8**	**32**
	N of tested isolates	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
MIC	**N of resistant isolates**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0.5														3	
4			1										2		
32												3			
<=0.015							3								
<=0.03										3					
<=0.25				3											3
<=0.5					3				3						
<=1		3						3							
<=2			2										1		
<=4											3				
<=8						3									

ANTIMICROBIAL RESISTANCE TABLES FOR INDICATOR ESCHERICHIA COLI

OTHER ANTIMICROBIAL RESISTANCE TABLES

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

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