European Food Safety Authority

ZOONOSES MONITORING

SLOVAKIA

The Report referred to in Article 9 of Directive 2003/99/EC

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

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

IN 2008

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: **Slovakia**

Reporting Year:

Laboratory name	Description	Contribution
State Veterinary Institute (Zvolen)	carry out laboratory analyses, laboratory diagnostics and testing of official samples taken at veterinary checks and controls of animal health and provide the services of laboratory diagnostics and testing	
State Veterinary and Food Administration of the Slovak Republic (SVFA)	SVFA manage, direct and control the excersize of state administration by regional and district veterinary and food administrations, Control Institute of veterinary drugs, state veterinary laboratories	reporting authority
State Veterinary and Food Institutes (Bratislava, Dolny kubin, Kosice)	carry out laboratory analyses, laboratory diagnostics and testing of official samples taken at veterinary checks and controls of foodstuffs, feedingstuffs and animal health and provide the services of laboratory diagnostics and testing	

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 Slovakia during the year 2008 .

The information covers the occurrence of these diseases and agents in humans, animals, foodstuffs and in some cases also in feedingstuffs. In addition the report includes data on antimicrobial resistance in some zoonotic agents and commensal 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 Community 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 Community 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 Community Summary Report on zoonoses that is 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.

A. Information on susceptible animal population

Sources of information:

Central Evidence of Animals, statistics, District Veterinary and Food Administrations in the Slovak Republic

Dates the figures relate to and the content of the figures:

31 December 2008

Table Susceptible animal populations

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	**Category of animals**		**Year**		**Year**		**Year**		**Year**
Cattle (bovine animals)	**calves (under 1 year)**			1631		127737	2007		
	dairy cows			38781					
	heifers			6337		49937	2007		
	in total	10328		72828	2008	504797	2008	21475	2008
	meat production animals			26079		339579	2007		
Ducks	**breeding flocks, unspecified - in total**					1850			
	in total					13250			
	meat production flocks					11400			
Gallus gallus (fowl)	**breeding flocks for egg production line - in total**					160000			
	breeding flocks for meat production line - in total					1417897			
	broilers			52995538					
	in total			54643662		3812358			
	laying hens			1648106		2234461			
Geese	**breeding flocks, unspecified - in total**					2700			

Table Susceptible animal populations

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	**Category of animals**		**Year**		**Year**		**Year**		**Year**
Geese	**in total**					4700			
	meat production flocks					2000			
Goats	**animals over 1 year**					5710	2007		
	animals under 1 year					1053	2007		
	in total	373	2007	76		7775	2008	1235	
Pigs	**fattening pigs**			890957					
	in total			913650		593465		6850	
	mixed herds			22693					
Sheep	**animals over 1 year**					303459	2007		
	animals under 1 year (lambs)			81530		54879	2007		
	in total			90657		372039	2008	5540	2008
	mixed herds			9127					
Solipeds, domestic	**horses - in total**			13		11500	2006	500	2006
Turkeys	**breeding flocks, unspecified - in total**					61000			

Table Susceptible animal populations

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	**Category of animals**		**Year**		**Year**		**Year**		**Year**
Turkeys	**in total**			26261		157600			
	meat production flocks					96600			

Footnote:

Numbers of animals or herds from 2007 are not account in totall.

2. INFORMATION ON SPECIFIC ZOONOSES AND ZOONOTIC AGENTS

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

2.1 SALMONELLOSIS

2.1.1 General evaluation of the national situation

A. General evaluation

History of the disease and/or infection in the country

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

Foodstuffs

All obtained data were collected from the State Veterinary and Food Institutes, the State Veterinary Institute, Public Health Authorities in Slovakia.

The samples comprised of official samples taken by inspectors of the Veterinary and Food Administrations according direction of State Veterinary and Food Administration "Plan for sampling and laboratory examination if products of animal origin for official controls in 2008", according Regulation (EC) No 2073/2005 and within direction of SVFA the target control of sheep cheese samples taken directly in special sheep farm establishments.

The Public Health Authority of the Slovak Republic (PHA of the SR) and Regional Health Authorities in the Slovak Republic (RHA in the SR) performed the sampling of foodstuffs and raw materials in compliance with the multi-annual national plan of the official control carried out by public health authorities and its updating for the year 2008 and according Regulation (EC) No 2073/2005.

All samples were tested in accordance with standardized international methods STN EN ISO 6579/A1.

Samples of foodstuffs were taken at all stages of food chain.

As compared to the past years 2005, 2007 and 2007 we have recorded a significant fall in a total of tested samples – a total of 21 248 in 2006 and 11 678 samples were tested in 2007. On the other hand a slight increase in percentage of positive samples in 2007 has been recorded 0, 34 % and 0, 22% in 2006.

A total of 9839 samples in 2008 were tested with positive findings of salmonella in 75 samples(0, 76%). Concerning variety of salmonella types, there is no difference compared to the past years practically since 2003 just the same serovars have been detected through the years, with a continuing prevalence of S. Enteritidis serovar.

The highest incidence of salmonella is recorded in poultry meat.

Feedingstuufs

In 2008 there were investigated 2697 samples. In comparision with 2007 the

amount of examinated samples increased.
Comparing the results from the years 2004, 2005, 2006, 2007 there has been a significant decline in amount of tested samples – a total of 5 276 in 2004, 5 787 in 2005, 2 103 in 2006 and 1406 in 2007. This trend has been mainly recorded in feeds of animal origin as well as in compound feedingstuffs.

Animals
In animals, samples were taken in case of ill or dead animals, according national eradication programms and surveys related to poultry.

Recent actions taken to control the zoonoses

- official samples of foodstuffs taken by inspectors
- official controls of farm animal feed manufacturing
- in animals, samples were taken in case of ill or dead animals, according national eradication programms and surveys related to poultry.

2.1.2 Salmonellosis in humans

A. Salmonellosis in humans

Reporting system in place for the human cases

Physician shall report each suspect case mandatory and microbiological laboratory report each positive sample.

Case definition

in accordance with decision No 2119/98/EC-C/32002/1043- Case definition for communicable diseases listed in decision 2000/96/EC- Clinical picture compatible with salmonellosis, e.g. diarrhoea, abdominal pain, nausea, and vomiting. The organism may cause extraintestinal infections.

Diagnostic/analytical methods used

isolation of Salmonella (non-typhi, non-paratyphi) from clinical specimen

History of the disease and/or infection in the country

Salmonellosis has been reported in Slovakia since 1975, historical data do exist since this date.

Results of the investigation

To the end of the 80-ties, the most prevalent serotype of salmonella was S.typhimurium, infantis, from the 90- ties, the most prevalent serotype has been S. enteritidis.

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

Trend of salmonellosis increased to 1998, since 1998 slowly decreased. For many years, the highest age-specific incidence in children is up to 1 year of age. Eggs and egg products and poultry meet are the most relevant risk factor of transmission.

2.1.3 Salmonella in foodstuffs

A. Salmonella spp. in broiler meat and products thereof

Results of the investigation

From January 1, 2008 to December 31, 2008 was carried out the survey on the prevalence and antimicrobial resistance of Campylobacter spp. in broiler flocks and on the prevalence of Campylobacter spp. a Salmonella spp. in broiler carcasses within the Slovak Republic. 422 broiler caecal samples were tested for the presence of Campylobacter spp. and 422 skin samples of broiler carcasses were tested for the presence and counts of Campylobacter spp. and the presence of Salmonella spp. Salmonella spp. was detected in 91 skin samples of broiler carcasses. Dominating serovar was S. Enteritidis (27 samples), followed by S. Infantis (15 samples), S. Indiana, S. Kentucky (14 samples), S. Agona (7 samples), S. Bareilly (6 samples), S. Havana a S. Tennessee (3 samples) and in 1 case S. Schwarzengrund.

B. Salmonella spp. in food

Monitoring system

Sampling strategy

All obtained data were collected from the State Veterinary and Food Institutes, the State Veterinary Institute, Public Health Authorities in Slovakia.
The samples comprised of official samples taken by inspectors of the Veterinary and Food
Administrations according direction of State Veterinary and Food Administration “Plan for sampling and laboratory examination if products of animal origin for official controls in 2008”, according Regulation (EC) No 2073/2005 and within direction of SVFA the target control of sheep cheese samples taken directly in special sheep farm establishments.
The Public Health Authority of the Slovak Republic (PHA of the SR) and Regional Health Authorities in the Slovak Republic (RHA in the SR) performed the sampling of foodstuffs and raw materials in compliance with the multi-annual national plan of the official control carried out by public health authorities and its updating for the year 2008 and according Regulation (EC) No 2073/2005.
All samples were tested in accordance with standardized international methods STN EN ISO 6579/A1.
Samples of foodstuffs were taken at all stages of food chain.

Frequency of the sampling

according to work out a plan taking of samples

Diagnostic/analytical methods used

Bacteriological method: STN ISO 6579

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

AAs compared to the past years 2005, 2007 and 2007 we have recorded a significant fall in a total of tested samples – a total of 21 248 in 2006 and 11 678 samples were tested in 2007. On the other hand a slight increase in percentage of positive samples in 2007 has been recorded 0, 34 % and 0, 22% in 2006.

A total of 9839 samples in 2005 were tested with positive findings of salmonella in 75 samples
(0, 76%). Concerning variety of salmonella types, there is no difference compared to the past years practically since 2003 just the same serovars have been detected through the years, with a continuing prevalence of S. Enteritidis serovar.
Be like any other year, the highest incidence of salmonella was recorded in poultry meat, 4 in fresh poultry meat (S.Enteritidis, S.Lille) and 8 in meat preparations intended to be eaten cooked (S. Enteritidis, S. Bareilly a S. Lille, in one sample were found two serovars(S.Enteritidis a S. Indiana). 6 samples of mechanically separated meat were positive, 4x S. Enteritidis and 1x S.Infantis a

S. Kentucky. In meat products intended to be eaten raw or cooked were found . Bareilly a S. Heidelberg in 2 samples.
Concerning other types of meat S. enteritidis spp. was detected in 3 samples of minced pork intended to be eaten cooked.
S. Typhimurium, S. Bareilly, S. Derby a S. Ohio were found in meat preparations intended to be eaten cooked and S. Enteritidis, S. Brandenburg a S. anatum were found in in meat products intended to be eaten raw or cooked.
In meat preparatons intended to be eaten cooked from bovine meat was found 1 S. Derby.
From milk and milk products were found 1 positive sample of sheep cheese – bryndza - S. Kentucky and sample of cheese made from raw or low heat treated cow´ s milk – S. agona.

In other foodstuffs, samples of eggs, pasta, cakes, spices and processed foods were positive for presence of Salmonella spp.
From 20 positive samples of eggs 12 comes from retail, 3 from packing centre and 5 from home production (19 x S. Enteritidis , 1 x S. Typhimurium). From processed foods, sendwiches, ready to eat salads, bread pudding and goulash soup were isolated S. enteritidis 5x and S. Aarhus 1x.

Totally 15 different serovars of Salmonella were recorded from foodstuffs.

S. enteritidis was phagetyped only in 33 strains and the most frequently phagetypes were phagetype 8 (10 x) a PT 8 (5 x).

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Bareilly	S. Enteritidis	S. Heidelberg	S. Indiana	S. Infantis	S. Kentucky
Meat from broilers (Gallus gallus) - fresh	SVFI	batch	25 g	32	4		3				
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked [1)]	SVFI, PHA	batch	25 g	32	7	2	3		1	1	
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant	SVFI, PHA	batch	25 g	177	0						
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at processing plant	SVFI, PHA	batch	10/25 g	86	2	1		1			
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM)	SVFI	batch	10/25 g	34	6		4			1	1
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked	SVFI, PHA	single	25 g	3	0						
Meat from turkey - fresh	SVFI	batch	25 g	3	0						
Meat from turkey - meat products - cooked, ready-to-eat	SVFI, PHA	batch	25 g	3	0						
Meat from turkey - minced meat - intended to be eaten cooked	SVFI	batch	25 g	2	0						

	S. Lille	S. Typhimurium	Salmonella spp., unspecified
Meat from broilers (Gallus gallus) - fresh	1		
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked [1)]	1		
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant			

Table Salmonella in poultry meat and products thereof

	S. Lille	S. Typhimurium	Salmonella spp., unspecified
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at processing plant			
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM)			
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked			
Meat from turkey - fresh			
Meat from turkey - meat products - cooked, ready-to-eat			
Meat from turkey - minced meat - intended to be eaten cooked			

Comments:

[1)] 2 serovars in one sample

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Agona	S. Enteritidis	S. Kentucky	S. Typhimurium	Salmonella spp., unspecified
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk	SVFI, PHA	batch	25 g	143	0					
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk	SVFI, PHA	batch	25 g	74	1	1				
Cheeses made from sheep's milk - soft and semi -soft - made from pasteurised milk	SVFI, PHA	batch	25 g	81	0					
Cheeses made from sheep's milk - soft and semi -soft - made from raw or low heat-treated milk	SVFI, PHA	batch	25 g	396	1			1		
Dairy products (excluding cheeses) - butter	SVFI	batch	25 g	30	0					
Dairy products (excluding cheeses) - cream	SVFI, PHA	batch	25 g	15	0					
Dairy products (excluding cheeses) - dairy products, not specified	PHA	batch	25 g	29	0					
Dairy products (excluding cheeses) - ice-cream	SVFI, PHA	batch	25 g	1423	0					
Dairy products (excluding cheeses) - milk powder and whey powder	SVFI, PHA	batch	25 g	416	0					
Dairy products (excluding cheeses) - yoghurt	SVFI, PHA	batch	25 g	10	0					
Milk, cows' - UHT milk	SVFI	batch	25 ml	33	0					
Milk, cows' - pasteurised milk	SVFI	batch	25 ml	29	0					
Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	PHA	batch	25 ml	25	0					
Milk, sheep's - raw	SVFI	batch	25 ml	11	0					
Milk, sheep's - raw - intended for direct human consumption	PHA	single	25 ml	1	0					

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Anatum	S. Bareilly	S. Brandenburg	S. Derby	S. Enteritidis	S. Ohio
Meat from bovine animals - fresh	SVFI	batch	25 g	53	0						
Meat from bovine animals - meat preparation - intended to be eaten cooked	SVFI, PHA	batch	25 g	79	1				1		
Meat from bovine animals - meat products - cooked, ready-to-eat	SVFI	batch	25 g	5	0						
Meat from bovine animals - meat products - raw but intended to be eaten cooked	PHA	batch	25 g	5	0						
Meat from bovine animals - minced meat - intended to be eaten raw	PHA	single	25 g	1	0						
Meat from pig - fresh	SVFI	batch	25 g	101	0						
Meat from pig - meat preparation - intended to be eaten raw	SVFI, PHA	batch	25 g	144	0						
Meat from pig - meat preparation - intended to be eaten cooked	SVFI, PHA	batch	10 g	317	4		1		1		1
Meat from pig - meat products - cooked, ready-to-eat	SVFI, PHA	batch	25g	755	0						
Meat from pig - meat products - raw but intended to be eaten cooked	SVFI, PHA	batch	10/25 g	200	3	1		1		1	
Meat from sheep - fresh	SVFI	batch	25 g	1	0						
Meat from wild boar	SVFI	batch	25 g	1	0						
Meat from wild game - land mammals	SVFI, PHA	batch	25 g	9	0						
Other products of animal origin	SVFI	batch	25 g	9	0						
Other products of animal origin - gelatin and collagen	PHA	single	25 g	1	0						

Table Salmonella in red meat and products thereof

	S. Typhimurium	Salmonella spp., unspecified
Meat from bovine animals - fresh		
Meat from bovine animals - meat preparation - intended to be eaten cooked		
Meat from bovine animals - meat products - cooked, ready-to-eat		
Meat from bovine animals - meat products - raw but intended to be eaten cooked		
Meat from bovine animals - minced meat - intended to be eaten raw		
Meat from pig - fresh		
Meat from pig - meat preparation - intended to be eaten raw		
Meat from pig - meat preparation - intended to be eaten cooked	1	
Meat from pig - meat products - cooked, ready-to-eat		
Meat from pig - meat products - raw but intended to be eaten cooked		
Meat from sheep - fresh		
Meat from wild boar		
Meat from wild game - land mammals		
Other products of animal origin		
Other products of animal origin - gelatin and collagen		

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Aarhus	S. Bredeney	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Bakery products - bread	SVFI, PHA	batch	25 g	10	0					
Bakery products - cakes	SVFI, PHA	batch	25 g	39	1			1		
Bakery products - pastry	SVFI, PHA	batch	25 g	54	0					
Beverages, non-alcoholic	SVFI	batch	25 ml	4	0					
Beverages, non-alcoholic - soft drinks	SVFI	batch	25 ml	4	0					
Cereals and meals	SVFI, PHA	batch	25 g	159	0					
Cocoa and cocoa preparations, coffee and tea	SVFI	batch	25 g	2	0					
Confectionery products and pastes	PHA	batch	25 g	36	9			9		
Egg products - dried	SVFI	batch	25 g	10	0					
Egg products - liquid	PHA	batch	25 g	24	0					
Eggs - table eggs [1)]	PHA	single	25 g	16	5			4	1	
Eggs - table eggs - at packing centre	SVFI, PHA	batch	25 g	81	3			3		
Eggs - table eggs - at retail	SVFI, PHA	batch	25 g	53	12			12		
Eggs - table eggs - shell	PHA	batch	25 g	15	0					
Fats and oils (excluding butter) - fats	SVFI	batch	25 g	2	0					
Fats and oils (excluding butter) - oils	SVFI	batch	25 g	8	0					
Fish - raw	SVFI, PHA	batch	25 g	7	0					
Fish - smoked	SVFI	batch	25 g	2	0					
Fishery products, unspecified	SVFI, PHA	batch	25 g	341	0					
Fishery products, unspecified - ready-to-eat	SVFI, PHA	batch	25 g	51	0					
Fruits - products - dried	SVFI	batch	25 g	1	0					

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Aarhus	S. Bredeney	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Fruits and vegetables - non-precut	SVFI, PHA	batch	25 g	10	0					
Fruits and vegetables - precut	SVFI, PHA	batch	25 g	66	0					
Fruits and vegetables - precut - ready-to-eat	SVFI, PHA	batch	25 g	214	0					
Fruits and vegetables - products	SVFI, PHA	batch	25 g	468	0					
Juice - fruit juice - unpasteurised	SVFI	batch	25 g	3	0					
Nuts and nut products	SVFI	batch	25 g	9	0					
Other food	SVFI	batch	25 g	38	0					
Other processed food products and prepared dishes - noodles	SVFI, PHA	batch	25 g	288	3			3		
Other processed food products and prepared dishes - sandwiches	PHA	single	25 g	92	0					
Other processed food products and prepared dishes - unspecified	PHA	single	25 g	1	0					
Other processed food products and prepared dishes - unspecified - containing raw egg	PHA	batch	25 g	1	1			1		
Other processed food products and prepared dishes - unspecified - non-ready-to-eat foods	PHA	batch	25 g	132	0					
Other processed food products and prepared dishes - unspecified - ready-to-eat foods	SVFI, PHA	batch	25 g	2747	6	1		5		
Sauce and dressings - Mayonnaise	SVFI	batch	25 g	350	0					
Seeds, dried	SVFI	batch	25 g	1	0					
Spices and herbs	SVFI	batch	25 g	45	3		3			

Comments:

[1)] home production

2.1.4 Salmonella in animals

A. Salmonella spp. in turkey - breeding flocks and meat production flocks

Monitoring system

Sampling strategy

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

The National Eradication Program for Salmonella Infections in Poultry Flocks in the Slovak Republic had also been introduced into turkey and water poultry flocks with the same monitoring system, sampling strategy, sampling frequency, sample types, sampling methods, diagnostic methods and control mechanisms.

Meat production flocks

The National Eradication Program for salmonella infections in poultry flocks within the Slovak Republic was also introduced into turkeys and waterfowl flocks, with the same monitoring system, sampling strategy, sampling frequency, types of samples, sampling methods, diagnostic methods and control mechanisms.

Measures in case of the positive findings or single cases

The measures shall be in compliance with the minimum requirements listed below:
1)If, after an investigation in compliance with the monitoring, the presence of Salmonella enteritidis or Salmonella typhimurium in poultry inside the house has been confirmed, then the measures listed below shall be implemented:
a)no piece of poultry is allowed to leave the house, except for the permission of competent authority for the purposes of controlled killing and safe disposal or slaughtering in slaughterhouse stipulated by the competent authority according to the letter c);
b)non-incubated eggs produced by birds from the concerned house shall be safely disposed of on the spot or after their suitable marking shall be under control delivered at facility approved for egg processing in order to treat the eggs by heat in compliance with the requirements of the peculiar rule;
2)After unloading the flock infected by Salmonella enteritidis or Salmonella typhimurium, the complete cleaning and disinfection of the house shall be performed, including safe disposal of excrements or litter in compliance with the method stipulated by the competent veterinary administration authority. Chicken restocking shall be in compliance with the requirements of the point Monitoring 2.A.1.
3)If the hatching eggs produced by the flocks, wherein the presence of Salmonella enteritidis or Salmonella typhimurium has been confirmed, are being in the hatchery, then they should be safely disposed of or treated as a very

hazardous material in compliance with the peculiar rule.

Notification system in place

- The results of all negative investigations in the rearing flocks, breeding flocks and hatcheries are notified by the state veterinary laboratories in the SR to the competent District Veterinary and Food Administrations. On the given date, the monthly report on findings is reported by the District Veterinary and Food Administrations to the State Veterinary and Food Administration of the SR (for information, the reports are also sent to the Regional Veterinary and Food Administration).
- If, after the monitoring in compliance with the point 1, the presence of Salmonella enteritidis or Salmonella typhimurium in breeding/reproductive flock has been detected, the person responsible for the laboratory performing the investigation, person performing the investigation or the owner of the flock shall immediately report the results to the competent District Veterinary and Food Administration.
- All positive results of investigations, carried out in compliance with the point 8, are sent to the competent District Veterinary and Food Administration and State Veterinary and Food Administration of the SR.

Results of the investigation

In turkeys, 210 breeding flocks with positive finding in 10 samples (4, 76%), 138 production flocks and 9 positive samples there and 12 unspecified flocks with positive finding in 2 samples.

B. Salmonella spp. in geese - breeding flocks and meat production flocks

Monitoring system

Sampling strategy

Breeding flocks

The National Eradication Program for Salmonella Infections in Poultry Flocks in the Slovak Republic had also been introduced into turkey and water poultry flocks with the same monitoring system, sampling strategy, sampling frequency, sample types, sampling methods, diagnostic methods and control mechanisms.

Measures in case of the positive findings or single cases

Breeding flocks

The measures shall be in compliance with the minimum requirements listed below:
1)If, after an investigation in compliance with the monitoring, the presence of Salmonella enteritidis or Salmonella typhimurium in poultry inside the house has been confirmed, then the measures listed below shall be implemented:
a)no piece of poultry is allowed to leave the house, except for the permission of competent authority for the purposes of controlled killing and safe disposal or slaughtering in slaughterhouse stipulated by the competent authority according to the letter c);
b)non-incubated eggs produced by birds from the concerned house shall be safely disposed of on the spot or after their suitable marking shall be under control delivered at facility approved for egg processing in order to treat the eggs by heat in compliance with the requirements of the peculiar rule;
2)After unloading the flock infected by Salmonella enteritidis or Salmonella typhimurium, the complete cleaning and disinfection of the house shall be performed, including safe disposal of excrements or litter in compliance with the method stipulated by the competent veterinary administration authority. Chicken restocking shall be in compliance with the requirements of the point Monitoring 2.A.1.
3)If the hatching eggs produced by the flocks, wherein the presence of Salmonella enteritidis or Salmonella typhimurium has been confirmed, are being in the hatchery, then they should be safely disposed of or treated as a very hazardous material in compliance with the peculiar rule.

Meat Production flocks

The measures shall be in compliance with the minimum requirements listed below:
1)If, after an investigation in compliance with the monitoring, the presence of Salmonella enteritidis or Salmonella typhimurium in poultry inside the house has been confirmed, then the measures listed below shall be implemented:
a)no piece of poultry is allowed to leave the house, except for the permission of

competent authority for the purposes of controlled killing and safe disposal or slaughtering in slaughterhouse stipulated by the competent authority according to the letter c);
b)non-incubated eggs produced by birds from the concerned house shall be safely disposed of on the spot or after their suitable marking shall be under control delivered at facility approved for egg processing in order to treat the eggs by heat in compliance with the requirements of the peculiar rule;
2)After unloading the flock infected by Salmonella enteritidis or Salmonella typhimurium, the complete cleaning and disinfection of the house shall be performed, including safe disposal of excrements or litter in compliance with the method stipulated by the competent veterinary administration authority. Chicken restocking shall be in compliance with the requirements of the point Monitoring 2.A.1.
3)If the hatching eggs produced by the flocks, wherein the presence of Salmonella enteritidis or Salmonella typhimurium has been confirmed, are being in the hatchery, then they should be safely disposed of or treated as a very hazardous material in compliance with the peculiar rule.

Notification system in place

- The results of all negative investigations in the rearing flocks, breeding flocks and hatcheries are notified by the state veterinary laboratories in the SR to the competent District Veterinary and Food Administrations. On the given date, the monthly report on findings is reported by the District Veterinary and Food Administrations to the State Veterinary and Food Administration of the SR (for information, the reports are also sent to the Regional Veterinary and Food Administration).
- If, after the monitoring in compliance with the point 1, the presence of Salmonella enteritidis or Salmonella typhimurium in breeding/reproductive flock has been detected, the person responsible for the laboratory performing the investigation, person performing the investigation or the owner of the flock shall immediately report the results to the competent District Veterinary and Food Administration.
- All positive results of investigations, carried out in compliance with the point 8, are sent to the competent District Veterinary and Food Administration and State Veterinary and Food Administration of the SR.

Results of the investigation

In geese there were investigated 20 flocks of breeding, production and unspecified flocks with prevalence 15, 78%.

C. Salmonella spp. in ducks - breeding flocks and meat production flocks

Monitoring system

Sampling strategy

Breeding flocks

The National Eradication Program for Salmonella Infections in Poultry Flocks in the Slovak Republic had also been introduced into turkey and water poultry flocks with the same monitoring system, sampling strategy, sampling frequency, sample types, sampling methods, diagnostic methods and control mechanisms.

Measures in case of the positive findings or single cases

The measures shall be in compliance with the minimum requirements listed below:
1) If, after an investigation in compliance with the monitoring, the presence of Salmonella enteritidis or Salmonella typhimurium in poultry inside the house has been confirmed, then the measures listed below shall be implemented:
a) no piece of poultry is allowed to leave the house, except for the permission of competent authority for the purposes of controlled killing and safe disposal or slaughtering in slaughterhouse stipulated by the competent authority according to the letter c);
b) non-incubated eggs produced by birds from the concerned house shall be safely disposed of on the spot or after their suitable marking shall be under control delivered at facility approved for egg processing in order to treat the eggs by heat in compliance with the requirements of the peculiar rule;
2)After unloading the flock infected by Salmonella enteritidis or Salmonella typhimurium, the complete cleaning and disinfection of the house shall be performed, including safe disposal of excrements or litter in compliance with the method stipulated by the competent veterinary administration authority. Chicken restocking shall be in compliance with the requirements of the point Monitoring 2.A.1.
3) If the hatching eggs produced by the flocks, wherein the presence of Salmonella enteritidis or Salmonella typhimurium has been confirmed, are being in the hatchery, then they should be safely disposed of or treated as a very hazardous material in compliance with the peculiar rule.

Notification system in place

The results of all negative investigations in the rearing flocks, breeding flocks and hatcheries are notified by the state veterinary laboratories in the SR to the competent District Veterinary and Food Administrations. On the given date, the monthly report on findings is reported by the District Veterinary and Food Administrations to the State Veterinary and Food Administration of the SR (for information, the reports are also sent to the Regional Veterinary and Food

Administration).
- If, after the monitoring in compliance with the point 1, the presence of Salmonella enteritidis or Salmonella typhimurium in breeding/reproductive flock has been detected, the person responsible for the laboratory performing the investigation, person performing the investigation or the owner of the flock shall immediately report the results to the competent District Veterinary and Food Administration.
- All positive results of investigations, carried out in compliance with the point 8, are sent to the competent District Veterinary and Food Administration and State Veterinary and Food Administration of the SR.

Results of the investigation

In ducks there were investigated 35 flocks (breeding, production, unspecified) with prevalence of salmonella 22, 85%.

D. Salmonella spp. in pigs

Monitoring system

Sampling strategy

Breeding herds

In Slovakia, the active monitoring has not been performed. In the case of suspicion of the disease occurrence, the owner or person responsible for the holding shall take the samples on his/her own expenses. The laboratory confirms or excludes the occurrence of infection and is obliged to send the isolated strain to the NRL for salmonellas.

Sampling strategy
The rectal swabs, excrements, carcasses or organs from dead animals are sent for the investigation.

Multiplying herds

In Slovakia, the active monitoring has not been performed. In the case of suspicion of the disease occurrence, the owner or person responsible for the holding shall take the samples on his/her own expenses. The laboratory confirms or excludes the occurrence of infection and is obliged to send the isolated strain to the NRL for salmonellas.

Sampling strategy
The rectal swabs, excrements, carcasses or organs from dead animals are sent for the investigation.

Fattening herds

In Slovakia, the active monitoring has not been performed. In the case of suspicion of the disease occurrence, the owner or person responsible for the holding shall take the samples on his/her own expenses. The laboratory confirms or excludes the occurrence of infection and is obliged to send the isolated strain to the NRL for salmonellas.

Sampling strategy
The rectal swabs, excrements, carcasses or organs from dead animals are sent for the investigation.

Diagnostic/analytical methods used

Breeding herds

Bacteriological method: STN EN ISO 6579

Multiplying herds

Bacteriological method: STN EN ISO 6579

Fattening herds at farm

Bacteriological method: STN EN ISO 6579

Fattening herds at slaughterhouse (herd based approach)

Bacteriological method: STN EN ISO 6579

Notification system in place

All positive results of investigations are sent to the competent District Veterinary and Food Administration and State Veterinary and Food Administration of the SR.

Results of the investigation

From January 1, 2008 to December 31, 2008 was carried out the survey on the prevalence of Salmonella and methicilin resistent Staphylococcus aureus in pigs. During survey there were investigated 1930 samples with positive findings in 67 samples (3,47%). Identified serovars were (S. Enteritidis, S. Typhimurium, S. Agona, S. Bovismorbificans, S. Bredeney, S. Derby, S. Goldcoast , S. London , S. S. Newport, S. Ohio, S. Virchow a S.I. (6,7 : - : 1,5)).

E. Salmonella spp. in bovine animals

Monitoring system

Sampling strategy

In Slovakia, the active monitoring has not been performed. In the case of suspicion of the disease occurrence, the owner or person responsible for the holding shall take the samples on his/her own expenses. The laboratory confirms or excludes the occurrence of infection and is obliged to send the isolated strain to the NRL for salmonellas.

Sampling strategy:
The rectal swabs, excrements, carcasses or organs from dead animals are sent for the investigation.

Diagnostic/analytical methods used

Animals at farm

Bacteriological method: ISO 6579:2002

Animals at slaughter (herd based approach)

Bacteriological method: ISO 6579:2002

Notification system in place

All positive results of investigations are sent to the competent District Veterinary and Food Administration and State Veterinary and Food Administration of the SR.

F. Salmonella spp. in animal

Monitoring system

Sampling strategy

In animals, samples were taken in case of ill or dead animals, according national eradication programms and surveys related to poultry. The samples were tested in the State Veterinary and Food Institutes, using the method STN ISO 6579/A1 (ANNEX D), OIE and Bergey ´s manuals. Data from laboratories were sent to National Reference Laboratory for Salmonellosis, which compiled the results and sent to State Veterinary and Food Administration.

Results of the investigation

Focuses of salmonellosis in animals

In 2008 there were 8 focuses of salmonellosis in animals registered within Slovakia, in 7 districts, resp. 5 regions. Comparing with 2007 the number of focuses decreased less by half. In cattle, a total of focuses of salmonellosis decreased by 4 comparing 2007, in poultry it was less by 1, in pig less by 3 and no focus was found in sheeps.
1 focus of salmonellosis in pig was officially notified, resulting in mortality rate 50,0% and 15 pieces of pig dead or were destroyed.
6 focuses of salmonellosis in poultry flocks were officially notified, resulting in mortality rate of 2, 33%%. This resulted in 1969 PCS of dead and destroyed poultry.
1 focus of salmonellosis in cattle was officially notified (comparing the year 2006 it was less by 4 focuses), resulting in mortality rate of 88,24%. This resulted in 15 head of dead and destroyed cattle.

Geographical distribution of salmonellosis focuses in animals

Pig: 1 focus in Presov Region/ Presov District
Poultry: 6 focuses in Bratislava Region/ Senec District, Nitra Region/Sala and Nove Zamky District, Banska Bystrica Region/Zvolen District, Presov Region/Poprad District and Kosice Region/ Michalovce District
Cattle: 1 focus in Nitra Region/Sala District

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

Poultry – control programme

In 2008 investigation of flocks Gallus Gallus kept on according National control programme dor Salmonella infections in poultry. This programme was adopted in

compliance with Act 39/2007 for 2008.
National control programme in 2008 was aimed at monitoring of S. enteritidis and S. typhimurium.
In case of positive findings there had been ordered applicable measures in breeding flocks (rearing flocks of breeding poultry, adult breeding flocks) and in flocks of productive poultry (rearing flocks of laying hens, egg production flocks, meat production flocks). There were 7 positive flocks found in 1304 investigated flocks (6 x S. enteritidis, 1x S. typhimurium).

Other poultry

In other poultry dominated findings in turkey and broilers. In turkey there were investigated 360 flocks and 21 were positive for presence of various serotypes of Salmonella, it presents 6, 8%. In broilers there were investigated 2584 flocks of one-day-chickens with prevalence of 4,5% and during rearing period 3,34% prevalence was in 3056 tested flocks. Predominated serovar in broilers was S. enteritidis followed by S. Tennessee.
From January 1, 2008 to December 31, 2008 was carried out the survey on the prevalence and antimicrobial resistance of Campylobacter spp. in broiler flocks and on the prevalence of Campylobacter spp. a Salmonella spp. in broiler carcasses within the Slovak Republic. 422 broiler caecal samples were tested for the presence of Campylobacter spp. and 422 skin samples of broiler carcasses were tested for the presence and counts of Campylobacter spp. and the presence of Salmonella spp. Salmonella spp. was detected in 91 skin samples of broiler carcasses. Dominating serovar was S. Enteritidis (27 samples), followed by S. Infantis (15 samples), S. Indiana, S. Kentucky (14 samples), S. Agona (7 samples), S. Bareilly (6 samples), S. Havana a S. Tennessee (3 samples) and in 1 case S. Schwarzengrund.
The National Eradication Program for Salmonella Infections in Poultry Flocks in the Slovak Republic had also been introduced into turkey and water poultry flocks with the same monitoring system, sampling strategy, sampling frequency, sample types, sampling methods, diagnostic methods and control mechanisms.
In ducks there were investigated 35 flocks (breeding, production, unspecified) with prevalence of salmonella 22, 85%. In geese there were investigated 20 flocks of breeding, production and unspecified flocks with prevalence 15, 78%. The most investigated flocks were in turkeys, 210 breeding flocks with positive finding in 10 samples (4, 76%), 138 production flocks and 9 positive samples there and 12 unspecified flocks with positive finding in 2 samples.

Pigs

From January 1, 2008 to December 31, 2008 was carried out the survey on the prevalence of Salmonella and methicilin resistent Staphylococcus aureus in pigs. During survey there were investigated 1930 samples with positive findings in 67 samples (3,47%). Identified serovars were (S. Enteritidis, S. Typhimurium, S. Agona, S. Bovismorbificans, S. Bredeney, S. Derby, S. Goldcoast , S. London , S. S. Newport, S. Ohio, S. Virchow a S.I. (6,7 : - : 1,5)).

Other animal species

Monitoring of Salmonella has not been performed in Slovak Republic. Owner or farmer at own charge took samples in case of suspicion of disease. Positive findings were rare, in calves and cattle over 2 years, in pets – cats and dogs, in zoo animals and 2 foxes. Predominant serovar was S. enteritidis, then S. typhimurium and S. infantis from 18 serovars izolated from animals.

G. Salmonella spp. in Gallus Gallus - breeding flocks

Monitoring system

Sampling strategy

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

The target for the reduction of Salmonella enteritidis, Salmonella hadar, Salmonella infantis, Salmonella typhimurium and Salmonella virchow in breeding flocks of Gallus gallus shall be a reduction of the maximum percentage of adult breeding flocks comprising at least 250 birds remaining positive to 1% or less by 31. December 2009.

Official checks at the level of poultry flocks are organized and carried out by the relevant District Veterinary and Food Administration, which also take measures in the case of positive results. Sampling in poultry flocks is carried out by farmers or private veterinarians. Official confirmation samples are taken and sent to the laboratory examination by official veterinarians from the relevant District Veterinary and Food Administrations.
The control programme is yearly evaluated.
The owner or the person responsible for hatcheries or for breeding flocks must, at his own expense, perform the sampling for analysis for the detection of salmonella either in an approved national laboratory or in a laboratory recognized by the competent authority, with the minimum levels of sampling indicated below being respected.
Monitoring for salmonella composing the target in adult breeding flocks of Gallus gallus comprising at least 250 birds.
Breeding flocks shall be sampled:
A) at the initiative of the operator
B) official sampling:

Sampling at the initiative of the operator shall take at the hatchery every 2 weeks.
Official control sampling is taken:
a. Routine sampling every 16 weeks at hatchery, which shall on that occasion replace the corresponding sampling at the initiative of the operator;
b. routine sampling at the holding on two occasions during the production cycle, the first one being within four weeks following moving to laying phase or laying unit and the second one being towards the end of the laying phase, not earlier than eight weeks before the end of the production cycle.
c. Confirmatory sampling at the holding, following detection of relevant salmonella from sampling at hatchery.

Methods of sampling (description of sampling techniques)

Breeding flocks: Production period

1. Sampling at hatchery

• For each breeding flock, the sample shall consist of a minimum of one composite sample of visibly soiled complete hatcher basket liners taken a random in the incubator, to reach a total of at least 1m². If the hatching eggs from a flock occupy more than one incubator, then one such composite sample shall be taken from each incubator.
• In cases where hatcher basket liners are not used10 g broken eggshells should be taken from 25 separate hatcher baskets, crushed, mixed and a 25g sub sample taken

2. Sampling at holding:
2.1. Either pooled faeces made up of separate samples of fresh faeces each weighing not less than 1 g taken at random from a number of sites in the building in which the birds are kept, or where the birds have free access to more than one building on a particular holding, from each group of buildings on the holding in which the birds are kept. Faeces may be pooled for analysis up to a minimum of 2 pools.
2.2. 5 pairs of boot swabs. The boot swabs may be pooled for analysis into a minimum of 2 pools. The surface of the boot swab shall be moistened using appropriate diluent (such as 0.8% sodium chloride, 0.1% peptone in sterile deionised water, or sterile water). Walking around shall be done in a manner which will sample representatively all parts of the sector, including littered and slatted areas when slats are safe to walk on. All separate pens within a house shall be included in the sampling. On completion of sampling in the chosen sector, boot swabs must be removed carefully so as not to dislodge adherent material.
In cage flocks, sampling may consist of naturally mixed faeces from dropping belts, scrapers or deep pits, depending on the type of house. 2 samples of at least 150g shall be collected to be tested individually:
- droppings belts beneath each tier of cages which are run regularly and discharged into an auger or conveyor system,
- droppings pit system in which deflectors beneath the cages are scraped into a deep pit beneath the house,
- droppings pit system in a step cage house when cages are offset and faeces fall directly into the pit,
There are normally several stacks of cages within a house. Pooled faeces from each stack shall be represented in the overall pooled sample. Two pooled samples shall be taken from each flock as described below.
In systems where there are belts or scrapers, these shall be run on the day of the sampling before sampling is carried out.
In systems where there are deflectors beneath cages and scrapers, pooled

faeces which has lodged on the scraper after it has been run, shall be collected.
In step – cage systems where there is no belt or scraper system it is necessary to collect pooled faeces from the deep pit.
Droppings belt systems: pooled faecal material from the discharge ends of the belts shall be collected.

Case definition

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Production period

Positive breeding flock is when presence of relevant salmonella (other than vaccine strains) was detected in one or more faecal samples (or if there is a secondary official confirmation in the relevant faecal samples or birds organ samples) taken at the holding. This shall not apply in exceptional cases of suspect breeding flocks where salmonella detection at the holding at the initiative of the operator was not confirmed by official sampling.
Invasive salmonella serovars included in the programme are:
- Salmonella enteritidis
- Salmonella typhimurium
- Salmonella infantis
- Salmonella virchow
- Salmonella hadar.

Vaccination policy

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

Vaccination is allowed in breeding flocks in Slovak Republic using death or live marked vaccines registered by the Institute for the State Control of Veterinary Biologicals and Medicaments in Nitra. Live salmonella vaccines for which the manufacturer does not provide an appropriate method to distinguish bacteriologicall wild – type strains of salmonella from vaccine strains shall not be used. Application of live attenuated vaccines to laying hens during the laying phase is prohibited.

Other preventive measures than vaccination in place

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

Movement of poultry and hatching eggs shall be carried out only in compliance with the classification of holdings which is performed for purposes of the prevention and control of infectious diseases and according to the health situation in the holding in relation to this disease. Movement is subject to the veterinary control and is carried out in compliance with the Decree of the Slovak Government No 297/2003 Coll.

Control program/mechanisms

The control program/strategies in place

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

The legal basis of the control programme is:

- Act No. 488/2002 Coll. on veterinary care and amendment of some acts,

- Regulation No 2160/2003/EC of the European Parliament and of the Council of 17. November 2003 on the control of salmonella and other specified food-borne zoonotic agents, on the basis of which must Member States draw up national programmes for control of salmonellae.

- Decree of the Slovak Government No 626/2004 Coll., on the monitoring of zoonoses and zoonotic agents,

- Decree of the Slovak Government No . 282/2003 Coll. on animal health requirements for the placing on the market of fresh poultry meat,

- Commission Regulation No. 1003/2005 implementing Regulation No 2160/2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in breeding flocks of Gallus gallus and amending Regulation No 2160/2003

- Commission Regulation No 1091/2005 implementing Regulation No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella.

The veterinary authorities are the respective authorities responsible for the control and coordination of fulfilment of the programme.

Recent actions taken to control the zoonoses

- National control programme for Salmonella infections in poultry Gallus Gallus breeding flocks in Slovak Republic in 2007-2009
- Control of movement of poultry and hatching eggs
- Vaccination
- Measures in case of positive finding : movement prohibition, birds, non-incubated eggs produced by the birds in the house, eggs for hatching , all poultry in the positive flock, including one – day chicks, must be slaughtered or destroyed so as to reduce as much as possible the risk of spreading salmonella, antibiotics may be used in accordance with legislation

Measures in case of the positive findings or single cases

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

1. Investigation of flocks which are positive at the first examination

In the case of positive results of samples the District Veterinary and Food Administration shall arrange for taking of official samples in positive poultry flocks for the confirmation of the first results.

The samples must be taken at random from within each house of birds on the farm, the size of sample being selected in accordance with the table at point 2.1 (Sampling at holding) From each house 5 randomly selected birds from various pars of the house are used as a sample, and samples of liver, ovary and intestines must be taken from each bird for salmonella examination.

2. Measures in flocks where infection is confirmed by examination of an official sample

The measures must comply with the following minimum requirements:

a) no bird may leave the house concerned unless the competent authority has authorized the slaughter and safe destruction under supervision or slaughter in a slaughterhouse designated by the competent authority.

b) non-incubated eggs produced by the birds in the house in question must be safely destroyed on the spot or after appropriate marking be taken under supervision to an approved egg-processing establishment to be heat treated in accordance with the requirements of the special rule.

c) all poultry in the positive flock, including one – day chicks, must be slaughtered or destroyed so as to reduce as much as possible the risk of spreading salmonella. Slaughtering must be carried out in accordance with the legislation on food hygiene. By – products not intended for human consumption must be disposed of in accordance with Regulation (EC) No. 1774/2002 of the European Parliament and of the Council of 3. October 2002 laying down health rules concerning animal by – products not intended for human consumption.

d) Where eggs for hatching are still present in a hatchery, they must be safely destroyed or treated as high risk material in accordance with Regulation (EC) No. 1774/2002 of the European Parliament and of the Council.

e) A thorough cleansing and disinfection must be carried out after slaughtering or destruction from infected flocks, including safe disposal of manure or litter, in accordance with procedure laid down by the competent veterinary

administration
authority.
d) Antibiotics may be used in accordance with Commission Regulation (EC) No. No. 1091/2005 only.

Notification system in place

Holder of animals, operator of the hatchery is obliged to notify the presence without any delay, according
to § 35of the Act No. 488/2002 Coll. on veterinary care.
In case of breaking the law an owner, holder committed an offence according to § 43 of the Act No. 488/2002 Coll. on veterinary care and administrative infringement according to the § 44.
The state veterinary laboratories in the Slovak Republic notify the results of all negative examinations in rearing and adult breeding flocks and in hatcheries to the competent District Veterinary and Food Administrations. The District Veterinary and Food Administrations notify in the stated date the Monthly report on the results to the State Veterinary and Food Administration of the Slovak Republic (they send the notification for information to the Regional Veterinary and Food Administration).
Where as a result of monitoring carried out the presence of Salmonella enteritidis, Salmonella typhimurium, Salmonella hadar, Salmonella infantis and Salmonella virchow is detected in a breeding flock, the person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock notify the results to the competent District Veterinary and Food Administration.
Reporting shall include:
- detailed description of the options implemented for the sampling scheme and the type of samples taken, as appropriate
- number of existing breeding flocks and those tested
- results of the testing
- explanations on the results, in particular concerning exceptional cases.

Relevance of the findings in animals to findings in foodstuffs and to human cases

When official samples are being taken on a holding or in cases of justified suspicion, the sampling must be carried out on the compound feedingstuffs used to feed poultry.
Where a sample is positive for salmonella, the competent authority starts to carry out an investigation in order to:
c) identify the source of contamination, in particular by means of official samples taken at different stages of production,
d) examine the application of rules and controls concerning the disposal and processing of animal waste and in particular those which are mentioned in accordance with the special rule

e) establish procedures for good manufacturing practices and ensure compliance with recognized procedures.

H. Salmonella spp. in Gallus Gallus - flocks of laying hens

Monitoring system

Sampling strategy

Laying hens flocks

Official checks at the level of poultry flocks are organized and carried out by the relevant District Veterinary and Food Administration, which also take measures in the case of positive results. Sampling in poultry flocks is carried out by farmers or private veterinarians. Official confirmation samples are taken and sent for laboratory examination by official veterinarians from the relevant District Veterinary and Food Administrations.

The sampling frame has covered all flocks of adult laying hens of Gallus gallus (laying flocks). The geographical area in which the programme has been performed depends on density of holdings of laying hens.
Adult laying flocks shall be sampled:
-by the operator
Sampling by the operator shall take place at least every fifteen weeks. The first sampling shall take place at the age of 24 ± 2 weeks.
-by the competent authority (official sampling)

The control programme is yearly evaluated.

Frequency of the sampling

Laying hens: Rearing period

Pullets two weeks before moving to laying phase

Laying hens: Production period

Every 15 weeks by the operator The first sampling shall take place at the age of 24 ± 2 weeks. -by the competent authority (official sampling) Sampling by the competent authority shall take place at least: a. in one flock per year per holding comprising at least 1 000 birds; b. at the age of 24 ± 2 weeks in laying flocks housed in buildings where salmonella was detected in the preceding flock; c. in any case of suspicion of Salmonella enteritidis or Salmonella typhimurium infection, as a result of the epidemiological investigation of food-borne

Type of specimen taken

Laying hens: Day-old chicks

Internal linings of delivery boxes

Laying hens: Rearing period

Faeces

Laying hens: Production period

Dust

Methods of sampling (description of sampling techniques)

Laying hens: Production period

In cage flocks
2 × 150 grams of naturally pooled faeces shall be taken from all belts or scrapers in the house after running the manure removal system; however, in the case of step cage houses without scrapers or belts 2 × 150 grams of mixed fresh faeces must be collected from 60 different places beneath the cages in the dropping pits.

In barn or free-range houses
Two pairs of boot swabs or socks be taken, without changing overboots between boot swabs.

In the case of sampling by the competent authority
250 ml containing at least 100 gram of dust shall be collected from prolific sources of dust throughout the house. If there is not sufficient dust, an additional sample of 150 grams naturally pooled faeces or an additional pair of boot swabs or socks shall be taken. In the case of sampling referred to in point II b), c) and d), the competent authority shall satisfy itself by conduction further tests as appropriate that the results of examinations for salmonella in birds are not affected by the use of antimicrobials in the flocks.

Case definition

Laying hens: Production period

When result of monitoring carried out the presence of Salmonella enteritidis, Salmonella typhimurium is detected in a laying flock.

Diagnostic/analytical methods used

Laying hens: Day-old chicks

Bacteriological method: ISO 6579:2002

Laying hens: Rearing period

Bacteriological method: ISO 6579:2002

Laying hens: Production period

Bacteriological method: ISO 6579:2002

Laying hens: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Laying hens: At slaughter

Bacteriological method: ISO 6579:2002

Eggs at packing centre (flock based approach)

Bacteriological method: ISO 6579:2002

Vaccination policy

Laying hens flocks

Use of vaccines and antimicrobials in the framework of this programme must be realized according to Commission Regulation (EC) No 1177/2006 of 1. August 2006 implementing Regulation (EC) No 2160/2003 as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella in poultry.
Vaccination programme against Salmonella enteritidis shall be applied at least during rearing to all laying hens from 1 January 2008 as long as they did not demonstrated prevalence below 10% based on the monitoring.
Vaccination is allowed in laying hens in the Slovak Republic using death or live marked vaccines registered by the Institute for the State Control of Veterinary Biological and Medicaments in Nitra. Live salmonella vaccines for which the manufacturer does not provide an appropriate method to distinguish bacteriological wild – type strains of salmonella from vaccine strains shall not be used. Application of live attenuated vaccines to laying hens during the laying phase is prohibited.

Other preventive measures than vaccination in place

Laying hens flocks

Movement of poultry shall be carried out only in compliance with the classification of holdings which is performed for purposes of the prevention and control of infectious diseases and according to the health situation in the holding in relation to this disease. Movement is subject to the veterinary control and is carried out in compliance with the Ordinance No 297/2003 Coll.

Control program/mechanisms

The control program/strategies in place

Laying hens flocks

The control programmes / strategies in place
The legal basis of the control programme is:
- Act No. 488/2002 Coll. on veterinary care and amendment of some acts (hereinafter only “Act No. 488/2002 Coll.”)
- Regulation of the European Parliament and of the Council No 2160/2003/EC of 17. November 2003 on the control of salmonella and other specified food-borne zoonotic agents, on the basis of which must Member States draw up national programmes for control of salmonellae (hereinafter only “Regulation No. 2160/2003”)
- Ordinance of the Government of the Slovak Republic No 626/2004 Coll., on the monitoring of zoonoses and zoonotic agents (hereinafter only “Ordinance No. 626/2004 Coll.”)
- Commission Regulation (EC) No. 1168/2006 of 31 July 2006 implementing Regulation (EC) No 2160/2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in laying hens of Gallus gallus

and amending Regulation (EC) No 1003/2005 (hereinafter only Regulation No. 1168/2006")
- Commission Regulation (EC) No 1177/2006 of 1. August 2006 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella in poultry (hereinafter only "Regulation No. 1177/20066")
And using the rules stated in:
- Draft Commission Regulation (EC) No…/… of… amending Regulation (EC) No 2160/2003 and Decision (SANCO/10361/2004 Rev. 15) with regard to placing on the market of eggs from salmonella infected flocks of laying hens – SANCO/1188/2006r5

The target for the reduction of Salmonella enteritidis and Salmonella typhimurium in adult laying hens of Gallus gallus shall be an annual minimum percentage of reduction of positive flocks of adult laying hens equal to at least 20 % if the prevalence in the preceding years was between 10 and 19% base on the results of the baseline study as carried out pursuant to Commission Decision 2004/665/EC from 1 October 2004 to 30 September 2005.

Recent actions taken to control the zoonoses

- National control programme for Salmonella infections in laying hens Gallus Gallus in Slovak Republic in 2007-2009
- Control of movement of poultry and hatching eggs
- Vaccination
- Measures in case of positive finding described below

Measures in case of the positive findings or single cases

Laying hens flocks

The measures must comply with the following minimum requirements:
1) no bird may leave the house concerned unless the competent authority has authorized the slaughter and safe destruction under supervision or slaughter in a slaughterhouse designated by the competent authority.
2) When birds from infected flocks are slaughtered or destroyed, steps must be taken to reduce the risk of spreading zoonoses as far as possible. Slaughtering must be carried out in accordance with Community legislation on food hygiene. Products derived from such birds may be placed on the market for human consumption in accordance with community legislation on food hygiene and, once applicable, part E (appointing the Specific requirements concerning fresh meat) of the ANNEX II of the Regulation No 2160/2003/EC. If not destined for human consumption, such products must be used or disposed of in accordance with Regulation (EC) No. 1774/2002.

3) A thorough cleansing and disinfection must be carried out after slaughtering or destruction from infected flocks, including safe disposal of manure or litter, in accordance with procedure laid down by the competent veterinary administration authority.
4) Eggs originating from flocks with unknown health status, that are suspected of being infected or from infected flocks may be used for human consumption only if treated in a manner that guarantees the elimination of all salmonella serotypes with public health significance in accordance with Community legislation on food hygiene.
5) The competent authority may decide to lift restrictions laid down in point 4 if Salmonella enteritidis or Salmonella typhimurium is not confirmed by the following sampling protocol under the supervision of the competent authority:
• The technical specifications referred to in Article 5 of Decision 2004/665/EC (7 samples). However subsample of 25 grams shall be collected of each faecal material and dust sample. All samples shall be analysed separately,
or,
• bacteriological investigation of the internal organs of 300 birds.

Notification system in place

Owner or holder of laying hens is obliged to notify the suspicion and outbreak of Salmonella infection without any delay, according to § 35 of the Act No. 488/2002 Coll. on veterinary care. In case of breaking the law an owner or holder committed an offence according to § 43 of the Act No. 488/2002 Coll. on veterinary care and administrative infringement according to the § 44.
The state veterinary laboratories in the Slovak Republic notify the results of all negative examinations of adult laying flocks to the competent District Veterinary and Food Administrations. The District Veterinary and Food Administrations notify in the stated date the monthly report on the results to the State Veterinary and Food Administration of the Slovak Republic (they send the notification for information to the Regional Veterinary and Food Administration).
Where as a result of monitoring carried out the presence of Salmonella enteritidis, Salmonella typhimurium is detected in a laying flock, the person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock notify the results to the competent District Veterinary and Food Administration.

Relevance of the findings in animals to findings in foodstuffs and to human cases

When official samples are being taken on a holding or in cases of justified suspicion, the sampling must be carried out on the compound feedingstuffs used to feed poultry. Where a sample is positive for salmonella, the competent authority starts to carry out an investigation in order to:
• detect the source of contamination, in particular by means of official samples taken at different stages of production,

• examine the application of rules and controls concerning the disposal and processing of animal waste and in particular those which are mentioned in accordance with the special rule,
• establish procedures for good manufacturing practices and ensure compliance with recognized procedures.

I. Salmonella spp. in Gallus Gallus - broiler flocks

Results of the investigation

In broilers there were investigated 2584 flocks of one-day-chickens with prevalence of 4, 5% and during rearing period 3,34% prevalence was in 3056 tested flocks. Predominated serovar in broilers was S. enteritidis followed by S. Tennessee.

Table Salmonella in breeding flocks of Gallus gallus

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	Salmonella spp., unspecified
Gallus gallus (fowl) - parent breeding flocks for egg production line - day-old chicks - at farm	6	SVFI	flock	24	0						
Gallus gallus (fowl) - parent breeding flocks for egg production line - during production period - at farm	8	SVFI	flock	53	0						
Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period - at farm	6	SVFI	flock	38	2	1			1		
Gallus gallus (fowl) - parent breeding flocks for egg production line - hatching eggs - at hatchery	6	SVFI	animal	17	0						
Gallus gallus (fowl) - parent breeding flocks for meat production line - day-old chicks - at farm	60	SVFI	flock	193	2	2					
Gallus gallus (fowl) - parent breeding flocks for meat production line - during production period - at farm	70	SVFI	flock	118	0						
Gallus gallus (fowl) - parent breeding flocks for meat production line - during rearing period - at farm	60	SVFI	flock	75	0						
Gallus gallus (fowl) - parent breeding flocks for meat production line - hatching eggs - at hatchery	60	SVFI	animal	741	2	2					
Gallus gallus (fowl) - parent breeding flocks, unspecified - during production period - at farm - Control and eradication programmes - official and industry sampling	78	DVFA, SVFI	flock	78	0						
Gallus gallus (fowl) - parent breeding flocks, unspecified - during rearing period - at farm - Control and eradication programmes - official and industry sampling	66	DVFA, SVFI	flock	66	0						

Table Salmonella in breeding flocks of Gallus gallus

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	Salmonella spp., unspecified
Gallus gallus (fowl) - parent breeding flocks, unspecified - hatching eggs - at hatchery - Control and eradication programmes - official and industry sampling	66	DVFA, SVFI	animal	801	0						

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Agona	S. Bareilly	S. Blockley	S. Bovismorbificans	S. Bredeney	S. Derby
Ducks - breeding flocks - at farm	5	SVFI	animal	13	4						
Ducks - meat production flocks - at farm	4	SVFI	animal	5	4	1		1			
Ducks - unspecified - at farm		SVFI	animal	17	0						
Gallus gallus (fowl) - broilers - day-old chicks - at farm	544	SVFI	animal	2584	117		7				
Gallus gallus (fowl) - broilers - during rearing period - at farm	544	SVFI	animal	3056	102		5				
Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study - at slaughterhouse - Survey - EU baseline survey	544	SVFI	batch	422	91	7	6				
Gallus gallus (fowl) - broilers - unspecified		SVFI	animal	9	0						
Gallus gallus (fowl) - laying hens - day-old chicks - at farm - Control and eradication programmes - official and industry sampling	109	SVFI	flock	109	0						
Gallus gallus (fowl) - laying hens - during production period - at farm [1)]	139	SVFI	flock	559	62	2	1				1
Gallus gallus (fowl) - laying hens - during production period - at farm - Control and eradication programmes - official and industry sampling	139	DVFA, SVFI	flock	138	10						
Gallus gallus (fowl) - laying hens - during rearing period - at farm	109	SVFI	flock	99	7	7					
Geese - breeding flocks	3	SVFI	animal	4	2						
Geese - meat production flocks	1	SVFI	animal	14	1			1			
Geese - unspecified		SVFI	animal	1	0						
Poultry, unspecified		SVFI	animal	3	1						
Turkeys - breeding flocks - at farm	38	SVFI	animal	210	10						

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Agona	S. Bareilly	S. Blockley	S. Bovismorbificans	S. Bredeney	S. Derby
Turkeys - meat production flocks - at farm	22	SVFI	animal	138	9				1	2	
Turkeys - unspecified - at farm		SVFI	animal	12	2						

	S. Enteritidis	S. Hadar	S. Havana	S. Indiana	S. Infantis	S. Kentucky	S. Kottbus	S. Lille	S. Livingstone	S. Mbandaka	S. Montevideo
Ducks - breeding flocks - at farm		1		1			1				
Ducks - meat production flocks - at farm										1	
Ducks - unspecified - at farm											
Gallus gallus (fowl) - broilers - day-old chicks - at farm	76	6			1						
Gallus gallus (fowl) - broilers - during rearing period - at farm	67		6		8	7		1	3		3
Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study - at slaughterhouse - Survey - EU baseline survey	27		3	14	15	14				1	
Gallus gallus (fowl) - broilers - unspecified											
Gallus gallus (fowl) - laying hens - day-old chicks - at farm - Control and eradication programmes - official and industry sampling											
Gallus gallus (fowl) - laying hens - during production period - at farm [1)]	51		1	1	6	2			1		1
Gallus gallus (fowl) - laying hens - during production period - at farm - Control and eradication programmes - official and industry sampling	10										
Gallus gallus (fowl) - laying hens - during rearing period - at farm											

Table Salmonella in other poultry

	S. Enteritidis	S. Hadar	S. Havana	S. Indiana	S. Infantis	S. Kentucky	S. Kottbus	S. Lille	S. Livingstone	S. Mbandaka	S. Montevideo
Geese - breeding flocks	1		1								
Geese - meat production flocks			0								
Geese - unspecified											
Poultry, unspecified	1										
Turkeys - breeding flocks - at farm											
Turkeys - meat production flocks - at farm					2						
Turkeys - unspecified - at farm											

	S. Saintpaul	S. Schwarzengrund	S. Senftenberg	S. Tennessee	S. Typhimurium	S. 6,8:e,h:-	Salmonella spp., unspecified
Ducks - breeding flocks - at farm						1	
Ducks - meat production flocks - at farm			1				
Ducks - unspecified - at farm							
Gallus gallus (fowl) - broilers - day-old chicks - at farm			1	25	1		
Gallus gallus (fowl) - broilers - during rearing period - at farm				2			
Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study - at slaughterhouse - Survey - EU baseline survey		1		3			
Gallus gallus (fowl) - broilers - unspecified							
Gallus gallus (fowl) - laying hens - day-old chicks - at farm - Control and eradication programmes - official and industry sampling							

Table Salmonella in other poultry

	S. Saintpaul	S. Schwarzengrund	S. Senftenberg	S. Tennessee	S. Typhimurium	S. 6,8:e,h:-	Salmonella spp., unspecified
Gallus gallus (fowl) - laying hens - during production period - at farm [1)]							
Gallus gallus (fowl) - laying hens - during production period - at farm - Control and eradication programmes - official and industry sampling							
Gallus gallus (fowl) - laying hens - during rearing period - at farm							
Geese - breeding flocks							
Geese - meat production flocks							
Geese - unspecified							
Poultry, unspecified							
Turkeys - breeding flocks - at farm	7				3		
Turkeys - meat production flocks - at farm	3				1		
Turkeys - unspecified - at farm	2						

Comments:

[1)] more than one serovar in one sample

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Hadar	S. Typhimurium	Salmonella spp., unspecified
Birds - pet animals	SVFI	animal	14	0				
Guinea fowl	SVFI	animal	1	0				
Guinea fowl - meat production flocks	SVFI	flock	30	2		1		1
Guinea fowl - parent flocks	SVFI	flock	1	0				
Ostriches	SVFI	flock	6	2	2			
Parrots	SVFI	animal	43	0				
Pigeons	SVFI	animal	81	3			3	

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Agona	S. Bareilly	S. Bovismorbificans	S. Bredeney	S. Choleraesuis	S. Derby	S. Dublin
Cats	SVFI, SVI	animal	27	2							
Cattle (bovine animals) - adult cattle over 2 years	SVFI, SVI	animal	231	3							
Cattle (bovine animals) - calves (under 1 year)	SVFI, SVI	animal	373	12			1	1			1
Deer	SVFI, SVI	animal	19	0							
Dogs	SVFI, SVI	animal	335	7		1					
Foxes	SVFI, SVI	animal	12	2							
Goats	SVFI, SVI	animal	3	0							
Mice - laboratory animal	SVFI, SVI	animal	3	0							
Minks	SVFI, SVI	animal	4	0							
Pigs - Survey - EU baseline survey	SVFI, SVI	animal	1930	67	4		5	3		13	
Pigs - breeding animals	SVFI, SVI	animal	6	0							
Pigs - fattening pigs	SVFI, SVI	animal	578	15					4	1	
Sheep	SVFI, SVI	animal	153	2							
Solipeds, domestic - horses	SVFI, SVI	animal	75	0							
Zoo animals, all	SVFI, SVI	animal	37	2							

	S. Enteritidis	S. Goldcoast	S. Hadar	S. Indiana	S. Litchfield	S. London	S. Newport	S. Ohio	S. Poona	S. Rissen	S. Typhimurium
Cats			1	1							
Cattle (bovine animals) - adult cattle over 2 years											3
Cattle (bovine animals) - calves (under 1 year)											9

Table Salmonella in other animals

	S. Enteritidis	S. Goldcoast	S. Hadar	S. Indiana	S. Litchfield	S. London	S. Newport	S. Ohio	S. Poona	S. Rissen	S. Typhimurium
Deer											
Dogs	3									1	
Foxes	2										
Goats											
Mice - laboratory animal											
Minks											
Pigs - Survey - EU baseline survey	18	1				3	1	2			14
Pigs - breeding animals											
Pigs - fattening pigs						1					6
Sheep											
Solipeds, domestic - horses											
Zoo animals, all					1				1		

	S. Virchow	S. Worthington	S. 4,12:i:-	S. 6,7:-:1,5	S. IIIa 41:z4,z23:-	Salmonella spp., unspecified	S. IIIb
Cats							
Cattle (bovine animals) - adult cattle over 2 years							
Cattle (bovine animals) - calves (under 1 year)							
Deer							
Dogs	1				1		
Foxes							

Table Salmonella in other animals

	S. Virchow	S. Worthington	S. 4,12:i:-	S. 6,7:-:1,5	S. IIIa 41:z4,z23:-	Salmonella spp., unspecified	S. IIIb
Goats							
Mice - laboratory animal							
Minks							
Pigs - Survey - EU baseline survey		1		2			
Pigs - breeding animals							
Pigs - fattening pigs			1	2			
Sheep							2
Solipeds, domestic - horses							
Zoo animals, all							

2.1.5 Salmonella in feedingstuffs

A. Salmonella spp. in feed

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

In 2008 there were investigated 2697 samples. In comparision with 2007 the amount of examinated samples increased.

Comparing the results from the years 2004, 2005, 2006, 2007 there has been a significant decline in amount of tested samples – a total of 5 276 in 2004, 5 787 in 2005, 2 103 in 2006 and 1406 in 2007. This trend has been mainly recorded in feeds of animal origin as well as in compound feedingstuffs.
In feed of animal origin there were 13 positive samples in meat and bone meal, frozen pultry offal and in pet food. Two serovars were predominate – S. livingstone and S. montevideo.

In other feedingstuufs were found S. enterica subsp. enterica in one sample of barley. In compound feeds there were 13 positive samples from 1324 samples taken.
Predominate serovars were S. agona and S. enteritidis.

In 2008 there were totally isolated 14 serovars of Salmonella spp.without marked dominance of some serovar. S. Enteritidis was isolated in 5 samples, S. Havana in 4 samples, S. Livingstone and S. Montevideo in 3 samples, S. London, S. Putten, S. Senftenberg, S. Tennessee in 2 samples, S. Typhimurium, S. Agona, S. Cannstatt, S. Infantis, S. Rissen, S.I. (4,12: i : -) in 1 sample. In four investigated samples there were found 2 serovars in one sample.

Recent actions taken to control the zoonoses

Samples intended for bacteriological testing for salmonella presence were taken within the frame of
official controls of farm animal feed manufacturing, as well as controls on animal farms and within
inspections of plants approved in accordance with Regulation of the European Parliament and of the
Council (EC) No 1774/ 2002 laying down health rules concerning animal byproducts not intended for human consumption. The samples were tested in the State Veterinary and Food Institutes, using the method STN ISO 6579. Tabulated data from individual laboratories were sent to the SVFI Bratislava which acts as the National Reference Laboratory for Salmonellosis and which compiled the results into a summary report.

Table Salmonella in feed material of animal origin

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Infantis	S. Livingstone	S. London	S. Montevideo	S. Putten
Feed material of land animal origin [1)]	SVFI	batch	25 g	150	0						
Feed material of land animal origin - animal fat	SVFI	batch	25 g	25	0						
Feed material of land animal origin - blood meal	SVFI	batch	25 g	2	0						
Feed material of land animal origin - dairy products	SVFI	batch	25 g	66	0						
Feed material of land animal origin - meat and bone meal [2)]	SVFI	batch	25 g	36	5			3	2	1	2
Feed material of land animal origin - offal	SVFI	batch	25 g	25	5	2				2	
Feed material of land animal origin - protein meal	SVFI	batch	25 g	10	0						
Feed material of marine animal origin - fish meal	SVFI	batch	25 g	40	0						
Pet food - final product - non-pelleted/meal	SVFI	batch	25 g	11	3		1				
Pet food - final product - pelleted	SVFI	batch	25 g	21	0						

	S. Senftenberg	S. Tennessee	S. Typhimurium	S. 4,12:i:-	Salmonella spp., unspecified
Feed material of land animal origin [1)]					
Feed material of land animal origin - animal fat					
Feed material of land animal origin - blood meal					
Feed material of land animal origin - dairy products					
Feed material of land animal origin - meat and bone meal [2)]	1				
Feed material of land animal origin - offal		1			

Table Salmonella in feed material of animal origin

	S. Senftenberg	S. Tennessee	S. Typhimurium	S. 4,12:i:-	Salmonella spp., unspecified
Feed material of land animal origin - protein meal					
Feed material of marine animal origin - fish meal					
Pet food - final product - non-pelleted/meal			1	1	
Pet food - final product - pelleted					

Comments:

[1)] others

[2)] more than 1 serovar in sample

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. enterica subsp. enterica
Feed material of cereal grain origin - barley derived	SVFI	batch	25 g	61	1				1
Feed material of cereal grain origin - maize	SVFI	batch	25 g	110	0				
Feed material of cereal grain origin - maize - derived	SVFI	batch	25 g	13	0				
Feed material of cereal grain origin - oat derived	SVFI	batch	25 g	2	0				
Feed material of cereal grain origin - other cereal grain derived	SVFI	batch	25 g	22	0				
Feed material of cereal grain origin - wheat derived	SVFI	batch	25 g	103	0				
Feed material of oil seed or fruit origin - linseed derived	SVFI	batch	25 g	2	0				
Feed material of oil seed or fruit origin - rape seed derived	SVFI	batch	25 g	49	0				
Feed material of oil seed or fruit origin - soya (bean) derived	SVFI	batch	25 g	175	0				
Feed material of oil seed or fruit origin - sunflower seed derived	SVFI	batch	25 g	58	0				
Other feed material - beet	SVFI	batch	25 g	3	0				
Other feed material - drinking water	SVFI	batch	25 g	1	0				
Other feed material - forages and roughages	SVFI	batch	25 g	326	0				
Other feed material - straws	SVFI	batch	25 g	26	0				
Silage	SVFI	batch	25 g	16	0				

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Agona	S. Enteritidis	S. Havana	S. Rissen	S. Senftenberg	S. Tennessee
Compound feedingstuffs for cattle - final product	SVFI	batch	25 g	413	2	1				1	
Compound feedingstuffs for fish - final product	SVFI	batch	25 g	5	0						
Compound feedingstuffs for pigs - final product	SVFI	batch	25 g	353	1		1				
Compound feedingstuffs for poultry (non specified) - final product	SVFI	batch	25 g	20	0						
Compound feedingstuffs for poultry - laying hens - final product	SVFI	batch	25 g	165	3		2		1		
Compound feedingstuffs for poultry -breeders - final product	SVFI	batch	25 g	27	0						
Compound feedingstuffs for rabbits - final product	SVFI	batch	25 g	4	0						
Compund feedingstuffs for poultry - broilers - final product	SVFI	batch	25 g	287	7			4			1
Pet food - dog snacks (pig ears, chewing bones)	SVFI	batch	25 g	36	0						
Pet food - final product - canned products	SVFI	batch	25 g	2	0						
Pet food - final product - pelleted	SVFI	batch	25 g	4	0						

	S. Typhimurium	S. group C	Salmonella spp., unspecified
Compound feedingstuffs for cattle - final product			
Compound feedingstuffs for fish - final product			
Compound feedingstuffs for pigs - final product			
Compound feedingstuffs for poultry (non specified) - final product			

Table Salmonella in compound feedingstuffs

	S. Typhimurium	S. group C	Salmonella spp., unspecified
Compound feedingstuffs for poultry - laying hens - final product			
Compound feedingstuffs for poultry -breeders - final product			
Compound feedingstuffs for rabbits - final product			
Compund feedingstuffs for poultry - broilers - final product		1	1
Pet food - dog snacks (pig ears, chewing bones)			
Pet food - final product - canned products			
Pet food - final product - pelleted			

2.1.6 Salmonella serovars and phagetype distribution

The methods of collecting, isolating and testing of the Salmonella isolates are described in the chapters above respectively for each animal species, foodstuffs and humans. The serotype and phagetype distributions can be used to investigate the sources of the Salmonella infections in humans. Findings of same serovars and phagetypes in human cases and in foodstuffs or animals may indicate that the food category or animal species in question serves as a source of human infections. However as information is not available from all potential sources of infections, conclusions have to be drawn with caution.

Table Salmonella serovars in animals

Serovars	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Other animals	
Sources of isolates	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**
Number of isolates in the laboratory		**15**	**67**	**15**	**392**		**29**	**5**		**20**
Number of isolates serotyped	**0**	**15**	**67**	**15**	**392**	**0**	**29**	**5**	**0**	**20**
Number of isolates per serovar										
S. Agona			4		9		1			
S. Bareilly					19					1
S. Blockley							2			
S. Bovismorbificans		1	5				1			
S. Bredeney		1	3				2			
S. Choleraesuis				4						
S. Derby			13	1	1					

Table Salmonella serovars in animals

Serovars	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Other animals	
Sources of isolates	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**
Number of isolates in the laboratory		**15**	**67**	**15**	**392**		**29**	**5**		**20**
Number of isolates serotyped	**0**	**15**	**67**	**15**	**392**	**0**	**29**	**5**	**0**	**20**
Number of isolates per serovar										
S. Dublin		1								
S. Enteritidis			18		234		1			7
S. Goldcoast			1							
S. Hadar					6		2			1
S. Havana					10		1			
S. Indiana					15		1			1
S. Infantis					30		2			
S. Kentucky					23					
S. Kottbus							1			
S. Lille					1					
S. Litchfield										1
S. Livingstone					4		1			

Table Salmonella serovars in animals

Serovars	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Other animals	
Sources of isolates	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**
Number of isolates in the laboratory		**15**	**67**	**15**	**392**		**29**	**5**		**20**
Number of isolates serotyped	**0**	**15**	**67**	**15**	**392**	**0**	**29**	**5**	**0**	**20**
Number of isolates per serovar										
S. London			3	1						
S. Mbandaka					1					
S. Montevideo					4					
S. Newport			1							
S. Ohio			2							
S. Poona										1
S. Rissen										1
S. Saintpaul							10	2		
S. Schwarzengrund					1					
S. Senftenberg					1		1			
S. Tennessee					30					
S. Typhimurium		12	14	6	3		1	3		3

Table Salmonella serovars in animals

Serovars	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Other animals	
Sources of isolates	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**
Number of isolates in the laboratory		**15**	**67**	**15**	**392**		**29**	**5**		**20**
Number of isolates serotyped	**0**	**15**	**67**	**15**	**392**	**0**	**29**	**5**	**0**	**20**
Number of isolates per serovar										
S. Virchow										1
S. Worthington			1							
S. 4,12:i:-				1						
S. 6,7:-:1,5			2	2						
S. 6,8:e,h:-							1			
S. IIIa 41:z4,z23:-										1
Salmonella spp., unspecified							1			
S. IIIb										2

Table Salmonella serovars in food

Serovars	Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin		Other food	
Sources of isolates	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**
Number of isolates in the laboratory	**1**		**10**		**20**						**45**	
Number of isolates serotyped	**1**	**0**	**10**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**45**	**0**
Number of isolates per serovar												
S. Aarhus											1	
S. Agona											1	
S. Anatum			1									
S. Bareilly			1		3							
S. Brandenburg			1									
S. Bredeney											3	
S. Derby	1		1									
S. Enteritidis			4		11						38	
S. Heidelberg					1							
S. Indiana					1							
S. Infantis					2							
S. Kentucky					1						1	

Table Salmonella serovars in food

Serovars	Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin		Other food	
Sources of isolates	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**
Number of isolates in the laboratory	**1**		**10**		**20**						**45**	
Number of isolates serotyped	**1**	**0**	**10**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**45**	**0**
Number of isolates per serovar												
S. Lille					1							
S. Ohio			1									
S. Typhimurium			1								1	

Table Salmonella serovars in feed

Serovars	Feed material of cereal grain origin		Pet food		Compound feedingstuffs, not specified		Feed material of land animal origin		Feed material of oil seed or fruit origin		Other feed material	
Sources of isolates	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**
Number of isolates in the laboratory	**1**		**3**		**13**		**14**					
Number of isolates serotyped	**1**	**0**	**3**	**0**	**13**	**0**	**14**	**0**	**0**	**0**	**0**	**0**
Number of isolates per serovar												
S. Agona					1							
S. Enteritidis					3		2					
S. Havana					4							
S. Infantis			1									
S. Livingstone							3					
S. London							2					
S. Montevideo							3					
S. Putten					1		2					
S. Senftenberg					1		1					
S. Tennessee					1		1					
S. Typhimurium			1									
S. 4,12:i:-			1									

Table Salmonella serovars in feed

Serovars	Feed material of cereal grain origin		Pet food		Compound feedingstuffs, not specified		Feed material of land animal origin		Feed material of oil seed or fruit origin		Other feed material	
Sources of isolates	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**
Number of isolates in the laboratory	**1**		**3**		**13**		**14**					
Number of isolates serotyped	**1**	**0**	**3**	**0**	**13**	**0**	**14**	**0**	**0**	**0**	**0**	**0**
Number of isolates per serovar												
S. group C					1							
Salmonella spp., unspecified					1							
S. enterica subsp. enterica	1											

Table Salmonella Enteritidis phagetypes in food

Phagetype	Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin		Other food	
Sources of isolates	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**	**Monitoring**	**Clinical**
Number of isolates in the laboratory			**3**		**2**						**28**	
Number of isolates phagetyped	**0**	**0**	**3**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**28**	**0**
Number of isolates per type												
PT 4											2	
PT 8					2						3	
PT 14b											2	
PT 21c											3	
2											1	
6c											2	
6											3	
4b											1	
8			3								7	
13											3	
PT 5a											1	

2.1.7 Antimicrobial resistance in Salmonella isolates

A. Antimicrobial resistance in Salmonella in pigs

Notification system in place

B. Antimicrobial resistance in Salmonella in poultry

Laboratory methodology used for identification of the microbial isolates

Notification system in place

C. Antimicrobial resistance in Salmonella in foodstuff derived from cattle

Notification system in place

D. Antimicrobial resistance of Salmonella spp. in animal

Control program/mechanisms

The control program/strategies in place

Antimicrobial resistance in Salmonella spp. isolated from cattle, pigs and poultry

Samples from cattle and pigs were taken from sick animals at farms or in subclinic cases at slaughterhouses. Samples from poultry are taken in compliance with control programs. The strains isolated during year were sent from State Veterinary and Food Institutes to National Reference Laboratory for Salmonella at State Veterinary and Food Institute Bratislava (NRL), there were made serotypization and antimicrobial resistance testing. At least one isolate from each notified case of Salmonella was confirmed in NRL. NRL selects strains for testing of antimicrobial resistance and tests only one isolate from several serotypes from one farmer once per year.

Results are keeping in database and tested isolates are stored minimum for 2 years.

Isolation is making according to ISO 6579 and Annex D. Serotypization was made according Kauffmann-White scheme. Susceptibility of Salmonella is testing by dilution method and testing of MIC (minimal inhibition concentration) using Muller-Hinton broth with required kation concentration.

Tests are making using standards for dilution micromethod according NCCLS/CLSI, WHO-GSS guidelines from producer. For control of quality was used E.coli strain ATCC 25922. NRL regularly participate on ring tests EQAS. As breakpoints were used cutt-off values recommended EUCAST in case of existing of these values.

Results of the investigation

Overall situation of resistance of strains S. enteritidis is favorable in cattle and pigs. Occurrence of pentaresistant S. typhimurium was recorded in calves as in previous years. Other resistant clones were found (A, T, ST, ATK resistance).
All resistant strains S. typhimurium isolated from pigs came from clinical samples, isolates from baseline survey were full susceptible. Resistance and multiresistance were recorded in strains S. 6,7; - ; 1,5 from clinical samples and baseline survey samples.

Overall situation of S. enteritidis resistance to antimicrobial stuffs in poultry is favorable, with rarely occurrence of resistant clones Nx and Cip. Incidence of pentaresistant S. typhimurium was isolated from ducks, rarely occurs other

resistant clones. The highest resistance and multiresistance was recorded in strains from turkeys mainly S. saintpaul and S. kiambu. In broilers was detected resistance and multiresistance in S. infantis, S. bareilly and S. bredeney.
In ducks resistance and multiresistance of strains isolated was in S. hadar, S. Indiana and S.kottbus.

E. Antimicrobial resistance of Salmonella spp. in food

Control program/mechanisms

The control program/strategies in place

Resistance of Salmonella spp. in foodstuffs
(bovine meat, pork meat and poultry meat)

Samples of foodstuffs from bovine, pork and poultry meat were taken according direction of Stat Veterinary and Food Administration of the Slovak Republic "Temporary method of sampling and laboratory testing of products of animal origin on official controls for 2007" and Commission Direction 2073/2005. The strains isolated during year were sent from State Veterinary and Food Institutes to National Reference Laboratory for Salmonella at State Veterinary and Food Institute Bratislava (NRL), there were made serotypization and antimicrobial resistance testing. At least one isolate from each notified case of Salmonella is confirmed in NRL.
Antimicrobial testing of these isolates is performing only for monitoring of resistance. Results are keeping in database and tested isolates are stored minimum for 2 years.

Isolation is making according to ISO 6579 and Annex D. Serotypization was made according Kauffmann-White scheme. Susceptibility of Salmonella is testing by dilution method and testing of MIC (minimal inhibition concentration) using Muller-Hinton broth with required kation concentration.

Tests are making using standards for dilution micromethod according NCCLS/CLSI, WHO-GSS guidelines from producer. For control of quality was used E.coli strain ATCC 25922. NRL regularly participate on ring tests EQAS.
Low amount of isolates able only limited evaluation of resistance level in these foodstuffs.

Results of the investigation

Overall situation of S. enteritidis resistance to antimicrobial stuffs is favorable.
Resistance in strains from meat from cattle was recorded only in S. infantis.
Resistance of strains from pork meat was recorded in S. typhimurium, S. 4,5,12; i ; - ; and in S. derby.
Rarely in poultry meat occured resistant clones Nx and Cip. Resistance was found in S. typhimurium and multiresistance in S. bareilly.

Table Antimicrobial susceptibility testing of S. Bareilly in Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Bareilly		Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		2																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	2	0						1	1														0.25	32
	Kanamycin	16	2	0										2											4	128
	Neomycin		0	0																						
	Streptomycin	32	2	0											1	1									2	128
Amphenicols	Chloramphenicol	16	2	0										2											2	64
	Florfenicol	16	2	0										2											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	2	0				1	1																0.06	4
	Ceftazidim	2	2	0						1	1														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	2	1			1				1														0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	2	0								1	1												0.5	32
Polymyxins	Colistin	8	2	0											2										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	2	1										1					1						4	64
Sulfonamides	Sulfamethoxazol	256	2	1													1						1		8	1024
Tetracyclines	Tetracyclin	8	2	1								1							1						1	64
Trimethoprim	Trimethoprim	2	2	0							2														0.5	32
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																						

Table Antimicrobial susceptibility testing of S. Bareilly in Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - quantitative data [Dilution method]

Footnote:

Fully sensitive - 1x, SuTNxCip resistance - 1x.

Table Antimicrobial susceptibility testing of S. Bareilly in broilers - Gallus gallus (fowl) - sampling in the framework of the broiler baseline study - at slaughterhouse - animal sample - neck skin - Survey - EU baseline survey - quantitative data [Dilution method]

S. Bareilly		Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study - - neck skin - Survey - EU baseline survey																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		6																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	6	0						6														0.25	32
	Kanamycin	16	6	0										6										4	128
	Neomycin		0	0																					
	Streptomycin	32	6	0												6								2	128
Amphenicols	Chloramphenicol	16	6	0										3	3									2	64
	Florfenicol	16	6	0										6										2	64
Cephalosporins	3rd generation cephalosporins		0	0																					
	Cefotaxim	0.5	6	0					4	2														0.06	4
	Ceftazidim	2	6	0							5	1												0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	6	6							6													0.008	8
	Enrofloxacin		0	0																					
Penicillins	Ampicillin	4	6	0								1	5											0.5	32
Polymyxins	Colistin	8	6	0											6									8	16
	Polymyxins		0	0																					
Quinolones	Nalidixic acid	16	6	6															6					4	64
Sulfonamides	Sulfamethoxazol	256	6	6																			6	8	1024
Tetracyclines	Tetracyclin	8	6	6															6					1	64
Trimethoprim	Trimethoprim	2	6	0							6													0.5	32
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Table Antimicrobial susceptibility testing of S. Bareilly in broilers - Gallus gallus (fowl) - sampling in the framework of the broiler baseline study - at slaughterhouse - animal sample - neck skin - Survey - EU baseline survey - quantitative data [Dilution method]

Footnote:

SuTNxCip resistance - 6x.

Table Antimicrobial susceptibility testing of S. Bareilly - qualitative data

S. Bareilly		Gallus gallus (fowl) - broilers		Gallus gallus (fowl) - broilers - Survey - EU baseline survey	
Isolates out of a monitoring program (yes/no)		yes		yes	
Number of isolates available in the laboratory		2		6	
Antimicrobials:		N	n	N	n
Aminoglycosides	Gentamicin	2	0	6	0
	Kanamycin	2	0	6	0
	Streptomycin	2	0	6	0
Amphenicols	Chloramphenicol	2	0	6	0
	Florfenicol	2	0	6	0
Cephalosporins	Cefotaxim	2	0	6	0
	Ceftazidim	2	0	6	0
Fluoroquinolones	Ciprofloxacin	2	1	6	6
Penicillins	Ampicillin	2	0	6	0
Polymyxins	Colistin	2	0	6	0
Quinolones	Nalidixic acid	2	1	6	6
Sulfonamides	Sulfamethoxazol	2	1	6	6
Tetracyclines	Tetracyclin	2	1	6	6
Trimethoprim	Trimethoprim	2	0	6	0

Footnote:

Gallus gallus (fowl) - broilers: Fully sensitive 1x, SuTNxCip resistance - 1x; Gallus gallus (fowl) broilers - EU baseline survey: SuTNxCip resistance - 6x.

Table Antimicrobial susceptibility testing of S. Bareilly in meat preparation - Meat from broilers (Gallus gallus) - intended to be eaten cooked - at retail - domestic production - Monitoring - quantitative data [Dilution method]

S. Bareilly		Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - domestic production - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		3																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	3	0						3															0.25	32
	Kanamycin	16	3	0										3											4	128
	Neomycin		0	0																						
	Streptomycin	32	3	0												3									2	128
Amphenicols	Chloramphenicol	16	3	0										2	1										2	64
	Florfenicol	16	3	0										3											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	3	0					1	2															0.06	4
	Ceftazidim	2	3	0							2	1													0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	3	3							3														0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	3	0									3												0.5	32
Polymyxins	Colistin	8	3	0											3										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	3	3															3						4	64
Sulfonamides	Sulfamethoxazol	256	3	3																			3		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	3	3															3						1	64
Trimethoprim	Trimethoprim	2	3	0							3														0.5	32

Table Antimicrobial susceptibility testing of S. Bareilly in meat preparation - Meat from broilers (Gallus gallus) - intended to be eaten cooked - at retail - domestic production - Monitoring - quantitative data [Dilution method]

S. Bareilly		Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - domestic production - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		3																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

SuTNxCip resistance - 3x.

Table Antimicrobial susceptibility testing of S. Blockley in Ducks - unspecified - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Blockley		Ducks - unspecified - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0							1														0.25	32
	Kanamycin	16	1	1																1					4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0													1								2	128
Amphenicols	Chloramphenicol	16	1	0									1												2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	1						1															0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0								1													0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	1															1						4	64
Sulfonamides	Sulfamethoxazol	256	1	0												1									8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	1															1						1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. Blockley in Ducks - unspecified - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Blockley		Ducks - unspecified - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

TNxCipK resistance - 1x.

Table Antimicrobial susceptibility testing of S. Bredeney in meat products - Meat from pig - fermented sausages - at retail - domestic production - Monitoring - quantitative data [Dilution method]

S. Bredeney		Meat from pig - meat products - fermented sausages - at retail - domestic production - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0							1														0.25	32
	Kanamycin	16	1	1																1					4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0													1								2	128
Amphenicols	Chloramphenicol	16	1	0										1											2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0			1																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0								1													0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	1																			1		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	1															1						1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. Bredeney in meat products - Meat from pig - fermented sausages - at retail - domestic production - Monitoring - quantitative data [Dilution method]

S. Bredeney		Meat from pig - meat products - fermented sausages - at retail - domestic production - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

SuTK resistance - 1x.

Table Antimicrobial susceptibility testing of S. Choleraesuis in Pigs - mixed herds - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

S. Choleraesuis		Pigs - mixed herds - at farm - animal sample - Clinical investigations																								
Isolates out of a monitoring program (yes/no)		no																								
Number of isolates available in the laboratory		3																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	3	0							3														0.25	32
	Kanamycin	16	3	0										3											4	1
	Neomycin		0	0																						
	Streptomycin	32	3	0												2	1								2	128
Amphenicols	Chloramphenicol	16	3	0										3											2	64
	Florfenicol	16	3	0									3												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	3	0				3																	0.06	4
	Ceftazidim	2	3	0						3															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	3	1			2				1														0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	3	0								3													0.5	32
Polymyxins	Colistin	8	3	0											3										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	3	1										2			1								4	64
Sulfonamides	Sulfamethoxazol	256	3	0											1	2									8	1024
Tetracyclines	Tetracyclin	8	3	0								3													1	64
Trimethoprim	Trimethoprim	2	3	0							3														0.5	32
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																						

Table Antimicrobial susceptibility testing of S. Choleraesuis in Pigs - mixed herds - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

Footnote:

Fully sensitive - 2x, NxCip resistance - 1x.

Table Antimicrobial susceptibility testing of S. Derby - qualitative data

S. Derby		Pigs - Survey - EU baseline survey		Gallus gallus (fowl) - laying hens		Pigs	
Isolates out of a monitoring program (yes/no)		yes		yes		no	
Number of isolates available in the laboratory		7		2		1	
Antimicrobials:		N	n	N	n	N	n
Aminoglycosides	Gentamicin	7	0	2	0	1	0
	Kanamycin	7	0	2	0	1	0
	Streptomycin	7	0	2	0	1	0
Amphenicols	Chloramphenicol	7	0	2	0	1	0
	Florfenicol	7	0	2	0	1	0
Cephalosporins	Cefotaxim	7	0	2	0	1	0
	Ceftazidim	7	0	2	0	1	0
Fluoroquinolones	Ciprofloxacin	7	0	2	0	1	0
Penicillins	Ampicillin	7	1	2	0	1	0
Polymyxins	Colistin	7	0	2	0	1	0
Quinolones	Nalidixic acid	7	0	2	0	1	0
Sulfonamides	Sulfamethoxazol	7	0	2	0	1	0
Tetracyclines	Tetracyclin	7	0	2	0	1	0
Trimethoprim	Trimethoprim	7	0	2	0	1	0

Footnote:

Pigs: Fully sensitive - 1x; Pigs - EU baseline survey: Fully sensitive - 6x, A resistance - 1x; Gallus gallus (fowl) - laying hens: Fully sensitive - 2x.

Table Antimicrobial susceptibility testing of S. Derby in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

S. Derby		Pigs - mixed herds - - faeces - Survey - EU baseline survey																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		7																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	7	0						5	2														0.25	32
	Kanamycin	16	7	0										7											4	128
	Neomycin		0	0																						
	Streptomycin	32	7	0											7										2	128
Amphenicols	Chloramphenicol	16	7	0									1	6											2	64
	Florfenicol	16	7	0									1	6											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	7	0				2	5																0.06	4
	Ceftazidim	2	7	0						2	5														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	7	0		1	6																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	7	1								1	5					1							0.5	32
Polymyxins	Colistin	8	7	0											7										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	7	0										7											4	64
Sulfonamides	Sulfamethoxazol	256	7	0												1	5	1							8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	7	0								5	2												1	64
Trimethoprim	Trimethoprim	2	7	0							7														0.5	32

Table Antimicrobial susceptibility testing of S. Derby in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

S. Derby		Pigs - mixed herds - - faeces - Survey - EU baseline survey																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		7																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 6x, A resistance - 1x.

Table Antimicrobial susceptibility testing of S. Derby in Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Derby		Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		2																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	2	0						1	1														0.25	32
	Kanamycin	16	2	0										2											4	128
	Neomycin		0	0																						
	Streptomycin	32	2	0									1		1										2	128
Amphenicols	Chloramphenicol	16	2	0										2											2	64
	Florfenicol	16	2	0									1	1											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	2	0					2																0.06	4
	Ceftazidim	2	2	0							2														0.25	26
Fluoroquinolones	Ciprofloxacin	0.06	2	0		1	1																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	2	0								2													0.5	32
Polymyxins	Colistin	8	2	0											2										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	2	0										2											4	64
Sulfonamides	Sulfamethoxazol	256	2	0												1	1								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	2	0								2													1	64
Trimethoprim	Trimethoprim	2	2	0							2														0.5	32

Table Antimicrobial susceptibility testing of S. Derby in Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Derby		Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 2x.

Table Antimicrobial susceptibility testing of S. Derby in Pigs - fattening pigs - at slaughterhouse - animal sample - Surveillance - quantitative data [Dilution method]

S. Derby		Pigs - fattening pigs - at slaughterhouse - animal sample - Surveillance																								
Isolates out of a monitoring program (yes/no)		no																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0						1															0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0											1										2	128
Amphenicols	Chloramphenicol	16	1	0										1											2	64
	Florfenicol	16	1	0										1											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0					1																0.06	4
	Ceftazidim	2	1	0							1														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0		1																			0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0								1													0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	0													1								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	0								1													1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. Derby in Pigs - fattening pigs - at slaughterhouse - animal sample - Surveillance - quantitative data [Dilution method]

S. Derby		Pigs - fattening pigs - at slaughterhouse - animal sample - Surveillance																							
Isolates out of a monitoring program (yes/no)		no																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 1x.

Table Antimicrobial susceptibility testing of S. Derby - qualitative data

S. Derby		Meat from pig - meat preparation - intended to be eaten cooked - at retail - domestic production - Monitoring		Meat from bovine animals - meat preparation - intended to be eaten cooked - at retail - domestic production - Monitoring	
Isolates out of a monitoring program (yes/no)		yes		yes	
Number of isolates available in the laboratory		2		1	
Antimicrobials:		N	n	N	n
Aminoglycosides	Gentamicin	2	0	1	0
	Kanamycin	2	0	1	0
	Streptomycin	2	0	1	0
Amphenicols	Chloramphenicol	2	0	1	0
	Florfenicol	2	0	1	0
Cephalosporins	Cefotaxim	2	0	1	0
	Ceftazidim	2	0	1	0
Fluoroquinolones	Ciprofloxacin	2	0	1	0
Penicillins	Ampicillin	2	0	1	0
Polymyxins	Colistin	2	0	1	0
Quinolones	Nalidixic acid	2	0	1	0
Sulfonamides	Sulfamethoxazol	2	0	1	0
Tetracyclines	Tetracyclin	2	0	1	0
Trimethoprim	Trimethoprim	2	0	1	0

Footnote:

S. Derby - Fully sensitive 3x. Note: Meat preparation made from meat from bovine animals originated from the same producer and the same day of production as one isolate from meat preparation made from meat from pig.

Table Antimicrobial susceptibility testing of S. Derby in meat preparation - Meat from pig - intended to be eaten cooked - at retail - domestic production - Monitoring - quantitative data [Dilution method]

S. Derby		Meat from pig - meat preparation - intended to be eaten cooked - at retail - domestic production - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	2	0						1	1														0.25	32
	Kanamycin	16	2	0										2											4	128
	Neomycin		0	0																						
	Streptomycin	32	2	0											2										2	128
Amphenicols	Chloramphenicol	16	2	0										2											2	64
	Florfenicol	16	2	0										2											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	2	0					2																0.06	4
	Ceftazidim	2	2	0							2														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	2	0		1	1																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	2	0								1	1												0.5	32
Polymyxins	Colistin	8	2	0											2										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	2	0										2											4	64
Sulfonamides	Sulfamethoxazol	256	2	0											1	1									8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	2	0								2													1	64
Trimethoprim	Trimethoprim	2	2	0							2														0.5	32

Table Antimicrobial susceptibility testing of S. Derby in meat preparation - Meat from pig - intended to be eaten cooked - at retail - domestic production - Monitoring - quantitative data [Dilution method]

S. Derby		Meat from pig - meat preparation - intended to be eaten cooked - at retail - domestic production - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 2x.

Table Antimicrobial susceptibility testing of S. Dublin in Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

S. Dublin		Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - Clinical investigations																								
Isolates out of a monitoring program (yes/no)		no																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0						1															0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0													1								2	128
Amphenicols	Chloramphenicol	16	1	1															1						2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0		1																			0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0								1													0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	1																			1		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	0								1													1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. Dublin in Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

S. Dublin		Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - Clinical investigations																							
Isolates out of a monitoring program (yes/no)		no																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

CSu resistance - 1x.

Table Antimicrobial susceptibility testing of S. Enteritidis in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

S. Enteritidis		Pigs - mixed herds - - faeces - Survey - EU baseline survey																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		6																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	6	0						6															0.25	32
	Kanamycin	16	6	0										6											4	128
	Neomycin		0	0																						
	Streptomycin	32	6	0											1	1	4								2	128
Amphenicols	Chloramphenicol	16	6	0									1	5											2	64
	Florfenicol	16	6	0									3	3											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	6	0				4	2																0.06	4
	Ceftazidim	2	6	0						5	1														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	6	0			6																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	6	0								4	2												0.5	32
Polymyxins	Colistin	8	6	0											6										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	6	0										6											4	64
Sulfonamides	Sulfamethoxazol	256	6	0											1	1	4								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	6	0								6													1	64
Trimethoprim	Trimethoprim	2	6	0						6															0.5	32

Table Antimicrobial susceptibility testing of S. Enteritidis in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

S. Enteritidis		Pigs - mixed herds - - faeces - Survey - EU baseline survey																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		6																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 6x.

Table Antimicrobial susceptibility testing of S. Enteritidis in broilers - Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Gallus gallus (fowl) - broilers - unspecified - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		40																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	40	0						31	9														0.25	32
	Kanamycin	16	40	0										40											4	128
	Neomycin		0	0																						
	Streptomycin	32	40	0									16	24											2	128
Amphenicols	Chloramphenicol	16	40	0									2	38											2	64
	Florfenicol	16	40	0									7	33											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	40	0				18	22																0.06	4
	Ceftazidim	2	40	0						35	5														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	40	2	1	7	30			2															0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	40	1								8	31				1								0.5	32
Polymyxins	Colistin	8	40	0											40										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	40	2										38					2						4	64
Sulfonamides	Sulfamethoxazol	256	40	0											1	18	20	1							8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	40	0								40													1	64
Trimethoprim	Trimethoprim	2	40	0							40														0.5	32

Table Antimicrobial susceptibility testing of S. Enteritidis in broilers - Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Gallus gallus (fowl) - broilers - unspecified - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		40																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 37x, A resistance - 1x, NxCip resistance - 2x.

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		24																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	24	0						21	3														0.25	32
	Kanamycin	16	24	0										24											4	128
	Neomycin		0	0																						
	Streptomycin	32	24	0									21	2	1										2	128
Amphenicols	Chloramphenicol	16	24	0									1	23											2	64
	Florfenicol	16	24	0									8	16											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	24	0				13	11																0.06	4
	Ceftazidim	2	24	0						24															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	24	1	2	4	17			1															0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	24	0								11	13												0.5	32
Polymyxins	Colistin	8	24	0											24										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	24	1										23					1						4	64
Sulfonamides	Sulfamethoxazol	256	24	1												5	16	2					1		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	24	0								24													1	64
Trimethoprim	Trimethoprim	2	24	1							23							1							0.5	32

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		24																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 22x, NxCip resistance - 1x, SuW resistance - 1x.

Table Antimicrobial susceptibility testing of S. Enteritidis in broilers - Gallus gallus (fowl) - sampling in the framework of the broiler baseline study - at slaughterhouse - animal sample - neck skin - Survey - EU baseline survey - quantitative data [Dilution method]

S. Enteritidis		Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study - - neck skin - Survey - EU baseline survey																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		27																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	27	0						25	2														0.25	32
	Kanamycin	16	27	0										27											4	128
	Neomycin		0	0																						
	Streptomycin	32	27	0									22	5											2	128
Amphenicols	Chloramphenicol	16	27	0									5	22											2	64
	Florfenicol	16	27	0									14	13											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	27	0				6	20	1															0.06	4
	Ceftazidim	2	27	0						24	3														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	27	2		17	8		1		1														0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	27	0								4	22	1											0.5	32
Polymyxins	Colistin	8	27	0											27										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	27	2										25					2						4	64
Sulfonamides	Sulfamethoxazol	256	27	0												25	2								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	27	0								27													1	64
Trimethoprim	Trimethoprim	2	27	0							27														0.5	32

Table Antimicrobial susceptibility testing of S. Enteritidis in broilers - Gallus gallus (fowl) - sampling in the framework of the broiler baseline study - at slaughterhouse - animal sample - neck skin - Survey - EU baseline survey - quantitative data [Dilution method]

Footnote:

Fully sensitive - 25x, NxCip resistance - 2x.

Table Antimicrobial susceptibility testing of S.Enteritidis in animals

S. Enteritidis		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers		Gallus gallus (fowl) - broilers - Survey - EU baseline survey		Pigs - Survey - EU baseline survey		Emus - farmed	
Isolates out of a monitoring program (yes/no)										yes		yes		yes		yes		yes	
Number of isolates available in the laboratory										24		40		27		6		1	
Antimicrobials:		N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Aminoglycosides	Gentamicin									24	0	40	0	27	0	6	0	1	0
	Kanamycin									24	0	40	0	27	0	6	0	1	0
	Streptomycin									24	0	40	0	27	0	6	0	1	0
Amphenicols	Chloramphenicol									24	0	40	0	27	0	6	0	1	0
	Florfenicol									24	0	40	0	27	0	6	0	1	0
Cephalosporins	Cefotaxim									24	0	40	0	27	0	6	0	1	0
	Ceftazidim									24	0	40	0	27	0	6	0	1	0
Fluoroquinolones	Ciprofloxacin									24	1	40	2	27	2	6	0	1	0
Fully sensitive	Fully sensitive									24	22	40	37	27	25	6	6	1	1
Penicillins	Ampicillin									24	0	40	1	27	0	6	0	1	0
Polymyxins	Colistin									24	0	40	0	27	0	6	0	1	0
Quinolones	Nalidixic acid									24	1	40	2	27	2	6	0	1	0
Resistant to 1 antimicrobial	Resistant to 1 antimicrobial									24	0	40	1	27	0	6	0	1	0
Resistant to 2 antimicrobials	Resistant to 2 antimicrobials									24	2	40	2	27	2	6	0	1	0
Resistant to 3 antimicrobials	Resistant to 3 antimicrobials									24	0	40	0	27	0	6	0	1	0
Resistant to 4 antimicrobials	Resistant to 4 antimicrobials									24	0	40	0	27	0	6	0	1	0
Resistant to >4 antimicrobials	Resistant to >4 antimicrobials									24	0	40	0	27	0	6	0	1	0
Sulfonamides	Sulfamethoxazol									24	1	40	0	27	0	6	0	1	0
Tetracyclines	Tetracyclin									24	0	40	0	27	0	6	0	1	0

Table Antimicrobial susceptibility testing of S.Enteritidis in animals

S. Enteritidis		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers		Gallus gallus (fowl) - broilers - Survey - EU baseline survey		Pigs - Survey - EU baseline survey		Emus - farmed	
Isolates out of a monitoring program (yes/no)										yes		yes		yes		yes		yes	
Number of isolates available in the laboratory										24		40		27		6		1	
Antimicrobials:		N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Trimethoprim	Trimethoprim									24	1	40	0	27	0	6	0	1	0

Table Antimicrobial susceptibility testing of S. Enteritidis in Emus - farmed - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Emus - farmed - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0						1															0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0										1											2	128
Amphenicols	Chloramphenicol	16	1	0										1											2	64
	Florfenicol	16	1	0										1											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0		1																			0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0									1												0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	0													1								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	0								1													1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. Enteritidis in Emus - farmed - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Emus - farmed - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 1x.

Table Antimicrobial susceptibility testing of S. Enteritidis in table eggs - Eggs - shell - in total - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Eggs - table eggs - shell - in total - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	2	0						2															0.25	32
	Kanamycin	16	2	0										2											4	128
	Neomycin		0	0																						
	Streptomycin	32	2	0									1		1										2	128
Amphenicols	Chloramphenicol	16	2	0										2											2	64
	Florfenicol	16	2	0										2											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	2	0				1	1																0.06	4
	Ceftazidim	2	2	0						2															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	2	0			2																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	2	0									2												0.5	32
Polymyxins	Colistin	8	2	0											2										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	2	0										2											4	64
Sulfonamides	Sulfamethoxazol	256	2	1													1						1		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	2	0								2													1	64
Trimethoprim	Trimethoprim	2	2	1							1							1							0.5	32

Table Antimicrobial susceptibility testing of S. Enteritidis in table eggs - Eggs - shell - in total - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Eggs - table eggs - shell - in total - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 1x, SuW resistance - 1x.

Table Antimicrobial susceptibility testing of S. Enteritidis in Other processed food products and prepared dishes - noodles - at processing plant - domestic production - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Other processed food products and prepared dishes - noodles - at processing plant - domestic production - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		2																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	2	0						2															0.25	32
	Kanamycin	16	2	0										2											4	128
	Neomycin		0	0																						
	Streptomycin	32	2	0									2												2	128
Amphenicols	Chloramphenicol	16	2	0										2											2	64
	Florfenicol	16	2	0										2											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	2	0				1	1																0.06	4
	Ceftazidim	2	2	0						2															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	2	0			2																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	2	0									2												0.5	32
Polymyxins	Colistin	8	2	0											2										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	2	0										2											4	64
Sulfonamides	Sulfamethoxazol	256	2	0												1	1								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	2	0								2													1	64
Trimethoprim	Trimethoprim	2	2	0							2														0.5	32

Table Antimicrobial susceptibility testing of S. Enteritidis in Other processed food products and prepared dishes - noodles - at processing plant - domestic production - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Other processed food products and prepared dishes - noodles - at processing plant - domestic production - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 2x.

Table Antimicrobial susceptibility testing of S. Enteritidis in meat preparation - Meat from broilers (Gallus gallus) - intended to be eaten cooked - at retail - domestic production - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - domestic production - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		6																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	6	0						6															0.25	32
	Kanamycin	16	6	0										6											4	128
	Neomycin		0	0																						
	Streptomycin	32	6	0									6												2	128
Amphenicols	Chloramphenicol	16	6	0										6											2	64
	Florfenicol	16	6	0										6											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	6	0					6																0.06	4
	Ceftazidim	2	6	0						5	1														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	6	1		1	4			1															0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	6	0									6												0.5	32
Polymyxins	Colistin	8	6	0											6										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	6	1										5					1						4	64
Sulfonamides	Sulfamethoxazol	256	6	0												2	4								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	6	0								6													1	64
Trimethoprim	Trimethoprim	2	6	0							6														0.5	32

Table Antimicrobial susceptibility testing of S. Enteritidis in meat preparation - Meat from broilers (Gallus gallus) - intended to be eaten cooked - at retail - domestic production - Monitoring - quantitative data [Dilution method]

S. Enteritidis		Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - domestic production - Monitoring																						
Isolates out of a monitoring program (yes/no)		yes																						
Number of isolates available in the laboratory		6																						
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																				

Footnote:

Fully sensitive - 5x, NxCip resistance - 1x.

Table Antimicrobial susceptibility testing of S. Enteritidis - qualitative data

S. Enteritidis		Compound feedingstuffs for cattle		Compound feedingstuffs for pigs		Compound feedingstuffs for poultry (non specified)		Feed material of land animal origin - poultry offal meal - at slaughterhouse - Monitoring - official sampling	
Isolates out of a monitoring program (yes/no)								yes	
Number of isolates available in the laboratory								2	
Antimicrobials:		N	n	N	n	N	n	N	n
Aminoglycosides	Gentamicin							2	0
	Kanamycin							2	0
	Streptomycin							2	0
Amphenicols	Chloramphenicol							2	0
	Florfenicol							2	0
Cephalosporins	Cefotaxim							2	0
	Ceftazidim							2	0
Fluoroquinolones	Ciprofloxacin							2	0
Penicillins	Ampicillin							2	0
Polymyxins	Colistin							2	0
Quinolones	Nalidixic acid							2	0
Sulfonamides	Sulfamethoxazol							2	0
Tetracyclines	Tetracyclin							2	0
Trimethoprim	Trimethoprim							2	0

Table Antimicrobial susceptibility testing of S. Hadar in parent breeding flocks - Ducks - hatching eggs - at farm - animal sample - eggs - Monitoring - quantitative data [Dilution method]

S. Hadar		Ducks - parent breeding flocks - hatching eggs - - eggs - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0						1															0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0													1								2	128
Amphenicols	Chloramphenicol	16	1	0										1											2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0		1																			0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0								1													0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	0												1									8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	1															1						1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. Hadar in parent breeding flocks - Ducks - hatching eggs - at farm - animal sample - eggs - Monitoring - quantitative data [Dilution method]

S. Hadar		Ducks - parent breeding flocks - hatching eggs - - eggs - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

T resistance - 1x.

Table Antimicrobial susceptibility testing of S. Hadar in broilers - Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Hadar		Gallus gallus (fowl) - broilers - unspecified - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0						1															0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0													1								2	128
Amphenicols	Chloramphenicol	16	1	0										1											2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0					1																0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0			1																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0									1												0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	0												1									8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	1															1						1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. Hadar in broilers - Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Hadar		Gallus gallus (fowl) - broilers - unspecified - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

T resistance - 1x.

Table Antimicrobial susceptibility testing of S. Hadar - qualitative data

S. Hadar		Gallus gallus (fowl) - broilers		Ducks	
Isolates out of a monitoring program (yes/no)		yes		yes	
Number of isolates available in the laboratory		1		1	
Antimicrobials:		N	n	N	n
Aminoglycosides	Gentamicin	1	0	1	0
	Kanamycin	1	0	1	0
	Streptomycin	1	0	1	0
Amphenicols	Chloramphenicol	1	0	1	0
	Florfenicol	1	0	1	0
Cephalosporins	Cefotaxim	1	0	1	0
	Ceftazidim	1	0	1	0
Fluoroquinolones	Ciprofloxacin	1	0	1	0
Penicillins	Ampicillin	1	0	1	0
Polymyxins	Colistin	1	0	1	0
Quinolones	Nalidixic acid	1	0	1	0
Sulfonamides	Sulfamethoxazol	1	0	1	0
Tetracyclines	Tetracyclin	1	1	1	1
Trimethoprim	Trimethoprim	1	0	1	0

Footnote:

Gallus gallus (fowl) - broilers: T resistance - 1x; Ducks: T resistance - 1x.

Table Antimicrobial susceptibility testing of S. Havana in Geese - parent breeding flocks - at farm - animal sample - faeces - Monitoring - quantitative data [Dilution method]

S. Havana		Geese - parent breeding flocks - - faeces - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0							1														0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0										1											2	128
Amphenicols	Chloramphenicol	16	1	0										1											2	64
	Florfenicol	16	1	0										1											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0					1																0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0			1																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0								1													0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	0												1									8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	0								1													1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. Havana in Geese - parent breeding flocks - at farm - animal sample - faeces - Monitoring - quantitative data [Dilution method]

S. Havana		Geese - parent breeding flocks - - faeces - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 1x.

Table Antimicrobial susceptibility testing of S. Indiana in parent breeding flocks - Ducks - hatching eggs - at farm - animal sample - eggs - Monitoring - quantitative data [Dilution method]

S. Indiana		Ducks - parent breeding flocks - hatching eggs - - eggs - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0						1															0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0											1										2	128
Amphenicols	Chloramphenicol	16	1	0										1											2	64
	Florfenicol	16	1	0										1											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0					1																0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0				1																	0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0							1														0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0											1										4	64
Sulfonamides	Sulfamethoxazol	256	1	1																			1		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	0								1													1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. Indiana in parent breeding flocks - Ducks - hatching eggs - at farm - animal sample - eggs - Monitoring - quantitative data [Dilution method]

S. Indiana		Ducks - parent breeding flocks - hatching eggs - - eggs - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Su resistance - 1x.

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Infantis		Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		3																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	3	0							3														0.25	32
	Kanamycin	16	3	0										3											4	128
	Neomycin		0	0																						
	Streptomycin	32	3	1												2		1							2	128
Amphenicols	Chloramphenicol	16	3	0										3											2	64
	Florfenicol	16	3	0										3											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	3	0					1	2															0.06	4
	Ceftazidim	2	3	0							2	1													0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	3	3							2	1													0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	3	0									1	2											0.5	32
Polymyxins	Colistin	8	3	0											3										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	3	3															3						4	64
Sulfonamides	Sulfamethoxazol	256	3	3																			3		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	3	3															3						1	64
Trimethoprim	Trimethoprim	2	3	0							3														0.5	32

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Infantis		Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		3																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

SuTNxCip resistance - 2x, SSuTNxCip resistance - 1x.

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Infantis		Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		2																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	2	0						2															0.25	32
	Kanamycin	16	2	0										2											4	128
	Neomycin		0	0																						
	Streptomycin	32	2	0										1	1										2	128
Amphenicols	Chloramphenicol	16	2	0										2											2	64
	Florfenicol	16	2	0										2											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	2	0					2																0.06	4
	Ceftazidim	2	2	0							2														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	2	0			2																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	2	0								1	1												0.5	32
Polymyxins	Colistin	8	2	0											2										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	2	0										2											4	64
Sulfonamides	Sulfamethoxazol	256	2	0													2								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	2	0								2													1	64
Trimethoprim	Trimethoprim	2	2	0							2														0.5	32

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Infantis		Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 2x.

Table Antimicrobial susceptibility testing of S. Infantis in broilers - Gallus gallus (fowl) - sampling in the framework of the broiler baseline study - at slaughterhouse - animal sample - neck skin - Survey - EU baseline survey - quantitative data [Dilution method]

S. Infantis		Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study - - neck skin - Survey - EU baseline survey																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		15																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	15	0						15															0.25	32
	Kanamycin	16	15	0										15											4	128
	Neomycin		0	0																						
	Streptomycin	32	15	1										2	2	6	4	1							2	128
Amphenicols	Chloramphenicol	16	15	0										12	3										2	64
	Florfenicol	16	15	0									2	11	2										2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	15	0				2	11	2															0.06	4
	Ceftazidim	2	15	0						3	12														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	15	12		3					12														0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	15	0								3	11	1											0.5	32
Polymyxins	Colistin	8	15	0											15										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	15	12										3					12						4	64
Sulfonamides	Sulfamethoxazol	256	15	12												2	1						12		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	15	12								3							12						1	64
Trimethoprim	Trimethoprim	2	15	0							15														0.5	32

Table Antimicrobial susceptibility testing of S. Infantis in broilers - Gallus gallus (fowl) - sampling in the framework of the broiler baseline study - at slaughterhouse - animal sample - neck skin - Survey - EU baseline survey - quantitative data [Dilution method]

Footnote:

Fully sensitive - 3x, SuTNxCip resistance - 11x, SSuTNxCip resistance - 1x.

Table Antimicrobial susceptibility testing of S. Infantis in meat preparation - Meat from broilers (Gallus gallus) - intended to be eaten cooked - at retail - domestic production - Monitoring - quantitative data [Dilution method]

S. Infantis		Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - domestic production - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0						1														0.25	32
	Kanamycin	16	1	0										1										4	128
	Neomycin		0	0																					
	Streptomycin	32	1	0												1								2	128
Amphenicols	Chloramphenicol	16	1	0										1										2	64
	Florfenicol	16	1	0										1										2	64
Cephalosporins	3rd generation cephalosporins		0	0																					
	Cefotaxim	0.5	1	0					1															0.06	4
	Ceftazidim	2	1	0							1													0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	1							1													0.008	8
	Enrofloxacin		0	0																					
Penicillins	Ampicillin	4	1	0									1											0.5	32
Polymyxins	Colistin	8	1	0											1									8	16
	Polymyxins		0	0																					
Quinolones	Nalidixic acid	16	1	1															1					4	64
Sulfonamides	Sulfamethoxazol	256	1	1																		1		8	1024
Tetracyclines	Tetracyclin	8	1	1															1					1	64
Trimethoprim	Trimethoprim	2	1	0							1													0.5	32
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Table Antimicrobial susceptibility testing of S. Infantis in meat preparation - Meat from broilers (Gallus gallus) - intended to be eaten cooked - at retail - domestic production - Monitoring - quantitative data [Dilution method]

Footnote:

SuTNxCip resistance - 1x.

Table Antimicrobial susceptibility testing of S. Kottbus in Ducks - parent breeding flocks - at farm - animal sample - faeces - Monitoring - quantitative data [Dilution method]

S. Kottbus		Ducks - parent breeding flocks - - faeces - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0							1														0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0											1										2	128
Amphenicols	Chloramphenicol	16	1	0									1												2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0		1																			0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	1														1							0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	0												1									8	1024
Tetracyclines	Tetracyclin	8	1	0								1													1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																						

Table Antimicrobial susceptibility testing of S. Kottbus in Ducks - parent breeding flocks - at farm - animal sample - faeces - Monitoring - quantitative data [Dilution method]

Footnote:

A resistance - 1x.

Table Antimicrobial susceptibility testing of S. Lille in broilers - Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Lille		Gallus gallus (fowl) - broilers - unspecified - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	2	0						2														0.25	32
	Kanamycin	16	2	0										2										4	128
	Neomycin		0	0																					
	Streptomycin	32	2	0										1		1								2	128
Amphenicols	Chloramphenicol	16	2	0										2										2	64
	Florfenicol	16	2	0										2										2	64
Cephalosporins	3rd generation cephalosporins		0	0																					
	Cefotaxim	0.5	2	0					2															0.06	4
	Ceftazidim	2	2	0							2													0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	2	1		1					1													0.008	8
	Enrofloxacin		0	0																					
Penicillins	Ampicillin	4	2	0								1	1											0.5	32
Polymyxins	Colistin	8	2	0											2									8	16
	Polymyxins		0	0																					
Quinolones	Nalidixic acid	16	2	1										1					1					4	64
Sulfonamides	Sulfamethoxazol	256	2	1													1						1	8	1024
	Sulfonamide		0	0																					
Tetracyclines	Tetracyclin	8	2	1								1							1					1	64
Trimethoprim	Trimethoprim	2	2	0							2													0.5	32

Table Antimicrobial susceptibility testing of S. Lille in broilers - Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Lille		Gallus gallus (fowl) - broilers - unspecified - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 1x, SuTNxCip resistance - 1x.

Table Antimicrobial susceptibility testing of S. Newport in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

S. Newport		Pigs - mixed herds - - faeces - Survey - EU baseline survey																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0						1															0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0											1										2	128
Amphenicols	Chloramphenicol	16	1	0										1											2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0			1																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	1														1							0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	0												1									8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	1															1						1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. Newport in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

S. Newport		Pigs - mixed herds - - faeces - Survey - EU baseline survey																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

AT resistance - 1x.

Table Antimicrobial susceptibility testing of S. Rissen in Dogs - pet animals - Clinical investigations - quantitative data [Dilution method]

S. Rissen		Dogs - pet animals - Clinical investigations																								
Isolates out of a monitoring program (yes/no)		no																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0							1														0.25	32
	Kanamycin	16	1	1																1					4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0												1									2	128
Amphenicols	Chloramphenicol	16	1	1															1						2	64
	Florfenicol	16	1	0												1									2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0					1																0.06	4
	Ceftazidim	2	1	0							1														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0		1																			0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0								1													0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	1																			1		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	1															1						1	64
Trimethoprim	Trimethoprim	2	1	1														1							0.5	32

Table Antimicrobial susceptibility testing of S. Rissen in Dogs - pet animals - Clinical investigations - quantitative data [Dilution method]

S. Rissen		Dogs - pet animals - Clinical investigations																							
Isolates out of a monitoring program (yes/no)		no																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

We enclosed in database one serovar isolated from dogs only - rare serovar with unusual antimicrobial resistence pattern (CSuTKW).

Table Antimicrobial susceptibility testing of S. Saintpaul in Turkeys - unspecified - at farm - Monitoring - quantitative data [Dilution method]

S. Saintpaul		Turkeys - unspecified - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		9																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	9	0						9															0.25	32
	Kanamycin	16	9	0										9											4	128
	Neomycin		0	0																						
	Streptomycin	32	9	1										2		6			1						2	128
Amphenicols	Chloramphenicol	16	9	0										6	3										2	64
	Florfenicol	16	9	0									1	5	3										2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	9	0				3	3	2	1														0.06	4
	Ceftazidim	2	9	0						3	6														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	9	5		1	3			2	1	2													0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	9	5								1	1	2				5							0.5	32
Polymyxins	Colistin	8	9	0											9										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	9	5										4					5						4	64
Sulfonamides	Sulfamethoxazol	256	9	8												1							8		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	9	7								2							7						1	64
Trimethoprim	Trimethoprim	2	9	4							5							4							0.5	32

Table Antimicrobial susceptibility testing of S. Saintpaul in Turkeys - unspecified - at farm - Monitoring - quantitative data [Dilution method]

S. Saintpaul		Turkeys - unspecified - at farm - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		9																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

NxCip resistance - 1x; ASSuT resistance - 1x; ASuTW resistance - 3x; SuTNxCip resistance - 3x; ASuNxCipW resistance - 1x.

Table Antimicrobial susceptibility testing of S.Typhimurium in animals

S. Typhimurium		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers		Pigs - Survey - EU baseline survey	
Isolates out of a monitoring program (yes/no)				no				yes		yes		yes		yes	
Number of isolates available in the laboratory		5		5				2		1		1		5	
Antimicrobials:		N	n	N	n	N	n	N	n	N	n	N	n	N	n
Aminoglycosides	Gentamicin	5	0	5	0			2	0	1	0	1	0	5	0
	Kanamycin	5	0	5	1			2	0	1	0	1	0	5	0
	Streptomycin	5	3	5	0			2	1	1	0	1	0	5	3
Amphenicols	Chloramphenicol	5	2	5	1			2	1	1	0	1	0	5	3
	Florfenicol	5	2	5	1			2	1	1	0	1	0	5	3
Cephalosporins	Cefotaxim	5	0	5	0			2	0	1	0	1	0	5	0
	Ceftazidim	5	0	5	0			2	0	1	0	1	0	5	0
Fluoroquinolones	Ciprofloxacin	5	0	5	0			2	0	1	0	1	0	5	1
Fully sensitive	Fully sensitive	5	1	5	0			2	1	1	1	1	1	5	1
Number of multiresistant S. Typhimurium	resistant to other antimicrobials	5	2	5	1			2	1	1	0	1	0	5	1
	with penta resistance	5	2	5	1			2	1	1	0	1	0	5	3
Penicillins	Ampicillin	5	3	5	4			2	1	1	0	1	0	5	4
Polymyxins	Colistin	5	0	5	0			2	0	1	0	1	0	5	0
Quinolones	Nalidixic acid	5	0	5	0			2	0	1	0	1	0	5	1
Resistant to 1 antimicrobial	Resistant to 1 antimicrobial	5	1	5	2			2	0	1	0	1	0	5	1
Resistant to 2 antimicrobials	Resistant to 2 antimicrobials	5	0	5	1			2	0	1	0	1	0	5	0
Resistant to 3 antimicrobials	Resistant to 3 antimicrobials	5	0	5	1			2	0	1	0	1	0	5	0
Resistant to 4 antimicrobials	Resistant to 4 antimicrobials	5	1	5	1			2	0	1	0	1	0	5	0
Resistant to >4 antimicrobials	Resistant to >4 antimicrobials	5	2	5	1			2	1	1	0	1	0	5	3
Sulfonamides	Sulfamethoxazol	5	3	5	1			2	1	1	0	1	0	5	3

Table Antimicrobial susceptibility testing of S.Typhimurium in animals

S. Typhimurium		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers		Pigs - Survey - EU baseline survey	
Isolates out of a monitoring program (yes/no)				no				yes		yes		yes		yes	
Number of isolates available in the laboratory		5		5				2		1		1		5	
Antimicrobials:		N	n	N	n	N	n	N	n	N	n	N	n	N	n
Tetracyclines	Tetracyclin	5	4	5	4			2	1	1	0	1	0	5	3
Trimethoprim	Trimethoprim	5	0	5	0			2	0	1	0	1	0	5	0

Footnote:

Cuttle: Fully sensitive – 1x, T resistance – 1x, ASSuT resistance – 1x, AC(S)SuTF resistance – 1x, ACSSuTF resistance – 1x;
Pigs: A resistance – 1x, T resistance – 1x, AT resistance – 1x, ATK resistance – 1x, AC(S)SuTF resistance – 1x;
Pigs – EU survey: Fully sensitive – 1x, A resistance – 1x, ACSSuTF resistance – 2x, ACSSuTNxCipF resistance – 1x;
Gallus gallus – laying hens: Fully sensitive – 1x;
Gallus gallus – broilers: Fully sensitive – 1x;
Turkeys: Fully sensitive – 1x, AC(S)SuTF resistance – 1x.
Note to streptomycin :(S) – isolates with MIC = 32 µg/mL (these isolates were resistant to florfenicol too).

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - laying hens - at farm - Monitoring - quantitative data [Dilution method]

S. Typhimurium		Gallus gallus (fowl) - laying hens - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0						1															0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0											1										2	128
Amphenicols	Chloramphenicol	16	1	0										1											2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0		1																			0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0							1														0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	0												1									8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	0								1													1	64
Trimethoprim	Trimethoprim	2	1	0						1															0.5	32

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - laying hens - at farm - Monitoring - quantitative data [Dilution method]

S. Typhimurium		Gallus gallus (fowl) - laying hens - at farm - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 1x.

Table Antimicrobial susceptibility testing of S. Typhimurium in Cattle (bovine animals) - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

S. Typhimurium		Cattle (bovine animals) - unspecified - at farm - animal sample - Clinical investigations																								
Isolates out of a monitoring program (yes/no)		no																								
Number of isolates available in the laboratory		5																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	5	0						3	2														0.25	32
	Kanamycin	16	5	0										5											4	128
	Neomycin		0	0																						
	Streptomycin	32	5	2										1	1		1	1	1						2	128
Amphenicols	Chloramphenicol	16	5	2										3					2						2	64
	Florfenicol	16	5	2									2	1			1		1						2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	5	0				4	1																0.06	4
	Ceftazidim	2	5	0						5															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	5	0		3	2																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	5	3									2					3							0.5	32
Polymyxins	Colistin	8	5	0											5										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	5	0										5											4	64
Sulfonamides	Sulfamethoxazol	256	5	3												2							3		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	5	4								1				1	1		2						1	64
Trimethoprim	Trimethoprim	2	5	0							5														0.5	32

Table Antimicrobial susceptibility testing of S. Typhimurium in Cattle (bovine animals) - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

S. Typhimurium		Cattle (bovine animals) - unspecified - at farm - animal sample - Clinical investigations																							
Isolates out of a monitoring program (yes/no)		no																							
Number of isolates available in the laboratory		5																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 1x, T resistance - 1x, ASSuT resistance - 1x, AC(S)SuTF resistance - 1x, ACSSuTF resistance - 1x. (Note: (S) - MIC = 32 µg/mL).

Table Antimicrobial susceptibility testing of S. Typhimurium in mixed herds - Pigs - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

S. Typhimurium		Pigs - mixed herds - unspecified - at farm - animal sample - Clinical investigations																								
Isolates out of a monitoring program (yes/no)		no																								
Number of isolates available in the laboratory		5																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	5	0						2	2	1													0.25	32
	Kanamycin	16	5	1										4						1					4	128
	Neomycin		0	0																						
	Streptomycin	32	5	0											2	2	1								2	128
Amphenicols	Chloramphenicol	16	5	1										4					1						2	64
	Florfenicol	16	5	1									1	3			1								2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	5	0				4	1																0.06	4
	Ceftazidim	2	5	0						5															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	5	0		2	3																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	5	4								1						4							0.5	32
Polymyxins	Colistin	8	5	0											5										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	5	0										5											4	64
Sulfonamides	Sulfamethoxazol	256	5	1												4							1		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	5	4								1					1		3						1	64
Trimethoprim	Trimethoprim	2	5	0							5														0.5	32

Table Antimicrobial susceptibility testing of S. Typhimurium in mixed herds - Pigs - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

S. Typhimurium		Pigs - mixed herds - unspecified - at farm - animal sample - Clinical investigations																							
Isolates out of a monitoring program (yes/no)		no																							
Number of isolates available in the laboratory		5																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

A resistance - 1x, T resistance - 1x, AT resistance - 1x, ATK resistance - 1x, AC(S)SuTF resistance - 1x (Note: (S) - MIC = 32 µg/mL).

Table Antimicrobial susceptibility testing of S. Typhimurium in Turkeys - mixed flocks/holdings - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Typhimurium		Turkeys - mixed flocks/holdings - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		2																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	2	0						1	1														0.25	32
	Kanamycin	16	2	0										2											4	128
	Neomycin		0	0																						
	Streptomycin	32	2	0											1		1								2	128
Amphenicols	Chloramphenicol	16	2	1										1					1						2	64
	Florfenicol	16	2	1									1				1								2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	2	0				2																	0.06	4
	Ceftazidim	2	2	0						2															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	2	0		2																			0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	2	1								1						1							0.5	32
Polymyxins	Colistin	8	2	0											2										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	2	0										2											4	64
Sulfonamides	Sulfamethoxazol	256	2	1												1							1		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	2	1								1					1								1	64
Trimethoprim	Trimethoprim	2	2	0							2														0.5	32

Table Antimicrobial susceptibility testing of S. Typhimurium in Turkeys - mixed flocks/holdings - at farm - animal sample - Monitoring - quantitative data [Dilution method]

S. Typhimurium		Turkeys - mixed flocks/holdings - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 1x, AC(S)SuTF resistance - 1x (Note: (S) - MIC = 32 µg/ml).

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - broilers - at farm - Monitoring - quantitative data [Dilution method]

S. Typhimurium		Gallus gallus (fowl) - broilers - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0						1															0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0										1											2	128
Amphenicols	Chloramphenicol	16	1	0										1											2	64
	Florfenicol	16	1	0										1											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0		1																			0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0								1													0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	0												1									8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	0								1													1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - broilers - at farm - Monitoring - quantitative data [Dilution method]

S. Typhimurium		Gallus gallus (fowl) - broilers - at farm - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 1x.

Table Antimicrobial susceptibility testing of S. Typhimurium in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

S. Typhimurium		Pigs - mixed herds - - faeces - Survey - EU baseline survey																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		5																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	5	0						4		1													0.25	32
	Kanamycin	16	5	0										5											4	128
	Neomycin		0	0																						
	Streptomycin	32	5	3											1	1		2		1					2	128
Amphenicols	Chloramphenicol	16	5	3									1	1					3						2	64
	Florfenicol	16	5	3									2				2		1						2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	5	0				5																	0.06	4
	Ceftazidim	2	5	0						5															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	5	1		2	2				1														0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	5	4							1							4							0.5	32
Polymyxins	Colistin	8	5	0											5										8	26
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	5	1										4					1						4	64
Sulfonamides	Sulfamethoxazol	256	5	3													2						3		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	5	3								2							3						1	64
Trimethoprim	Trimethoprim	2	5	0							5														0.5	32

Table Antimicrobial susceptibility testing of S. Typhimurium in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

S. Typhimurium		Pigs - mixed herds - - faeces - Survey - EU baseline survey																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		5																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive - 1x, A resistance - 1x, ACSSuTF - 2x, ACSSuTNxCipF - 1x.

Table Antimicrobial susceptibility testing of S. Typhimurium in meat preparation - Meat from pig - intended to be eaten cooked - in total - Monitoring - quantitative data [Dilution method]

S. Typhimurium		Meat from pig - meat preparation - intended to be eaten cooked - in total - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	2	0							2														0.25	32
	Kanamycin	16	2	0										2											4	128
	Neomycin		0	0																						
	Streptomycin	32	2	1											1				1						2	128
Amphenicols	Chloramphenicol	16	2	0										2											2	64
	Florfenicol	16	2	0									2												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	2	0				2																	0.06	4
	Ceftazidim	2	2	0						2															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	2	0			2																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	2	2														2							0.5	32
Polymyxins	Colistin	8	2	0											2										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	2	0										2											4	64
Sulfonamides	Sulfamethoxazol	256	2	1													1						1		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	2	1								1							1						1	64
Trimethoprim	Trimethoprim	2	2	0							2														0.5	32

Table Antimicrobial susceptibility testing of S. Typhimurium in meat preparation - Meat from pig - intended to be eaten cooked - in total - Monitoring - quantitative data [Dilution method]

S. Typhimurium		Meat from pig - meat preparation - intended to be eaten cooked - in total - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

A resistance - 1x, ASSuT resistance - 1x.

Table Antimicrobial susceptibility testing of S. Typhimurium - qualitative data

S. Typhimurium		Compound feedingstuffs for cattle		Compound feedingstuffs for pigs		Compound feedingstuffs for poultry (non specified)		Pet food - final product - at retail - imported - Monitoring - official sampling	
Isolates out of a monitoring program (yes/no)								yes	
Number of isolates available in the laboratory								1	
Antimicrobials:		N	n	N	n	N	n	N	n
Aminoglycosides	Gentamicin							1	0
	Kanamycin							1	0
	Streptomycin							1	1
Amphenicols	Chloramphenicol							1	1
	Florfenicol							1	1
Cephalosporins	Cefotaxim							1	0
	Ceftazidim							1	0
Fluoroquinolones	Ciprofloxacin							1	0
Penicillins	Ampicillin							1	1
Polymyxins	Colistin							1	0
Quinolones	Nalidixic acid							1	0
Sulfonamides	Sulfamethoxazol							1	1
Tetracyclines	Tetracyclin							1	1
Trimethoprim	Trimethoprim							1	0

Table Antimicrobial susceptibility testing of S. 4,12:i:- in Pigs - fattening pigs - at slaughterhouse - animal sample - Surveillance - quantitative data [Dilution method]

S. 4,12:i:-		Pigs - fattening pigs - at slaughterhouse - animal sample - Surveillance																								
Isolates out of a monitoring program (yes/no)		no																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0						1															0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	1																1					2	128
Amphenicols	Chloramphenicol	16	1	0										1											2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0		1																			0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	1														1							0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	1																			1		8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	1															1						1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. 4,12:i:- in Pigs - fattening pigs - at slaughterhouse - animal sample - Surveillance - quantitative data [Dilution method]

S. 4,12:i:-		Pigs - fattening pigs - at slaughterhouse - animal sample - Surveillance																							
Isolates out of a monitoring program (yes/no)		no																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

ASSuT resistance - 1x.

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Pigs - mixed herds - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

S. 6,7:-:1,5		Pigs - mixed herds - at farm - animal sample - Clinical investigations																								
Isolates out of a monitoring program (yes/no)		no																								
Number of isolates available in the laboratory		2																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	2	0							2														0.25	32
	Kanamycin	16	2	0										2											4	128
	Neomycin		0	0																						
	Streptomycin	32	2	0												2									2	128
Amphenicols	Chloramphenicol	16	2	0											2										2	64
	Florfenicol	16	2	0										1	1										2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	2	0							2														0.06	4
	Ceftazidim	2	2	0							1	1													0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	2	2					2																0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	2	1										1				1							0.5	32
Polymyxins	Colistin	8	2	0											2										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	2	0												2									4	64
Sulfonamides	Sulfamethoxazol	256	2	0											2										8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	2	0									2												1	64
Trimethoprim	Trimethoprim	2	0	0																					0.5	32

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Pigs - mixed herds - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

S. 6,7:-:1,5		Pigs - mixed herds - at farm - animal sample - Clinical investigations																							
Isolates out of a monitoring program (yes/no)		no																							
Number of isolates available in the laboratory		2																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Cip resistance - 1x, ACip resistance - 1x.

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

S. 6,7:-:1,5		Pigs - mixed herds - - faeces - Survey - EU baseline survey																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0							1														0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0												1									2	128
Amphenicols	Chloramphenicol	16	1	0									1												2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0					1																0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0			1																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0								1													0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	0												1									8	1024
Tetracyclines	Tetracyclin	8	1	0								1													1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																						

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

Footnote:

Fully sensitive - 1x.

Table Antimicrobial susceptibility testing of S. 6,8:e,h:- in parent breeding flocks - Ducks - hatching eggs - at farm - animal sample - eggs - Monitoring - quantitative data [Dilution method]

S. 6,8:e,h:-		Ducks - parent breeding flocks - hatching eggs - - eggs - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0							1														0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0										1											2	128
Amphenicols	Chloramphenicol	16	1	0									1												2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	1					1																0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0								1													0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	1															1						4	64
Sulfonamides	Sulfamethoxazol	256	1	0												1									8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	0								1													1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of S. 6,8:e,h:- in parent breeding flocks - Ducks - hatching eggs - at farm - animal sample - eggs - Monitoring - quantitative data [Dilution method]

S. 6,8:e,h:-		Ducks - parent breeding flocks - hatching eggs - - eggs - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

NxCip resistance - 1x.

Table Antimicrobial susceptibility testing of Salmonella in animals

Salmonella spp.		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers		Gallus gallus (fowl) - broilers - Survey - EU baseline survey		Pigs - Survey - EU baseline survey		Ducks		Geese		Emus - farmed	
Isolates out of a monitoring program (yes/no)		no		no				yes		yes		yes		yes		yes		yes		yes		yes	
Number of isolates available in the laboratory		7		12				11		37		63		91		32		8		1		1	
Antimicrobials:		N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Aminoglycosides	Gentamicin	7	0	12	0			11	0	37	0	63	0	91	0	32	0	8	0	1	0	1	0
	Kanamycin	7	0	12	1			11	0	37	0	63	0	91	0	32	0	8	1	1	0	1	0
	Streptomycin	7	2	12	1			11	1	37	0	63	1	91	1	32	3	8	0	1	0	1	0
Amphenicols	Chloramphenicol	7	3	12	1			11	0	37	0	63	0	91	0	32	3	8	0	1	0	1	0
	Florfenicol	7	2	12	0			11	0	37	0	63	0	91	0	32	3	8	0	1	0	1	0
Cephalosporins	Cefotaxim	7	0	12	0			11	0	37	0	63	0	91	0	32	0	8	0	1	0	1	0
	Ceftazidim	7	0	12	0			11	0	37	0	63	0	91	0	32	0	8	0	1	0	1	0
Fluoroquinolones	Ciprofloxacin	7	0	12	3			11	5	37	1	63	7	91	20	32	1	8	2	1	0	1	0
Fully sensitive	Fully sensitive	7	2	12	3			11	1	37	35	63	53	91	70	32	26	8	3	1	1	1	1
Penicillins	Ampicillin	7	3	12	6			11	5	37	0	63	1	91	1	32	6	8	1	1	0	1	0
Polymyxins	Colistin	7	0	12	0			11	0	37	0	63	0	91	0	32	0	8	0	1	0	1	0
Quinolones	Nalidixic acid	7	0	12	1			11	5	37	1	63	7	91	20	32	1	8	2	1	0	1	0
Resistant to 1 antimicrobial	Resistant to 1 antimicrobial	7	1	12	3			11	0	37	0	63	2	91	1	32	2	8	3	1	0	1	0
Resistant to 2 antimicrobials	Resistant to 2 antimicrobials	7	1	12	3			11	1	37	2	63	2	91	2	32	1	8	1	1	0	1	0
Resistant to 3 antimicrobials	Resistant to 3 antimicrobials	7	0	12	1			11	0	37	0	63	0	91	0	32	0	8	0	1	0	1	0
Resistant to 4 antimicrobials	Resistant to 4 antimicrobials	7	1	12	1			11	4	37	0	63	4	91	17	32	0	8	1	1	0	1	0
Resistant to >4 antimicrobials	Resistant to >4 antimicrobials	7	2	12	1			11	5	37	0	63	1	91	1	32	3	8	0	1	0	1	0
Sulfonamides	Sulfamethoxazol	7	4	12	2			11	8	37	1	63	5	91	18	32	3	8	1	1	0	1	0
Tetracyclines	Tetracyclin	7	4	12	5			11	7	37	0	63	5	91	18	32	4	8	2	1	0	1	0

Table Antimicrobial susceptibility testing of Salmonella in animals

Salmonella spp.		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers		Gallus gallus (fowl) - broilers - Survey - EU baseline survey		Pigs - Survey - EU baseline survey		Ducks		Geese		Emus - farmed	
Isolates out of a monitoring program (yes/no)		no		no				yes		yes		yes		yes		yes		yes		yes		yes	
Number of isolates available in the laboratory		7		12				11		37		63		91		32		8		1		1	
Antimicrobials:		N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Trimethoprim	Trimethoprim	7	0	12	0			11	4	37	1	63	0	91	0	32	0	8	0	1	0	1	0

Table Antimicrobial susceptibility testing of Salmonella spp. in food

Salmonella spp.		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Meat from other poultry species		Eggs - table eggs - shell		Other processed food products and prepared dishes - noodles		Spices and herbs - dried		Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk	
Isolates out of a monitoring program (yes/no)		yes		yes		yes				yes		yes		yes		yes	
Number of isolates available in the laboratory		1		9		11				2		2		1		1	
Antimicrobials:		N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Aminoglycosides	Gentamicin	1	0	9	0	11	0			2	0	2	0	1	0	1	0
	Kanamycin	1	0	9	1	11	0			2	0	2	0	1	0	1	0
	Streptomycin	1	0	9	1	11	0			2	0	2	0	1	0	1	0
Amphenicols	Chloramphenicol	1	0	9	0	11	0			2	0	2	0	1	0	1	0
	Florfenicol	1	0	9	0	11	0			2	0	2	0	1	0	1	0
Cephalosporins	Cefotaxim	1	0	9	0	11	0			2	0	2	0	1	0	1	0
	Ceftazidim	1	0	9	0	11	0			2	0	2	0	1	0	1	0
Fluoroquinolones	Ciprofloxacin	1	0	9	1	11	4			2	0	2	0	1	0	1	0
Fully sensitive	Fully sensitive	1	1	9	5	11	7			2	1	2	2	1	1	1	0
Penicillins	Ampicillin	1	0	9	2	11	0			2	0	2	0	1	0	1	0
Polymyxins	Colistin	1	0	9	0	11	0			2	0	2	0	1	0	1	0
Quinolones	Nalidixic acid	1	0	9	1	11	4			2	0	2	0	1	0	1	0
Resistant to 1 antimicrobial	Resistant to 1 antimicrobial	1	0	9	1	11	0			2	0	2	0	1	0	1	0
Resistant to 2 antimicrobials	Resistant to 2 antimicrobials	1	0	9	0	11	1			2	1	2	0	1	0	1	0
Resistant to 3 antimicrobials	Resistant to 3 antimicrobials	1	0	9	1	11	0			2	0	2	0	1	0	1	0
Resistant to 4 antimicrobials	Resistant to 4 antimicrobials	1	0	9	2	11	3			2	0	2	0	1	0	1	0
Resistant to >4 antimicrobials	Resistant to >4 antimicrobials	1	0	9	0	11	0			2	0	2	0	1	0	1	0
Sulfonamides	Sulfamethoxazol	1	0	9	3	11	3			2	1	2	0	1	0	1	0

Table Antimicrobial susceptibility testing of Salmonella spp. in food

Salmonella spp.		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Meat from other poultry species		Eggs - table eggs - shell		Other processed food products and prepared dishes - noodles		Spices and herbs - dried		Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk	
Isolates out of a monitoring program (yes/no)		yes		yes		yes				yes		yes		yes		yes	
Number of isolates available in the laboratory		1		9		11				2		2		1		1	
Antimicrobials:		N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Tetracyclines	Tetracyclin	1	0	9	3	11	3			2	0	2	0	1	0	1	0
Trimethoprim	Trimethoprim	1	0	9	0	11	0			2	1	2	0	1	0	1	0

Footnote:

Meat from bovine animals: 1x S. Derby - fully sensitive; Meat from pig: 1x S. Anatum - fully sensitive, 1x S. Brandenburg - fully sensitive, 2x S. Derby - fully sensitive, 1x S. Ohio - fully sensitive, 1x S. Bredeney - SuTK resistance, 1x S. Bareilly - SuTNxCip resistance, 2x S. Typhimurium - 1x A resistance, 1x ASSuT resistance; Meat from broilers (Gallus gallus): 1x S. Indiana - fully sensitive, 1x S. Kentucky - fully sensitive, 6x S. Enteritidis - 5x fully sensitive, 1x NxCip resistance, 2x S. Bareilly - SuTNxCip resistance, 1x S. Infantis - SuTNxCip resistance; Eggs - table eggs - shell: 2x S. Enteritidis - 1x fully sensitive, 1x SuW resistance; Other processed food products - noodles: 2x S. Enteritidis - fully sensitive; Cheese made from sheep s milk - soft and semi-soft - made from raw or low heat-treated milk: 1x S. Kentucky - fully sensitive; Spices - dried: 1x S. Bredeney - fully sensitive.

Table Antimicrobial susceptibility testing of Salmonella spp. - qualitative data

Salmonella spp.		Compund feedingstuffs for poultry - broilers		Compound feedingstuffs for cattle		Feed material of cereal grain origin - barley derived		Feed material of land animal origin - meat and bone meal		Feed material of marine animal origin - fish meal		Feed material of land animal origin - poultry offal meal		Pet food - final product	
Isolates out of a monitoring program (yes/no)		yes		yes		no		yes		yes		yes		yes	
Number of isolates available in the laboratory		3		2		1		5		1		7		2	
Antimicrobials:		N	n	N	n	N	n	N	n	N	n	N	n	N	n
Aminoglycosides	Gentamicin	3	0	2	0	1	0	5	0	1	0	7	0	2	0
	Kanamycin	3	0	2	0	1	0	5	0	1	0	7	0	2	0
	Streptomycin	3	0	2	0	1	0	5	0	1	0	7	0	2	2
Amphenicols	Chloramphenicol	3	0	2	0	1	0	5	0	1	0	7	0	2	1
	Florfenicol	3	0	2	0	1	0	5	0	1	0	7	0	2	1
Cephalosporins	Cefotaxim	3	0	2	0	1	0	5	0	1	0	7	0	2	0
	Ceftazidim	3	0	2	0	1	0	5	0	1	0	7	0	2	0
Fluoroquinolones	Ciprofloxacin	3	0	2	0	1	0	5	0	1	0	7	0	2	0
Penicillins	Ampicillin	3	0	2	0	1	0	5	0	1	0	7	0	2	2
Polymyxins	Colistin	3	0	2	0	1	0	5	0	1	0	7	0	2	0
Quinolones	Nalidixic acid	3	0	2	0	1	0	5	0	1	0	7	0	2	0
Sulfonamides	Sulfamethoxazol	3	0	2	0	1	0	5	0	1	0	7	0	2	2
Tetracyclines	Tetracyclin	3	0	2	0	1	0	5	0	1	0	7	0	2	2
Trimethoprim	Trimethoprim	3	0	2	0	1	0	5	0	1	0	7	0	2	0

Footnote:

Compound feedingstuuffs for poultry - broilers: FS (fully sensitive) - 3x S. Havana; Compound feedingstuffs for cattle: FS - 1x S. Agona, 1x S. Senftenberg; Feed material of cereal grain origin - barley derived: FS - 1x S. enterica subsp. enterica; Feed material of land origin - meat and bone meal: FS - 1x S. Livingstone, 1x S. London, 1x S. Montevideo, 1x S. Putten, 1x S. Senftenberg;

Enteritidis, 1x S. Infantis, 1x S. Kentucky, 2x S. Montevideo, 1x S. Tennessee; Pet food - final product - imported production: 1x ASSuT resistance - S. 4,12,27:i:-, 1x ACSSuTF resistance - S. Typhimurium.

Table Antimicrobial susceptibility testing of Other serotypes in broilers - Gallus gallus (fowl) - sampling in the framework of the broiler baseline study - at slaughterhouse - animal sample - neck skin - Survey - EU baseline survey - quantitative data [Dilution method]

Other serotypes		Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study - - neck skin - Survey - EU baseline survey																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		43																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	43	0						28	14	1												0.25	32
	Kanamycin	16	43	0										43										4	128
	Neomycin		0	0																					
	Streptomycin	32	43	0									3	11	28	1								2	128
Amphenicols	Chloramphenicol	16	43	0										43										2	64
	Florfenicol	16	43	0									21	22										2	64
Cephalosporins	3rd generation cephalosporins		0	0																					
	Cefotaxim	0.5	43	0				16	27															0.06	4
	Ceftazidim	2	43	0						16	27													0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	43	0		17	26																	0.008	8
	Enrofloxacin		0	0																					
Penicillins	Ampicillin	4	43	1							14	25	3					1						0.5	32
Polymyxins	Colistin	8	43	0											43									8	16
	Polymyxins		0	0																					
Quinolones	Nalidixic acid	16	43	0										43										4	64
Sulfonamides	Sulfamethoxazol	256	43	0											9	10	24							8	1024
	Sulfonamide		0	0																					
Tetracyclines	Tetracyclin	8	43	0								43												1	64
Trimethoprim	Trimethoprim	2	43	0							43													0.5	32

Table Antimicrobial susceptibility testing of Other serotypes in broilers - Gallus gallus (fowl) - sampling in the framework of the broiler baseline study - at slaughterhouse - animal sample - neck skin - Survey - EU baseline survey - quantitative data [Dilution method]

Other serotypes		Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study - - neck skin - Survey - EU baseline survey																						
Isolates out of a monitoring program (yes/no)		yes																						
Number of isolates available in the laboratory		43																						
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																				

Footnote:

Fully sensitive: S. Agona - 7x, S. Havana - 2x, S. Indiana - 14x, S. Kentucky - 14x, S. Mbandaka - 1x, S. Schwarzengrund - 1x, S. Tennessee - 3; A resistance: S. Havana - 1x.

Table Antimicrobial susceptibility testing of Other serotypes in broilers - Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - quantitative data [Dilution method]

Other serotypes		Gallus gallus (fowl) - broilers - unspecified - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		14																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	14	0						5	9														0.25	32
	Kanamycin	16	14	0										14											4	128
	Neomycin		0	0																						
	Streptomycin	32	14	0										4	7	3									2	128
Amphenicols	Chloramphenicol	16	14	0										14											2	64
	Florfenicol	16	14	0									2	12											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	14	0				4	10																0.06	4
	Ceftazidim	2	14	0						7	7														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	14	0		7	7																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	14	0								14													0.5	32
Polymyxins	Colistin	8	14	0											14										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	14	0										14											4	64
Sulfonamides	Sulfamethoxazol	256	14	0												6	8								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	14	0								11	3												1	64
Trimethoprim	Trimethoprim	2	14	0							14														0.5	32

Table Antimicrobial susceptibility testing of Other serotypes in broilers - Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - quantitative data [Dilution method]

Other serotypes		Gallus gallus (fowl) - broilers - unspecified - at farm - animal sample - Monitoring																						
Isolates out of a monitoring program (yes/no)		yes																						
Number of isolates available in the laboratory		14																						
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																				

Footnote:

Fully sensitive - 14x.

Table Antimicrobial susceptibility testing of Other serotypes in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

Other serotypes		Pigs - mixed herds - - faeces - Survey - EU baseline survey																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		12																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	12	0						10	2														0.25	32
	Kanamycin	16	12	0										12											4	128
	Neomycin		0	0																						
	Streptomycin	32	12	0										5	7										2	128
Amphenicols	Chloramphenicol	16	12	0									2	10											2	64
	Florfenicol	16	12	0									6	6											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	12	0				2	10																0.06	4
	Ceftazidim	2	12	0						5	7														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	12	0	1	7	4																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	12	0								9	3												0.5	32
Polymyxins	Colistin	8	12	0											12										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	12	0										12											4	64
Sulfonamides	Sulfamethoxazol	256	12	0												6	6								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	12	0								8	4												1	64
Trimethoprim	Trimethoprim	2	12	0							12														0.5	32

Table Antimicrobial susceptibility testing of Other serotypes in Pigs - mixed herds - at farm - animal sample - faeces - Survey - EU baseline survey - quantitative data [Dilution method]

Other serotypes		Pigs - mixed herds - - faeces - Survey - EU baseline survey																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		12																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive: S. Agona - 3x, S. Bovismorbificans - 3x, S. Bredeney - 2x, S. Goldcoast - 1x, S. London - 1x, S. Ohio - 1x, S. Worthington - 1x.

Table Antimicrobial susceptibility testing of Other serotypes in Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

Other serotypes		Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - Clinical investigations																								
Isolates out of a monitoring program (yes/no)		no																								
Number of isolates available in the laboratory		1																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	1	0							1														0.25	32
	Kanamycin	16	1	0										1											4	128
	Neomycin		0	0																						
	Streptomycin	32	1	0											1										2	128
Amphenicols	Chloramphenicol	16	1	0									1												2	64
	Florfenicol	16	1	0									1												2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	1	0				1																	0.06	4
	Ceftazidim	2	1	0						1															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	1	0		1																			0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	1	0								1													0.5	32
Polymyxins	Colistin	8	1	0											1										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	1	0										1											4	64
Sulfonamides	Sulfamethoxazol	256	1	0													1								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	1	0								1													1	64
Trimethoprim	Trimethoprim	2	1	0							1														0.5	32

Table Antimicrobial susceptibility testing of Other serotypes in Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

Other serotypes		Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - Clinical investigations																							
Isolates out of a monitoring program (yes/no)		no																							
Number of isolates available in the laboratory		1																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive: S. Bovismorbificans - 1x.

Table Antimicrobial susceptibility testing of Other serotypes in Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - quantitative data [Dilution method]

Other serotypes		Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		8																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	8	0						3	5															
	Kanamycin	16	8	0										8												
	Neomycin		0	0																						
	Streptomycin	32	8	0									1	5	2											
Amphenicols	Chloramphenicol	16	8	0										8												
	Florfenicol	16	8	0									3	5												
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	8	0				4	4																	
	Ceftazidim	2	8	0						4	4															
Fluoroquinolones	Ciprofloxacin	0.06	8	0		5	3																			
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	8	0							1	7														
Polymyxins	Colistin	8	8	0											8											
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	8	0										8												
Sulfonamides	Sulfamethoxazol	256	8	0											1	5	2									
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	8	0								7	1													
Trimethoprim	Trimethoprim	2	8	0							8															

Table Antimicrobial susceptibility testing of Other serotypes in Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - quantitative data [Dilution method]

Other serotypes		Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		8																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

Fully sensitive: S. Agona - 1x, S. Havana - 1x, S. Indiana - 1x, S. Kentucky - 2x, S. Montevideo - 1x, S. Livingstone - 1x, S. Senftenberg - 1x.

Table Antimicrobial susceptibility testing of Other serotypes in Ducks - meat production flocks - at farm - animal sample - Monitoring - quantitative data [Dilution method]

Other serotypes		Ducks - meat production flocks - at farm - animal sample - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		3																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	3	0						2	1														0.25	32
	Kanamycin	16	3	0										3											4	128
	Neomycin		0	0																						
	Streptomycin	32	3	0										1	2										2	128
Amphenicols	Chloramphenicol	16	3	0										2	1										2	64
	Florfenicol	16	3	0									2	1											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	3	0				2	1																0.06	4
	Ceftazidim	2	3	0						3															0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	3	0	1	1	1																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	3	0								3													0.5	32
Polymyxins	Colistin	8	3	0											3										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	3	0										3											4	64
Sulfonamides	Sulfamethoxazol	256	3	0												1	2								8	1024
Tetracyclines	Tetracyclin	8	3	0								3													1	64
Trimethoprim	Trimethoprim	2	3	0							3														0.5	32
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																						

Table Antimicrobial susceptibility testing of Other serotypes in Ducks - meat production flocks - at farm - animal sample - Monitoring - quantitative data [Dilution method]

Footnote:

Fully sensitive: S. Agona - 1x, S. Livingstone - 1x, S. Senftenberg - 1x.

Table Antimicrobial susceptibility testing of Other serotypes in All foodstuffs - in total - Monitoring - quantitative data [Dilution method]

Other serotypes		All foodstuffs - in total - Monitoring																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		8																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	2	8	0						5	3														0.25	32
	Kanamycin	16	8	0										8											4	128
	Neomycin		0	0																						
	Streptomycin	32	8	0										1	7										2	128
Amphenicols	Chloramphenicol	16	8	0										8											2	64
	Florfenicol	16	8	0									2	6											2	64
Cephalosporins	3rd generation cephalosporins		0	0																						
	Cefotaxim	0.5	8	0				6	2																0.06	4
	Ceftazidim	2	8	0						3	5														0.25	16
Fluoroquinolones	Ciprofloxacin	0.06	8	0		2	6																		0.008	8
	Enrofloxacin		0	0																						
Penicillins	Ampicillin	4	8	0							1	6	1												0.5	32
Polymyxins	Colistin	8	8	0											8										8	16
	Polymyxins		0	0																						
Quinolones	Nalidixic acid	16	8	0										8											4	64
Sulfonamides	Sulfamethoxazol	256	8	0											1	2	5								8	1024
	Sulfonamide		0	0																						
Tetracyclines	Tetracyclin	8	8	0								7			1										1	64
Trimethoprim	Trimethoprim	2	8	0							8														0.5	32

Table Antimicrobial susceptibility testing of Other serotypes in All foodstuffs - in total - Monitoring - quantitative data [Dilution method]

Other serotypes		All foodstuffs - in total - Monitoring																							
Isolates out of a monitoring program (yes/no)		yes																							
Number of isolates available in the laboratory		8																							
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Trimethoprim + sulfonamides	Trimethoprim + sulfonamides		0	0																					

Footnote:

All these isolates were fully sensitive. Meat from bovine animals: 1x S. Derby; Meat from pig: 1x S. Anatun, 1x S. Brandenburg, 1x S. Ohio; Meat from broilers (Gallus gallus): 1x S. Indiana, 1x S. Kentucky; Cheese made from sheep s milk - soft and semi-soft - made from raw or low heat-treated milk: 1x S. Kentucky; Spices - dried: 1x S. Bredeney.

Table Breakpoints for antibiotic resistance testing

Test Method Used	
Disc diffusion	○
Agar dilution	○
Broth dilution	◉
E-test	○

Standards used for testing
NCCLS EUCAST ISO WHO/GSS

			Breakpoint concentration (microg/ml)			Range tested concentration (microg/ml)		Disk content	Breakpoint Zone diameter (mm)		
		Standard for breakpoint	Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Aminoglycosides	**Gentamicin**	EUCAST	2		2	0.25	32				
	Kanamycin		16		16	4	128				
	Streptomycin	EUCAST	32		32	2	128				
Amphenicols	**Chloramphenicol**	EUCAST	16		16	2	64				
	Florfenicol	EUCAST	16		16	2	64				
Cephalosporins	**Cefotaxim**	EUCAST	0.5		0.5	0.06	4				
	Ceftazidim	EUCAST	2		2	0.25	16				
Fluoroquinolones	**Ciprofloxacin**	EUCAST	0.06		0.06	0.008	8				
Penicillins	**Ampicillin**	EUCAST	4		4	0.5	32				
Polymyxins	**Colistin**		8		8	8	16				
Quinolones	**Nalidixic acid**	EUCAST	16		16	4	64				
Sulfonamides	**Sulfamethoxazol**	EUCAST	256		256	8	1024				
Tetracyclines	**Tetracyclin**	EUCAST	8		8	1	64				
Trimethoprim	**Trimethoprim**	EUCAST	2		2	0.5	32				

Table Breakpoints for antibiotic resistance testing

Table Breakpoints for antibiotic resistance testing

Test Method Used	
Disc diffusion	○
Agar dilution	○
Broth dilution	◉
E-test	○

Standards used for testing
NCCLS EUCAST ISO WHO/GSS

			Breakpoint concentration (microg/ml)			Range tested concentration (microg/ml)		Disk content	Breakpoint Zone diameter (mm)		
		Standard for breakpoint	Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Aminoglycosides	**Gentamicin**	EUCAST	2		2	0.25	32				
	Kanamycin		16		16	4	128				
	Streptomycin	EUCAST	32		32	2	128				
Amphenicols	**Chloramphenicol**	EUCAST	16		16	2	64				
	Florfenicol	EUCAST	16		16	2	64				
Cephalosporins	**Cefotaxim**	EUCAST	0.5		0.5	0.06	4				
	Ceftazidim	EUCAST	2		2	0.25	16				
Fluoroquinolones	**Ciprofloxacin**	EUCAST	0.06		0.06	0.008	8				
Penicillins	**Ampicillin**	EUCAST	4		4	0.5	32				
Polymyxins	**Colistin**		8		8	8	16				
Quinolones	**Nalidixic acid**	EUCAST	16		16	4	64				
Sulfonamides	**Sulfamethoxazol**	EUCAST	256		256	8	1024				
Tetracyclines	**Tetracyclin**	EUCAST	8		8	1	64				
Trimethoprim	**Trimethoprim**	EUCAST	2		2	0.5	32				

Table Breakpoints for antibiotic resistance testing

Test Method Used	
Disc diffusion	○
Agar dilution	○
Broth dilution	◉
E-test	○

Standards used for testing
NCCLS EUCAST ISO WHO/GSS

			Breakpoint concentration (microg/ml)			Range tested concentration (microg/ml)		Disk content	Breakpoint Zone diameter (mm)		
		Standard for breakpoint	Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Aminoglycosides	**Gentamicin**	EUCAST	2		2	0.25	32				
	Kanamycin		16		16	4	128				
	Streptomycin	EUCAST	32		32	2	128				
Amphenicols	**Chloramphenicol**	EUCAST	16		16	2	64				
	Florfenicol	EUCAST	16		16	2	64				
Cephalosporins	**Cefotaxim**	EUCAST	0.5		0.5	0.06	4				
	Ceftazidim	EUCAST	2		2	0.25	16				
Fluoroquinolones	**Ciprofloxacin**	EUCAST	0.06		0.06	0.008	8				
Penicillins	**Ampicillin**	EUCAST	4		4	0.5	32				
Polymyxins	**Colistin**		8		8	8	16				
Quinolones	**Nalidixic acid**	EUCAST	16		16	4	64				
Sulfonamides	**Sulfamethoxazol**	EUCAST	256		256	8	1024				
Tetracyclines	**Tetracyclin**	EUCAST	8		8	1	64				
Trimethoprim	**Trimethoprim**	EUCAST	2		2	0.5	32				

2.2 CAMPYLOBACTERIOSIS

2.2.1 General evaluation of the national situation

A. Thermophilic Campylobacter general evaluation

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

All obtained data were collected from the State Veterinary and Food Institutes, the State Veterinary Institute, Public Health Authorities in Slovakia.
Official sampling for presence or count of Campylobacter spp wasn ´t performed, only within direction of SVFA the target control of sheep cheese samples taken directly in special sheep farm establishments.
The Public Health Authority of the Slovak Republic (PHA of the SR) and Regional Health Authorities in the Slovak Republic (RHA in the SR) performed the sampling of foodstuffs and raw materials in compliance with the multi-annual national plan of the official control carried out by public health authorities and its updating for the year 2008 and according Regulation (EC) No 2073/2005. The samples were tested in accordance with a standardized international method for Campylobacter presence (STN EN ISO 10272-1). In case of a positive finding the isolates were species-identified by methods of molecular biology.
Samples of foodstuffs were taken at all stages of food chain.

Campylobacter in foodstuffs
In 2008 there were 74 samples of poultry meat and meat products tested for presence of Campylobacter spp without positive finding and 355 samples of other foodstuffs with 4 positive samples (1,13%). Positive findings were found within target control in sheep cheese intended for next processing. C. jejuni was identified 3 times.

Campylobacter in animals
There were 912 animals tested for presence of Campylobacter spp. in 2008, with 65 positive samples (31 cattle, 2 sheeps, 12 pigs, 2 cats, 1 wildlife, 2 minks).
Trend of occurrence of Campylobacter is increasing and correlate with high occurrence of Campylobacter at all.

In 2008 was performed “The baseline survey on prevalence and antimicrobial resistance of Campylobacter spp. in broiler flocks and on prevalence of Campylobacter spp. and Salmonella spp. in broiler carcasses in Slovak Republic”. SVFI Bratislava and SVFI Dolny Kubin involved this survey. The samples were tested in accordance with a standardized international method for Campylobacter presence and quantification (STN EN ISO 10272-1, 2). In case of a positive finding the isolates were species identified by methods of molecular

biology.
During baseline study were investigated 422 flocks of Gallus Gallus with high incidence of positive findings (324) and it presence 77% prevalence.

2.2.2 Campylobacteriosis in humans

A. Thermophilic Campylobacter in humans

Reporting system in place for the human cases

Campylobacteriosis is reported mandatory, reporting persons are physicians and laboratories.

Case definition

Clinical picture compatible with campylobacteriosis, e.g. diarrhoeal illness of variable severity.

Diagnostic/analytical methods used

Isolation of Campylobacter species from any clinical specimen.

History of the disease and/or infection in the country

Campylobacteriosis is reported in Slovakia since the 80-ties.

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

The trends of campylobacteriosis are stabile in Slovakia. The highest age-specific incidence in the children has been reported up to 1 year of age. The risk factor of transmission was found in sheep milk, sheep cheeses and other sheep products and poultry.

2.2.3 Campylobacter in foodstuffs

A. Thermophilic Campylobacter in Broiler meat and products thereof

Results of the investigation

From January 1, 2008 to December 31, 2008 was carried out the survey on the prevalence and antimicrobial resistance of Campylobacter spp. in broiler flocks and on the prevalence of Campylobacter spp. a Salmonella spp. in broiler carcasses within the Slovak Republic. 422 broiler caecal samples were tested for the presence of Campylobacter spp. and 422 skin samples of broiler carcasses were tested for the presence and counts of Campylobacter spp. and the presence of Salmonella spp.

In respect of skin samples of broiler carcasses, 315 samples were found positive for the presence of Campylobacter spp. The presence of C. jejuni was observed in 258 samples and the presence of C. coli in 70 samples. In 13 samples, both of Campylobacter species, C. jejuni and C. coli were detected.

Quantification of Campylobacter in the positive skin samples of broiler carcasses was also performed. Bacterial counts ranged from 0 to 361 818 per gram.

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

B. Campylobacter spp. in food

Monitoring system

Sampling strategy

All obtained data were collected from the State Veterinary and Food Institutes, the State Veterinary Institute, Public Health Authorities in Slovakia.
Official sampling for presence or count of Campylobacter spp wasn ´t performed, only within direction of SVFA the target control of sheep cheese samples taken directly in special sheep farm establishments.
The Public Health Authority of the Slovak Republic (PHA of the SR) and Regional Health Authorities in the Slovak Republic (RHA in the SR) performed the sampling of foodstuffs and raw materials in compliance with the multi-annual national plan of the official control carried out by public health authorities and its updating for the year 2008 and according Regulation (EC) No 2073/2005. The samples were tested in accordance with a standardized international method for Campylobacter presence (STN EN ISO 10272-1). In case of a positive finding the isolates were species-identified by methods of molecular biology.
Samples of foodstuffs were taken at all stages of food chain.

Frequency of the sampling

according to work out a plan taking of samples
as a targeted control, just occasionally

Type of specimen taken

Other: foodstuffs

Diagnostic/analytical methods used

Methods of sampling - according the valid STN
Diagnostic/analytical methods used STN EN ISO 10272-1

Results of the investigation

In 2008 there were 74 samples of poultry meat and meat products tested for presence of Campylobacter spp without positive finding and 355 samples of other foodstuffs with 4 positive samples (1,13%). Positive findings were found within target control in sheep cheese intended for next processing. C. jejuni was identified 3 times.

Table Campylobacter in poultry meat

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for thermophilic Campylobacter spp.	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus) - fresh	PHA	single	25 g	3	0					
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat	PHA	batch	25 g	28	0					
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - at processing plant	PHA	batch	25 g	34	0					
Meat from turkey - meat products - cooked, ready-to-eat	PHA	single	25 g	1	0					
Meat from turkey - minced meat - intended to be eaten cooked	PHA	single	25 g	1	0					
Other processed food products and prepared dishes - unspecified - ready-to-eat foods	PHA	single	25 g	7	0					

Table Campylobacter in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for thermophilic Campylobacter spp.	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Cheeses made from cows' milk	PHA	single	25 g	3	0					
Cheeses made from sheep's milk - soft and semi -soft - made from pasteurised milk	PHA	single	25 g	14	0					
Cheeses made from sheep's milk - soft and semi -soft - made from raw or low heat-treated milk	SVFI DK	batch	25 g	107	4		3			1
Dairy products (excluding cheeses) - dairy products, not specified	PHA	batch	25 g	36	0					
Meat from bovine animals - meat preparation - intended to be eaten cooked	PHA	batch	25 g	26	0					
Meat from pig - meat preparation - intended to be eaten cooked	PHA	batch	25 g	7	0					
Meat from pig - minced meat - intended to be eaten cooked	PHA	batch	10 g	30	0					
Other processed food products and prepared dishes - unspecified - ready-to-eat foods	PHA	single	25 g	132	0					

2.2.4 Campylobacter in animals

A. Campylobacter spp. in animal

Monitoring system

Sampling strategy

Monitoring for campylobacteriosis in Slovac Republic is not adopted.
Samples are taken by official veterinarians or private veterinarians in case of suspicion for disease or on base of clinical signs.

Frequency of the sampling

Samples are taken by official veterinarians or private veterinarians in case of suspicion for disease or on base of clinical signs.

Type of specimen taken

Other: faeces

Vaccination policy

vaccination in Slovac Republic is not performed.

Results of the investigation

There were 912 animals tested for presence of Campylobacter spp. in 2008, with 65 positive samples (31 cattle, 2 sheeps, 12 pigs, 2 cats, 1 wildlife, 2 minks).
Trend of occurrence of Campylobacter is increasing and correlate with high occurrence of Campylobacter at all.

In 2008 was performed “The baseline survey on prevalence and antimicrobial resistance of Campylobacter spp. in broiler flocks and on prevalence of Campylobacter spp. and Salmonella spp. in broiler carcasses in Slovak Republic”. SVFI Bratislava and SVFI Dolny Kubin involved this survey. The samples were tested in accordance with a standardized international method for Campylobacter presence and quantification (STN EN ISO 10272-1, 2). In case of a positive finding the isolates were species identified by methods of molecular biology.
During baseline study were investigated 422 flocks of Gallus Gallus with high incidence of positive findings (324) and it presence 77% prevalence.

Table Campylobacter in animals

	Source of information	Sampling unit	Units tested	Total units positive for thermophilic Campylobacter spp.	C. coli	C. jejuni	C. lari	C. upsaliensis	C. fetus	Thermophilic Campylobacter spp., unspecified
Cats	SVFI, SVI	animal	25	2		1		1		
Cattle (bovine animals)	SVFI, SVI	animal	508	31	10	19			2	
Dogs	SVFI, SVI	animal	137	15	1	13		1		
Gallus gallus (fowl) - broilers - at slaughterhouse - animal sample - Survey - EU baseline survey	SVFI, SVI	flock	422	324	103	267				
Guinea pigs	SVFI, SVI	animal	1	0						
Minks	SVFI, SVI	animal	2	2		2				
Pigs	SVFI, SVI	animal	156	12	12					
Sheep	SVFI, SVI	animal	69	2		2				
Solipeds, domestic - horses	SVFI, SVI	animal	2	0						
Wild animals	SVFI, SVI	animal	8	1		1				
Zoo animals, all	SVFI, SVI	animal	4	0						

2.2.5 Antimicrobial resistance in Campylobacter isolates

A. Antimicrobial resistance in Campylobacter jejuni and coli in poultry

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Erytromycin
Ciprofloxacin
Tetracyclin
Streptomycin
Gentamicin
Chloramphenicol
Ampicillin
Oxolinic acid

Breakpoints used in testing

Erytromycin: MIC 4 for Campylobacter jejuni, MIC 16 for Campylobacter coli
Ciprofloxacin: MIC 1
Tetracyclin: MIC 2
Streptomycin: MIC 2 for C.jejuni, MIC 4 for C.coli
Gentamicin: MIC 1
Chloramphenicol: MIC 8
Ampicilin: MIC 4
Oxolinic acid: MIC 8

B. Antimicrobial resistance of Campylobacter spp., unspecified in animal

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

The monitoring system for Antimicrobial resistance in Campylobacter in the Slovak republic has not been adopted.

C. Antimicrobial resistance of Campylobacter spp., unspecified in food

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

Tne monitorig of antimicrobial resistance of campylobacter spp in Slovak republic is not adopted.

D. Antimicrobial resistance of Campylobacter spp., unspecified in animal - Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study - at

Sampling strategy used in monitoring

Frequency of the sampling

Monthly, randomly using randomization sheet.

Type of specimen taken

caecum
neck skin

Methods of sampling (description of sampling techniques)

Method of sampling is described in Annex 1 Part C and D of Commission Decision 2007/516/EEC.

Procedures for the selection of isolates for antimicrobial testing

Within the framework of monitoring antimicrobial resistance it was necessary to test minimum 170 isolates of Campylobacter spp. Not more than one isolate per Campylobacter species from the same slaughter batch was included in the monitoring.
If it was a lower number of isolates than the target sample size available, all these isolates would be included in the antimicrobial resistance monitoring.
In our case a higher number of isolates was available so we included all isolates.
71 of detected isolates of Campylobacter spp. presented mixed bacterial culture of C. jejuni and C. coli, which were confirmed by PCR.
In term of MIC level these mixed samples are not suitable for antimicrobial testing. To analyses there were only pure cultures chosen.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Campylobacter jejuni
Erythromycin
Ciprofloxacin
Tetracycline
Streptomycin
Gentamicin

Campylobacter coli
Erythromycin
Ciprofloxacin
Tetracycline
Streptomycin
Gentamicin

Control program/mechanisms

The control program/strategies in place

The control programme was performed according Commission Decision 2007/516/EC concerning a financial contribution from the Community towards a survey on the prevalence and antimicrobial resistance of Campylobacter spp. in broiler flocks and on the prevalence of
Campylobacter spp. and Salmonella spp. in broiler carcasses to be carried out in the Member States

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

Resistance of Campylobacter spp. isolates in Gallus Gallus.

All received data comes from State Veterinary and Food Institutes Dolny Kubin, Bratislava and Kosice. Statistical review elaborated National Reference Laboratory for antimicrobial resistance in Dolny Kubin.
Samples of poultry Gallus Gallus were taken according “The survey on the prevalence and antimicrobial resistance of Campylobacter spp. in broiler flocks and on the prevalence of Campylobacter spp. a Salmonella spp. in broiler carcasses within the Slovak Republic” and in compliance with direction of State Veterinary and Food administration of the Slovak republic.
Campylobacter from caecum was isolated according to STN EN ISO 10272-1. positive samples were sent from SVFI Bratislava to NRL-AR, there the second identification of species was done by molecular methods and level of antimicrobial resistence was determined. Minimal inhibition concentration was assigned by microdilution method using micro- dics with required concentration range of antimicrobials pursuant to requirements of EFSA and CRL for animicrobial resistance.
Analyses were done according guidelines CLSI M45-A, Vol.26, No.19 a CLSI M13-A3, Vol.28, No.8. For quality control was used reference strain Campylobacter jejuni ATCC 33560. Positive isolates of Campylobacter are stored in collection of NRL in period of 2 years. For the purpose of guaranty of quality proportion – 16 isolates of Campylobacter spp. was sent to Community Reference Laboratory for Campylobacter (SVA, Upsalla, Sweeden) for confirmation. Identification of 16 sent isolates identified by NRL was confirmed.

Within the framework of monitoring antimicrobial resistance it was necessary to test minimum 170 isolates of Campylobacter spp. Not more than one isolate per Campylobacter species from the same slaughter batch was included in the monitoring. If it was a lower number of isolates than the target sample size available, all these isolates would be included in the antimicrobial resistance monitoring.
In our case a higher number of isolates was available so we included all isolates.
Totally 253 isolates of Campylobacter C. jejuni, C. coli) were tested. Within survey there were 324 positive isolates of Campylobacter spp. detected, 71 of

them presented mixed bacterial culture of C. jejuni and C. coli, which were confirmed by PCR.
In term of MIC level these mixed samples are not suitable for antimicrobial testing. To analyses there were only pure cultures chosen. Resistance to antimicrobials varied from 6, 7 % of isolates resistant to gentamicin to 65% isolates resistant to chinolones. Mostly alarming is resistance to chinolones (oxolin acid) and fluorchinolones (ciprofloxacin).

In this case was confirmed that C. coli is more resistant to antimicrobials than C jejuni. 90% of C. coli isolates were resistant towards chinolones (OXO) in comparison with C.jejuni (68%) and 86% of C.coli isolates were resistant towards fluoroxinolones (CIP) compared with 67% of C.jejuni isolates. Mentioned type of resistance is quite spread and it´ s relevant because genes responsible for this type of resistance are localized on plasmid and they are combined with genes responsible for resistant to cephalosporines. Using fluorochinolones in therapy may cause transferable resistance to fluorochinolones and cephalosporines together.

Situation related to other tested antimicrobials is favourable.

Table Antimicrobial susceptibility testing of C. jejuni - qualitative data

Footnote:

Tetracyclin: N:189, n:36
Ampicilin: N:189, n:115
Ciprofloxacin: N:189, n:110
Oxolinic acid: N:189, n:114
Gentamicin: N:189, n:16
Streptomycin: N:189, n:44
Erytromycin: N:189, n:18
Chloramphenicol: N:189, n:14

Table Antimicrobial susceptibility testing of C. jejuni in Gallus gallus (fowl) - at slaughterhouse - Monitoring - official sampling - quantitative data [Dilution method]

C. jejuni		Gallus gallus (fowl) - at slaughterhouse - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory																										
Antimicrobials:		**break points**	**N**	**n**	**<=0.008**	**0.015**	**0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides	**Gentamicin**		0	0																						
	Streptomycin		0	0																						
Amphenicols	**Chloramphenicol**	8	0	0																						
Fluoroquinolones	**Ciprofloxacin**	1	0	0																						
Macrolides	**Erythromycin**		0	0																						
Penicillins	**Ampicillin**	4	0	0																						
Quinolones	**Nalidixic acid**		0	0																						
	Oxolinic acid	32	0	0																						
Tetracyclines	**Tetracyclin**	2	0	0																						

Table Antimicrobial susceptibility testing of C. jejuni in broilers - Gallus gallus (fowl) - sampling in the framework of the broiler baseline study - at slaughterhouse - animal sample - caecum - Survey - EU baseline survey - quantitative data [Dilution method]

C. jejuni		Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study - at slaughterhouse - animal sample - caecum - Survey - EU baseline survey																								
Isolates out of a monitoring program (yes/no)		yes																								
Number of isolates available in the laboratory		253																								
Antimicrobials:		break points	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides	Gentamicin	*01*	0	0																						
	Streptomycin		0	0																						
Amphenicols	Chloramphenicol	8	189	8						6	47	71	30	21	6	5	2		1							
Fluoroquinolones	Ciprofloxacin	*1*	176	99			2	28	29	9	7	2	3	3	23	36	31	3								
Macrolides	Erythromycin		0	0																						
Penicillins	Ampicillin	4	0	0																						
Quinolones	Nalidixic acid		0	0																						
	Oxolinic acid	32	71	4						1		18	17	5	15	6	5	4								
Tetracyclines	Tetracyclin	2	0	0																						

Footnote:

For Ciprofloxacin we tested also following concentrations:
less than 0,01: 1 isolate
less than 0,03: 1 isolate
less than 0,125: 1 isolate
more than 32: 12 isolates

For Oxolinic acid we tested also following concentrations:
less than 0,5: 13 isolates
more than 64: 105 isolates

Table Antimicrobial susceptibility testing of Campylobacter in animals

Campylobacter spp., unspecified		Gallus gallus (fowl)		Cattle (bovine animals)		Pigs	
Isolates out of a monitoring program (yes/no)		yes					
Number of isolates available in the laboratory		253					
Antimicrobials:		N	n	N	n	N	n
Aminoglycosides	Gentamicin	253	17				
	Streptomycin	253	58				
Fluoroquinolones	Ciprofloxacin	253	165				
Fully sensitive	Fully sensitive	253	16				
Macrolides	Erythromycin	253	26				
Penicillins	Ampicillin	253	170				
Quinolones	Oxolinic acid	253	169				
Resistant to 1 antimicrobial	Resistant to 1 antimicrobial	253	58				
Resistant to 2 antimicrobials	Resistant to 2 antimicrobials	253	43				
Resistant to 3 antimicrobials	Resistant to 3 antimicrobials	253	89				
Resistant to 4 antimicrobials	Resistant to 4 antimicrobials	253	42				
Resistant to >4 antimicrobials	Resistant to >4 antimicrobials	253	26				
Tetracyclines	Tetracyclin	253	62				

Table Breakpoints used for antimicrobial susceptibility testing

Test Method Used	
Disc diffusion	○
Agar dilution	○
Broth dilution	◉
E-test	○

Standards used for testing
NCCLS

			Breakpoint concentration (microg/ml)			Range tested concentration (microg/ml)		Disk content	Breakpoint Zone diameter (mm)		
		Standard for breakpoint	Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Aminoglycosides	**Gentamicin**	NCCLS				0.03	128				
	Streptomycin	NCCLS				0.03	128				
Amphenicols	**Chloramphenicol**	NCCLS			8	0.125	256				
Fluoroquinolones	**Ciprofloxacin**	NCCLS			1	0.01	64				
Macrolides	**Erythromycin**	NCCLS				0.06	256				
Penicillins	**Ampicillin**	NCCLS			4	0.03	256				
Quinolones	**Oxolinic acid**	NCCLSI			32	0.25	64				
Tetracyclines	**Tetracyclin**	NCCLS			2	0.03	256				

Footnote:

Gentamicin: break point:

C.jejuni: 1 microgram/ml

C.coli: 2 microgram/ml

C.coli: 4 microgram/ml

Erytromycin: break pont:

C.jejuni: 4 microgram/ml

C.coli: 16 microgram/ml

2.3 LISTERIOSIS

2.3.1 General evaluation of the national situation

A. Listeriosis general evaluation

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

All samples were tested in accordance with standardized international methods for Listeria presence (STN EN ISO 11290-1) or Listeria counts (STN EN ISO 11290-2) by single or batch system according to applicant ´s requirements and amount of a taken sample. The sample weight was 25g (detection method) or 10g (quantification method). Regarding animals, it is mostly a matter of brain-tissue samples or abortion material tested for L. monocytogenes presence.

Milk and dairy products
Regarding milk testing and products thereof, the types of samples are specified in Regulation (EC) No 2073/2005 as amended by Regulation (EC) No 1441/2007. The samples according to their character and predisposition to Listeria (aw, pH, shelf-life) were tested for Listeria presence or enumeration analysis.
A total of 2 469 samples were tested for presence of Listeria monocytogenes with positive findings in 18 samples. Positive samples were found in cheeses from pasteurized milk from cows, soft sheep cheeses intended for processing, hard cheeses from pasteurized sheep milk and products from cheeses.

Other products
In respect of other food, mainly meat and meat products were under inspection, testing swab samples from premises, fruit and vegetable testing (fresh or frozen), ready-to-eat meals and ready-to-cook foods, mayonnaise and other food. A total of 4855 samples were tested for LM presence (thereof 132 positive samples, 2,7%) and thereof 13 samples were beyond 100 CFU/g.
Totally 4855 samples were investigated in 2008, with positive findings in 132 samples which makes 2,7 %. The highest amount of positive samples represented sandwiches, processed food and dishes and ready-to-eat salads. The high percentage of positive findings was found in frozen and marinated vegetable not intended for direct consumption.
Other positive results were in heat-treated bovine and pork meet products.

Animals
A total of 978 animals in 2008 were examined for Listeria with positive findings in 15 animals which makes 1,53% (3 cattle, 12 sheep). Comparing the past years

(2003-2007) there is a slight increase in the number of positive findings.

Recent actions taken to control the zoonoses

All obtained data were collected from the State Veterinary and Food Institutes, the State Veterinary Institute, Public Health Authorities in Slovakia.
The samples comprised of official samples taken by inspectors of the Veterinary and Food
Administrations according direction of State Veterinary and Food Administration “Plan for sampling and laboratory examination if products of animal origin for official controls in 2008”, according Regulation (EC) No 2073/2005 and within direction of SVFA the target control of sheep cheese samples taken directly in special sheep farm establishments.
The Public Health Authority of the Slovak Republic (PHA of the SR) and Regional Health Authorities in the Slovak Republic (RHA in the SR) performed the sampling of foodstuffs and raw materials in compliance with the multi-annual national plan of the official control carried out by public health authorities and its updating for the year 2008 and according Regulation (EC) No 2073/2005.

2.3.2 Listeriosis in humans

A. Listeriosis in humans

Reporting system in place for the human cases

Disease is reported mandatory by physicians on microbiological labs.

Case definition

Infection caused by Listeria monocytogenes, which may produce any several clinical syndromes, including stillbirth, listeriosis of newborn, meningitis, bacteriemia or localized infections.

Diagnostic/analytical methods used

isolation of L-monocytogenes from a normally sterile site (e.g. blood or cerebrospinal fluid or, less commonly, joint, pleural, or pericardial fluid).

Results of the investigation

Sporadic cases are reported in Slovakia

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

Trend of disease is stabile, sporadic cases from 2-10 cases per year, sporadic professional disease.

2.3.3 Listeria in foodstuffs

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Cheeses made from cows' milk - hard - made from pasteurised milk	SVFI	batch	25 g	120	0	115	0	5	0	0
Cheeses made from cows' milk - hard - made from raw or low heat-treated milk	SVFI	batch	25 g	37	0	37	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk	SVFI	batch	25 g	489	4	477	4	12	0	0
Cheeses made from goats' milk - soft and semi-soft	PHA	batch	25 g, 10 g	5	0	5	0	5	0	0
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk	PHA	single	10 g	3	0			3	0	0
Cheeses made from goats' milk - soft and semi-soft - made from raw or low heat-treated milk	PHA	batch	25 g, 10 g	45	0	45	0			
Cheeses made from sheep's milk - hard - made from pasteurised milk	PHA	single	25 g	2	2	1	1	1	1	0
Cheeses made from sheep's milk - soft and semi -soft - made from pasteurised milk	PHA, SVFI	batch	25 g	26	0	26	0			
Cheeses made from sheep's milk - soft and semi -soft - made from raw or low heat-treated milk	SVFI	batch	25 g, 10 g	344	7	7	7			
Cheeses, made from mixed milk from cows, sheep and/or goats - hard - made from pasteurised milk	SVFI	batch	25 g	2	0	2	0			
Cheeses, made from mixed milk from cows, sheep and/or goats - hard - made from raw or low heat-treated milk	SVFI	batch	25 g	4	0	4	0			
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - made from pasteurised milk	SVFI	batch	25 g	38	0	36	0	2	0	0

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - made from raw or low heat-treated milk	SVFI	batch	25 g	135	0	130	0	5	0	0
Confectionery products and pastes	PHA, SVFI	batch	25 g	43	0	43	0	8	0	0
Dairy products (excluding cheeses) - butter	SVFI	batch	25 g	88	0	88	0			
Dairy products (excluding cheeses) - cream	PHA, SVFI	batch	25 g	15	0	14	0	1	0	0
Dairy products (excluding cheeses) - fermented dairy products	PHA, SVFI	batch	25 g, 10 g	317	0	302	0	15	0	0
Dairy products (excluding cheeses) - ice-cream	PHA	single	25 g	93	0	93	0	93	0	0
Dairy products (excluding cheeses) - milk powder and whey powder	PHA, SVFI	batch	25 g, 10 g	25	0	25	0	10	0	0
Infant formula	PHA	batch	25 g, 10 g	353	0	353	0	51	0	0
Infant formula - dried	PHA	single	25 g	18	0	18	0	18	0	0
Milk, cows' - UHT milk	SVFI	batch	1 ml	75	0	75	0			
Milk, cows' - pasteurised milk	SVFI	batch	25 ml	132	0	132	0			
Milk, cows' - raw	SVFI	single	0.2 ml	4	0	4	0			
Milk, goats' - pasteurised - at processing plant	SVFI	single	1 ml	3	0	3	0			
Milk, goats' - raw	SVFI	single	1 ml	1	0	1	0			
Milk, sheep's - pasteurised	SVFI	batch	2.5 ml	1	0	1	0			
Milk, sheep's - raw	PHA	single	25 ml	1	0	1	0			
Other processed food products and prepared dishes	PHA	batch	25 g, 10 g	50	5	35	5	35	0	0

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
All foodstuffs - at processing plant - environmental sample - Surveillance - official controls (swabs)	SVFI	single		1261	18	1261	18			
Confectionery products and pastes	PHA	batch	25 g, 10 g	6	0	6	0	6	0	0
Fish - smoked	SVFI	batch	25 g	9	0	9	0			
Fishery products, unspecified	SVFI, PHA	batch	25 g, 10 g	372	5	372	5	224	0	0
Infant formula	PHA	single	10 g	25	0			25	0	0
Infant formula - dried	PHA	single	25 g	23	0	23	0			
Juice - fruit juice	PHA	single	10 g	2	0			2	0	0
Meat from bovine animals - fresh	PHA	batch	25 g	1	0	1	0	1	0	0
Meat from bovine animals - meat products - cooked, ready-to-eat	SVFI, PHA	batch	25 g	40	0	40	0	6	0	0
Meat from bovine animals and pig - meat products	SVFI	batch	25 g	278	9	278	8	15	0	1
Meat from broilers (Gallus gallus) - fresh	SVFI	batch	25 g	3	0	3	0			
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat	SVFI, PHA	batch	25 g	174	0	170	0			
Meat from deer (venison)	PHA	batch	25 g	5	0	5	0	5	0	0
Meat from geese - meat products - cooked, ready -to-eat	SVFI	batch	25 g	1	0	1	0			
Meat from pig - fresh	SVFI	batch	25 g	10	1	10	1			
Meat from pig - meat products - cooked, ready-to -eat	SVFI, PHA	batch	25 g	1206	13	1206	13	30	3	0
Meat from pig - meat products - raw but intended to be eaten cooked	SVFI	batch	25 g	12	3	12	3			

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Meat from pig - minced meat	SVFI	batch	25 g	1	0	1	0			
Meat from pig - offal - Frozen vegetables [1)]	SVFI	batch	25 g	38	7	38	2	38	2	5
Meat from turkey - meat products - cooked, ready-to-eat	SVFI	batch	25 g	17	0	15	0	2	0	0
Other processed food products and prepared dishes - sandwiches	PHA	batch	25 g, 10 g	169	14	169	14	136	14	0
Other processed food products and prepared dishes - unspecified	PHA	single	25 g, 10 g	486	39	254	32	470	24	7
Ready-to-eat salads	PHA	batch	25. 10g	714	23	316	23	273	20	0
Sauce and dressings	PHA	single	25 g, 10 g	5	0	5	0	5	0	0

Comments:

[1)] frozen or marinated, intended to be eaten cooked

2.3.4 Listeria in animals

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria spp.	L. monocytogenes	Listeria spp., unspecified
Cattle (bovine animals)	SVFI, SVI	animal	463	3	3	
Dogs	SVFI, SVI	animal	8	0		
Goats	SVFI, SVI	animal	6	0		
Pigs	SVFI, SVI	animal	65	0		
Poultry, unspecified	SVFI, SVI	flock	5	0		
Sheep	SVFI, SVI	animal	429	12	12	
Zoo animals, all	SVFI, SVI	animal	2	0		

2.4 E. COLI INFECTIONS

2.4.1 General evaluation of the national situation

A. Verotoxigenic Escherichia coli infections general evaluation

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

The monitoring system for Verotoxigenic E.coli in the Slovak republic has not been adopted. The investigations were performed on the basis of targeted investigations in differential diagnostics and under suspicoin of infection, documented by clinical signs. In 2008, no samples were planned under the official sampling plan for examination of the presence of verotoxigenic E.coli in food of plant and animal origin. Despite it, under the monitoring the targeted control was performed at the beginning of a sheep season in the region Orava, Liptov, where the typical Slovak products are produced from a raw sheep milk. The part of this targeted control was also the examination for E.coli O157 and at the same time also for the evidence of the presence of genes responsible for the production of verotoxines.

The samples were taken directly in special sheep farm establishments. It involved the examination of sheep cheese and milk. The samples were subject to examination by molecular methods for determination of the presence of DNA O157 and genes VT1 and VT2.

2.4.2 E. coli infections in humans

2.4.3 Escherichia coli, pathogenic in animals

2.5 TUBERCULOSIS, MYCOBACTERIAL DISEASES

2.5.1 General evaluation of the national situation

A. Tuberculosis general evaluation

History of the disease and/or infection in the country

In Europe the bovine tuberculosis belongs still to the seriousdisease in humans and animals. Because this disease is "obligatory notifiable", it is possible to become acquainted yearly from OIE statistics with the incidence in bovine animals. The disease situation in TBC occurrence, in pursuance of the definition of the International Animal Health Code OIE is a territory of the country free of bovine tuberculosis in cattle till the prevalence of infected herds does not exceed 0,2% of totally bred herds. This condition fulfilled also Slovakia as to 4.3.2005 (Commission Decision No. 2005/179/EC).
In Slovakia bovine tuberculosis was controlled within the national eradication programme in the second half of the last century. In the years 1990-1999 the decrease of bovine tuberculosis incidence in cattle was recorded in Slovakia. With the decreasing incidence of bovine tuberculosis in cattle also decrease of bovine tuberculosis in other animals was recorded in Slovakia.
The last occurrence of M.bovis in bovine animals in Slovakia, owner of agricultural cooperative TupÃ¡, District Levice, year 1992.

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

In 2008 there were investigated 41 samples of lymph nodes from cattle and pigs and 1 sample from aquarium fish for presence of tuberculosis.
The samples of lymph nodes were taken at slaughterhouses except one sample which was taken at farm and two samples with unknown origin. Sample from aquarium fish was taken directly in National Reference Laboratory for tuberculosis (M. bovis) and other mycobacterioses.
The samples sent for investigation were taken from animals which shown pathological changes during inspection at slaughterhouse or during pathological-anatomy necropsy or in case of positive reagents.

Only 1 positive sample in aquarium fish was found of all samples tested. Positive finding was typed as Mycobacterium fortuitum. In any case were isolated mycobacteria of TBC-complex.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases

In finding of Mycobacterium in slaughtered animals, the carcass are confiscated.

Recent actions taken to control the zoonoses

In cattle
A) Single intradermal tuberculin test by mammalian tuberculin:
â€¢ once per year 33% of holdings in the district â€“ all animals over 24 months of age
â€¢ once per year all animals over 24 months of age from all small holdings (farms of physical persons, who farm bovine animals for their own charge and do not introduce their products into the market)
â€¢ once per year bulls in insemination centre and bulls used for natural breeding, tests should be performed up to 12 months since the last examination.
â€¢ young bulls before the basic selection,
â€¢ in holdings with evidence of a significant changes indicating tuberculosis within post mortem inspection (suspicion of the tuberculosis) is the officially tuberculosis free herd status suspended and tuberculination of all animals over six weeks of age is performed (immediately-in the case if minimum 42 days elapsed after the last tuberculination)
B) intradermal comparative test by mammalian tuberculin and avian tuberculin used for intradermal comparative test:
a) In the holdings with presence of positive reactors to mammalian tuberculin in the single intradermal tuberculin test
b) In the holdings with inconclusive reactors to single intradermal tuberculin test with mammalian tuberculin (also when last single intradermal tuberculin test was performed previous year and reasonable suspicion of false positive reaction or interference reaction is in place as result e.g. presence of different mycobacteriae, evidence M. avium subsp. M. paratuberculosis, etc.)
c) In the holdings with positive M. bovis or M. avium microbiological result and in the case of staff tuberculosis affection
In pigs
Single intradermal tuberculin test by avian tuberculin:
a)
ï€- in holding, in case of evidence of a significant changes indicating tuberculosis within post mortem inspection (suspicion of the tuberculosis)
ï€- once per year breeding boars in insemination centre
ï€- once per year basic breeding holdings,
Tests should be performed up to 12 months since the last examination.
b) In holdings with positive microbiological finding of M. avium and in the case of staff tuberculosis affection, immediately-in the case if minimum 6 weeks elapsed after the last tuberculination
c) Bacteriologic investigation in case of
ï€- slaughtering of positive reactors
ï€- looking for source of infection

ï€- significant changes indicating tuberculosis within post mortem inspection at slaughterhouse

Yearly elaborated "surveillance of bovine and avian TBC in the SR for the respective year", together with human service, epidemiological analysis of the incidence and prevalence of TBC occurrence in humans.

2.5.2 Tuberculosis, mycobacterial diseases in humans

2.5.3 Mycobacterium in animals

A. Mycobacterium bovis in bovine animals

Status as officially free of bovine tuberculosis during the reporting year

The entire country free

On the basis of Commission Decision 2005/179/EC Slovak Republic is officially free of tuberculosis.

Free regions

All regions in Slovak Republic are officially free of tuberculosis.

Monitoring system

Sampling strategy

Positive reagents in simple tuberculine test are examined by comparative test earliest in 6 -8 weeks, repeatedly positively reacted animals for bovine tuberculine are slaughtered and their lymphnodes are additionally examined laboratorily in the respective NRL for bovine tuberculosis. Tuberculosis changes identified in routine veterinary-hygnienic examination of slaughtered bovine animals are also laboratory examined.

Frequency of the sampling

in case of positive intravital tests - reagents for tuberculin, TBC changes at slaugterhouses

Type of specimen taken

lymph nodes according to district competence, in valuable animals - lung lavage

Methods of sampling (description of sampling techniques)

3- packing, label, application form (accompanying report), cool 2-8 CÂº, or freezing, taking into so called sample, transport to NRL

Case definition

detailed description

Diagnostic/analytical methods used

pathological-anatomical examination (judgement of changes), histological, direct microscopy (bacterioscopy) - staining by method Z-N, cultivation on selective growth cultures - liquid and solid, identification of isolates - biochemically, by biological trial, DNA-DNA by hybridization (probes), methods of spoligotyping.
Examinations are covered by state (Veterinary prevention and protection).

Vaccination policy

vaccination is not performed

Other preventive measures than vaccination in place

isolation of reagents, announcement of outbreak

Control program/mechanisms

The control program/strategies in place

. control programmes, procedures on the spot : intravital diagnostics, isolation
. current actions for the purpose of zoonosis control: surveillance

Recent actions taken to control the zoonoses

A)Single intradermal tuberculin test by mammalian tuberculin :
Examine
-once per year 33% of holdings in the district â€“ all animals over 24 months of age
-once per year all animals over 24 months of age from all small holdings (farms of physical persons, who farm bovine animals for their own charge and do not introduce their products into the market)
-once per year bulls in insemination centre and bulls used for natural breeding,
Tests should be performed up to 12 months since the last examination.
-young bulls before the basic selection,
-in holdings with evidence of a significant changes indicating tuberculosis within post mortem inspection (suspicion of the tuberculosis) is the officially tuberculosis-free herd status suspended and tuberculination of all animals over six weeks of age is performed (immediately in the case if minimum 42 days elapsed after the last tuberculination)
B)Intradermal comparative test by mammalian tuberculin and avian tuberculin used for intradermal comparative test:
a)in the holdings with presence of positive reactors to mammalian tuberculin in the single intradermal tuberculin test
1.Follow up the procedure of Annex 2, Part I., 3 A, b) of the Ordinance of the government 280/2003 Coll.
-suspend the officially tuberculosis-free herd status
-slaughter the positive reactor
-carry out all prescribed examinations of the positive reagent
-the status of the herd shall remain suspended until such time as all laboratory examinations have been completed - if the presence of tuberculosis is not confirmed by laboratory examinations, the suspension of the officially tuberculosis-free status may be lifted following an intradermal comparative test of all animals over six weeks of age with negative results at least 42 days after the removal of the reactor animal
Or
2.if there is a suspicion of false positive test reaction or interference test reaction
-suspend the officially tuberculosis-free herd status

-isolate the positive reactor
-the officially tuberculosis-free status may be lifted following an intradermal comparative test of all animals over six weeks of age with negative results performed at least 42 days after single intradermal test performance
b) in the holdings with inconclusive reactors to single intradermal tuberculin test with mammalian tuberculin (also when last single intradermal tuberculin test was performed previous year and reasonable suspicion of false positive reaction or interference reaction is in place as result e.g. presence of different mycobacteriae, evidence m.avium subsp. M.paratuberculosis, etc.)
1.Follow up the procedure of Annex 2, Part I., 3 A, c) of the Ordinance of the government 280/2003 Coll. â€“ further test to clarify the status of inconclusive reactors the intradermal comparative test have to be used.
Intradermal comparative test inconclusive reactors are subjected to repetitive test after at least 42 days. If the animals after repeated intradermal comparative test are not negative, shall be deemed to be positive reactors â€“these animals are removed from the herd and after their slaughter, laboratory and epizootical examination is performed.
If tuberculosis is not confirmed, all animals over six weeks of age are subjected to another intradermal comparative test which is performed after at least 42 days from the removal of the positive reactor .
If the tuberculosis is confirmed, the officially tuberculosis-free status is to be withdrawn and the procedure of the Governmental ordinance 280/2003 Coll. on animal health problems affecting intra-Community trade in bovine animals and swine should be followed.
c) In the holdings with positive M.bovis or M.avium microbiological result and in the case of staff tuberculosis affection

Measures in case of the positive findings or single cases

slaughtering, additional laboratory examination, notification to NRL - SVFA BA - EU

Notification system in place

district veterinarian or inspector, DVFA, RVFA, SVFA
Results of examinations: from NRL to DVFA, to SVFA.

Table Tuberculosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Mycobacterium spp.	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified	M. fortuitum
Cattle (bovine animals)	DSL Nitra	animal	12	0				
Fish - aquarium fish	DSL Nitra	animal	1	1				1
Pigs	DSL Nitra	animal	29	0				

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Routine tuberculin testing		Number of tuberculin tests carried out before the introduction into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/432/EEC)	Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological examinations	Number of animals detected positive in bacteriological examination
	Herds	Animals	Number of herds	%	Number of herds	%	Interval between routine tuberculin tests	Number of animals tested			
Bratislavsky kraj	93	14797	93	100	0	0	3	2588	0	0	0
Trnavsky kraj	567	87591	567	100	0	0	3	21274	0	0	0
Trenciansky kraj	499	51062	499	100	0	0	3	11693	0	0	0
Nitriansky kraj	782	75725	782	100	0	0	3	13175	1640	0	0
Zilinsky kraj	2740	67770	2740	100	0	0	3	18862	0	0	0
Banskobystricky kraj	3012	80413	3012	100	0	0	3	18671	0	0	0
Presovsky kraj	1632	80475	1632	100	0	0	3	16757	0	0	0
Kosicky kraj	1003	46964	1003	100	0	0	3	10473	4	0	0
Total	10328	504797	10328	100.0	0	0.0	24	113493	1644	0	0
Total - 1											

2.6 BRUCELLOSIS

2.6.1 General evaluation of the national situation

A. Brucellosis general evaluation

History of the disease and/or infection in the country

Liquidation of brucellosis in the years 1959 â€“ 1964 was mainly based on antibody proof. In the Slovak Republic the vaccination was never used in liquidation of brucellosis and it was proceeded only by radical or elimination method in recovering of the holding.

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

Slovakia is officially free of brucellosis (B.melitensis)

2.6.2 Brucellosis in humans

A. Brucellosis in humans

Reporting system in place for the human cases

brucellosis is reported mandatory by physician and microbiological labs

Case definition

Clinical picture compatible with brucellosis, e.g. acute or insidious onset of fever, night sweats, undue fatigue, anorexia, weight loss, headache and arthralgia

Diagnostic/analytical methods used

demonstration on specific antibody response, demonstration by immunoflorescence of Brucella sp. In a clinical specimen
Isolation of Brucella species from a clinical specimen

Additional information

For a probable case:
A single high titre

2.6.3 Brucella in animals

A. Brucella abortus in bovine animals

Status as officially free of bovine brucellosis during the reporting year

The entire country free

Slovakia is officially free of brucellosis (B.melitensis) based on Commission Decision 2005/179/ES

Free regions

All regions are free of brucellosis.

Monitoring system

Sampling strategy

Samples are taken within the frame of monitoring system or in case of abort.

Examination of blood samples serologically:
- once per year 33% of holdings in the district - all animals over 24 months of age
- once per year all bovine animals over 24 months of age from all small holdings (farms of physical persons, who farm bovine animals for their own charge and do not introduce their products into the market)
- once per year bulls in insemination centre and bulls used for natural breeding and befeore basic selection of young breeding bulls,

Tests should be performed up to 12 months since the last examination.
- in case of abort animals are tested serologically and bacteriologically

Frequency of the sampling

Samples are taken once per year within the frame of monitoring system.
In case of abort, cows are tested two times in interval of 21 days.

Type of specimen taken

Blood, feetus, placenta or other tissues for bacteriological identification

Case definition

An animal is considered to be infected with Brucella spp. in case of positive serological test results and the epidemiological situation of the herd indicates the possibility that a brucella infection has been introduced to the herd and in case bacteriological isolation of the agent.

Diagnostic/analytical methods used

Diagnostic methods used are presented in the Annex 4 of the Ordinance of the Government of the Slovak republic No.280/2003 Coll. of 9 July 2003 on health problems affecting the trade with bovine animals and porcine animals – it is the full transposition of the Annex C of the Council Directive 64/ 432 / EEC

Serological tests:
Serum agglutination test
Complement fixation test
Rose bengal test
ELISA
Bacteriological tests:
Cultivation, isolation and identification of bacteria genus Brucella
Identification of bacteria (biotype):
Biochemical tests
Agglutination in monospecific antisera
Phage typing

Vaccination policy

In SR the vaccination at liquidation of brucellosis has been never used and only the radical or elimination method of eradication of a herd has been used.

Control program/mechanisms

The control program/strategies in place

In the Slovak Republic there is obligatory to notify abort cases at which the suspicion from being happened due to the brucellosis occurrence exists, and such cases are examined by the competent veterinary administration authority.
Each bovine animal suspicious of brucellosis infection shall be notified to the competent veterinary administration authority and is subject to the official epizootological examination for brucellosis consisting of minimum 2 serological blood tests, including complement fixation test (CFT) and microbiological examination of appropriate samples.
During the time of suspicion which lasts until the negative results of tests mentioned in the previous paragraph are obtained, in case of the herd of the origin or transit or the suspected animal and herds epizoologically connected with it, the status of officially recognized as brucellosis-free will be suspended.
Bovine animals moved into the herd must originate from herds officially recognized as brucellosis-free status, and in case of bovine animals older than 12 months, it must have the titer of antibodies less than 30 IU agglutination for ml in given serum-aglutination test performed in compliance with Annex 4 of the Ordinance of the Government of the Slovak Republic No. 280/2003 Coll. on health problems affecting the trade with bovine animals and porcine animals, or they reacted negatively on each other test approved in accordance with EU reqirements during 30 days before the date of introduction into the herd.

Measures in case of the positive findings or single cases

Each bovine animal suspicious of brucellosis is subject to the official epizootological examination for brucellosis consisting of minimum 2 serological blood tests, including complement fixation test (CFT) and microbiological

examination of appropriate samples.
During the time of suspicion which lasts until the negative results of tests mentioned in the previous paragraph are obtained, in case of the herd of the origin or transit or the suspected animal and herds epizoologically connected with it, the status of officially recognized as brucellosis-free will be suspended.

Notification system in place

In the Slovak Republic there is obligatory to notify abort cases at which the suspicion from being happened due to the brucellosis occurrence exists, and such cases are examined by the competent veterinary administration authority.
Each bovine animal suspicious of brucellosis infection shall be notified to the competent veterinary administration authority.

Results of the investigation

No case of brucellosis was recorded in year 2008.

B. Brucella melitensis in sheep

Status as officially free of ovine brucellosis during the reporting year

The entire country free

The whole territory Slovak Republic is officially free of sheep and goat brucellosis in accordance with Commission Decision No. 97/232/ES.
The disease has never been found in the Slovak Republic.

Free regions

All regions are free of ovine brucellosis.

Monitoring system

Sampling strategy

Examination of individual blood samples serologically
- once a year there are investigated 5% of female animals from each herd over 6 months of age
- once a year all breeding rams
- in case of abort, animals are tested both serologically and bacteriologically

Frequency of the sampling

- once a year according to „Plan of veterinary prevention and protection of state territory in 2008"
- blood samples of the animals in case of abort are tested two times in interval of 21 days

Type of specimen taken

Blood

Methods of sampling (description of sampling techniques)

Case definition

An animal is considered to be infected with Brucella spp. in case of positive serological test results and the epidemiological situation of the herd indicates the possibility that a brucella infection has been introduced to the herd and in case bacteriological isolation of the agent.

Diagnostic/analytical methods used

According to Council Directive 64/432/EEC and OIE diagnostics techniques:
Serological tests:
Serum agglutination test
Complement fixation test
Rose bengal test

ELISA
Bacteriological tests:
Cultivation, isolation and identification of bacteria genus Brucella
Identification of bacteria (biotype):
Biochemical tests
Agglutination in monospecific antisera
Phage typing

Vaccination policy

Vaccination is not performed.

Other preventive measures than vaccination in place

National compulsory monitoring programme was organised by the competent authority - State Veterinary and Food Administration of Slovak republic according to „Plan of veterinary prevention and protection of state territory in 2008.“

Control program/mechanisms

The control program/strategies in place

National compulsory monitoring programme was organised by the competent authority - State Veterinary and Food Administration of Slovak republic according to „Plan of veterinary prevention and protection of state territory in 2008.“

Notification system in place

In the Slovak Republic there is obligatory to notify abort cases at which the suspicion from being happened due to the brucellosis occurrence exists, and such cases are examined by the competent veterinary administration authority.

Results of the investigation

No case of ovine brucellosis was recorded in year 2008.

C. Brucella melitensis in goats

Status as officially free of caprine brucellosis during the reporting year

The entire country free

The whole territory Slovak Republic is officially free of sheep and goat brucellosis in accordance with Commission Decision No. 97/232/ES.
The disease has never been found in the Slovak Republic.

Free regions

All regions are free of caprine brucellosis.

Monitoring system

Sampling strategy

Examination of individual blood samples serologically
- once a year there are investigated 5% of female animals from each herd over 6 months of age
- once a year all breeding he-goats
- in case of abort, animals are tested both serologically and bacteriologically

Frequency of the sampling

- once a year according to „Plan of veterinary prevention and protection of state territory in 2008"
- blood samples of the animals in case of abort are tested two times in interval of 21 days

Type of specimen taken

Blood, feetus, placenta

Case definition

An animal is considered to be infected with Brucella spp. in case of positive serological test results and the epidemiological situation of the herd indicates the possibility that a brucella infection has been introduced to the herd and in case bacteriological isolation of the agent.

Diagnostic/analytical methods used

According to Council Directive 64/432/EEC and OIE diagnostics techniques:
Serological tests:
Serum agglutination test
Complement fixation test
Rose bengal test
ELISA
Bacteriological tests:
Cultivation, isolation and identification of bacteria genus Brucella
Identification of bacteria (biotype):

Biochemical tests
Agglutination in monospecific antisera
Phage typing

Vaccination policy

vaccination is not performed

Control program/mechanisms

The control program/strategies in place

National compulsory monitoring programme was organised by the competent authority - State Veterinary and Food Administration of Slovak republic according to „Plan of veterinary prevention and protection of state territory in 2008.“

Notification system in place

In the Slovak Republic there is obligatory to notify abort cases at which the suspicion from being happened due to the brucellosis occurrence exists, and such cases are examined by the competent veterinary administration authority.

Results of the investigation

No case of caprine brucellosis was recorded in year 2008.

Table Brucellosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Brucella spp.	B. abortus	B. melitensis	B. suis	Brucella spp., unspecified
Cattle (bovine animals) - in total (bacteriology)	SVI, SVFI	animal	718	0				
Cattle (bovine animals) - in total (serology)	SVI, SVFI	animal	116081	0				
Goats - in total (bacteriology)	SVI, SVFI	animal	7	0				
Goats - in total (serology)	SVI, SVFI	animal	869	0				
Pigs - in total (bacteriology)	SVI, SVFI	animal	170	0				
Pigs - in total (serology)	SVI, SVFI	animal	6657	0				
Sheep - in total (bacteriology)	SVI, SVFI	animal	223	0				
Sheep - in total (serology)	SVI, SVFI	animal	22460	0				
Solipeds, domestic - horses - in total (bacteriology)	SVI, SVFI	animal	12	0				
Solipeds, domestic - horses - in total (serology)	SVI, SVFI	animal	159	0				

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Surveillance						Investigations of suspect cases								
							Serological tests			Examination of bulk milk			Information about			Epidemiological investigation					
	Herds	Animals	Number of herds	%	Number of herds	%	Number of bovine herds tested	Number of animals tested	Number of infected herds	Number of bovine herds tested	Number of animals or pools tested	Number of infected herds	Number of notified abortions whatever cause	Number of isolations of Brucella infection	Number of abortions due to Brucella abortus	Number of animals tested with serological blood tests	Number of suspended herds	Number of positive animals		Number of animals examined microbiologically	Number of animals positive microbiologically
																		Sero logically	BST		
Bratislavsky kraj	93	14797	93	100	0	0	34	1917	0	0	0	0	59	0	0	59	0	0	0	3	0
Trnavsky kraj	567	87597	567	100	0	0	119	15926	0	0	0	0	560	0	0	560	0	0	0	98	0
Trenciansky kraj	499	51062	499	100	0	0	226	10538	0	0	0	0	149	0	0	149	0	0	0	17	0
Nitriansky kraj	782	75719	782	100	0	0	246	17898	0	0	0	0	374	0	0	269	0	0	0	23	0
Zilinsky kraj	2740	67770	2740	100	0	0	686	18736	0	0	0	0	251	0	0	212	0	0	0	1	0
Banskobystricky kraj	3012	80413	3012	100	0	0	1104	18738	0	0	0	0	420	0	0	420	0	0	0	85	0
Presovsky kraj	1632	80475	1632	100	0	0	742	16328	0	0	0	0	614	0	0	614	0	0	0	213	0
Kosicky kraj	1003	46964	1003	100	0	0	457	10272	0	0	0	0	246	0	0	246	0	0	0	136	0
Total	10328	504797	10328	100.0	0	0.0	3614	110353	0	0	0	0	2673	0	0	2529	0	0	0	576	0
Total - 1																					

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

Region	Total number of existing		Officially free herds		Infected herds		Surveillance			Investigations of suspect cases				
	Herds	Animals	Number of herds	%	Number of herds	%	Number of herds tested	Number of animals tested	Number of infected herds	Number of animals tested with serological blood tests	Number of animals positive serologically	Number of animals examined microbio logically	Number of animals positive microbio logically	Number of suspended herds
Bratislavsky kraj	15	313	9	60	0	0	9	30	0	0	0	0	0	0
Trnavsky kraj	57	1979	57	100	0	0	57	289	0	52	0	1	0	0
Trenciansky kraj	123	30277	121	98.37	0	0	119	1316	0	0	0	0	0	2
Nitriansky kraj	120	9678	120	100	0	0	91	510	0	0	0	0	0	0
Zilinsky kraj	1686	84057	1481	87.84	0	0	1480	6146	0	1553	0	4	0	19
Banskobystricky kraj	589	109605	589	100	0	0	589	5257	0	115	0	11	0	0
Presovsky kraj	367	74685	367	100	0	0	346	4298	0	373	0	74	0	0
Kosicky kraj	305	45880	305	100	0	0	304	3285	0	199	0	126	0	0
Total	3262	356474	3049	93.47	0	0.0	2995	21131	0	2292	0	216	0	21
Total - 1														

2.7 YERSINIOSIS

2.7.1 General evaluation of the national situation

A. Yersinia enterocolitica general evaluation

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

The monitoring system for Yersinia enterocolitica in the Slovak republic has not been adopted.

2.7.2 Yersiniosis in humans

2.7.3 Yersinia in foodstuffs

Table Yersinia in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Yersinia spp.	Y. enterocolitica	Yersinia spp., unspecified	Y. enterocolitica-O:3	Y. enterocolitica-O:9	Y. enterocolitica-unspecified
Meat from pig - minced meat	PHA	single	25 g	1	0					

2.7.4 Yersinia in animals

2.8 TRICHINELLOSIS

2.8.1 General evaluation of the national situation

A. Trichinellosis general evaluation

History of the disease and/or infection in the country

Trichinellosis has been occurring in Slovakia for many decades as a sporadic disease in humans or in a form of smaller or minor epidemics. Since 1962 in Slovakia there were totally 12 epidemics of trichinellosis, whereas the biggest was in the year 1968. Occurrence of antibodies, eosinofilia and clinical signs were serologically confirmed in 336 patients. The disease agent was typed Trichinella britovi, whereas clinical signs were mild and it did not come to a fatal case. Further epidemics in the year 2001 were caused by Trichinella spiralis.

Occurrence of trichinellosis in domestic pigs is only sporadic in animal bred for the own need. Trichinellosis circulates in wildlife out of which wild board population in the most risky for the transmission of the disease. Products from meat of these animals were not adequately heat-treated, were the most frequent source of the infection in humans

Out of types Trichinella spp. circulating in the nature it is mainly T.britovi and type T. spiralis occurs only rarely.

In the year 2003 on a pig farm T. pseudospiralis, was found by which pigs, cats, rats and also birds living on a farm were infected. The farm was gradually liquidated and measures were taken so as to prevent that trichinallae could not get into foodstuffs intended for human consumption.

Endemic areas of trichinellosis occurrence are East and Central Slovakia. In West Slovakia only rare occurance of a parasite in humans, wild boar population and in red fox is found so far.

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

In 2008, 1,137,235 susceptible animals, of which 4 were positive, were examined for the presence of larvae of Trichinella spp. in the Slovak Republic.

It was investigated 1 124 256 samples of domestic pigs. Two pigs with positive results in 2008 came from Roznava. One of them was killed in shambles and domestic consumption of insufficiently cooked and processed meat products had caused disease in humans.

In the year 2007 was no positive finding of Trichinella spp. in slaughtered pigs.

From wild animals was found 2 x T. britovi in two wild boars from all investigated. It presents 0.01% of positive samples. When compared with previous year is the decline in the number of positive wild boar - in 2007 the percentage was 0.04%.

In positive cases predominate Trichinella britovi.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases

In finding of Trichinella spp. in meat of slaughtered animals, the animals carcasses are confiscated and processed in processing (rendering) plant. Upon import of meat in which larvae of trichinellae could have been present (pigs, horses, game), the import either frozen meat or certificate on its examination for trichinellosis are required.

Recent actions taken to control the zoonoses

Control of meat of slaughtered animals is provided in compliance with EU legislation Commission Regulation 2075/2005.

2.8.2 Trichinellosis in humans

2.8.3 Trichinella in animals

A. Trichinella in pigs

Monitoring system

Sampling strategy

General

For official Trichinella examination the samples as a part of post mortem inspection are systematically taken at a slaughterhouse from each carcass.

Sampling strategy is in compliance with Commission Regulation 2075/2005.

Frequency of the sampling

General

Every pig slaughtered at slaughtery in Slovak republic is sampled in accredited laboratory according to Commission Regulation 2075/2005.

Every slaughtered wild boar intended to human consumption is sampled in compliance with Commission Decision 2075/2005. Samples are taken immediately after slaughgter.

Type of specimen taken

General

Specimen taken is in compliance with Commission Regulation 2075/2005. Diaphragmatic pillar at the place of transition into tendinous part is taken. In case of absence of diaphragmatic pillar the tongue muscle, masseter muscle or abdominal muscle are taken.

Methods of sampling (description of sampling techniques)

General

From the sampling site the samples are taken in amount of at least 1g in fattening pigs from the diaphragmatic pillar at the place of transition into tendinous part and 2g in boars and sows from the equal place. If a predilection place is not available the alternative sample shall be taken. An alternative sample are 2g taken from the costal or sternal part of the diaphraghm or from the masseter, tongue or abdominal muscles.

Case definition

General

Positive results - in case of finding Trichinella spp.

Diagnostic/analytical methods used

General

The method of magnetic mixing in digestion of pooled samples in compliance with Commission Regulation 2075/2005.

Control program/mechanisms

The control program/strategies in place

In the Slovak Republic the monitoring of trichinellosis is performed as a part of post mortem inspection by taking the samples from the diaphragmatic pillar of each slaughter pig at a slaughterhouse after slaughter. The samples are taken within official controls and in compliance with Regulation (EC) 854/2004 Annex I, Section IV, Chapter IX c. Point 2. and special legal rule for official controls of Trichinella in the meat with Commission Regulation 2075/2005.

Recent actions taken to control the zoonoses

Carcasses and parts of carcasses and slaughter by-products containing the striated musculature from carcasses from which the samples for Trichinella examination were taken, must not leave the premises prior to completion the examination with a negative result. The parts of carcasses not containing the striated musculature are not subject to restriction.

In the year 2007 the reporting duty of performing home slaughters was introduced. Based on the risk assessment of trichinellosis occurrence in pigs slaughtered in a breeder for domestic consumption and based on results from the previous examinations and monitoring, including wild animals, the samplings were limited only to areas with a positive finding of Trichinella sp. in wild animals.

Measures in case of the positive findings or single cases

All positive carcasses and parts shall be judged as unfit for human consumption and removed as a by-product of Category II.

The contingency plan in place

Each DVFA worked out the contingency plan pursuant to Regulation (EC) No.2075/2005 with an overview of measures which shall be taken if the test for Trichinella reveals a positive result.

Notification system in place

The official veterinarian shall notify without any delay each confirmed or suspect finding of Trichinella to the competent DVFA and SVFA (notifiable disease).

Results of the investigation including description of the positive cases and the

Positive or dubious results:
if the results examined by the reference method are positive or dubious, the further samples from each carcass that was in the original pooled sample, shall be taken. These samples shall be mixed to pooled samples to doses 100g/ from 5 pigs. Following detection which pooled sample from 5 pigs is positive or dubious, they shall be taken from the individual pigs and each shall be examined individually by the standard reference digestion method.
The examination of samples is carried out in official laboratories of the District Veterinary and Food Administrations on approved slaughterhouses. All positive samples shall be sent in 90% ethanol into the National Reference Laboratory.

Pigs were fed with the rests from the household and store mixture from a commercial network. On the farm there were observed rats. In the epidemiological measures blood was collected from other pigs in the village (47 pigs) and serology on SVFI Bratislava. The test was positive in one case and then the positive pig was slaughtered and tested by method of magnetic mixing with digestion of pooled samples according to the Commission Regulation (EC). 2075/2005. The result was positive. Parasitological Institute of SAS identified this species as Trichinella britovi.

Relevance of the findings in animals to findings in foodstuffs and to human cases

The meat from the animals infected with trichinella shall be judged as unfit for human consumption

B. Trichinella in horses

Monitoring system

Sampling strategy

For official Trichinella examination the samples as a part of post mortem inspection are systematically taken at a slaughterhouse from each carcass.

Frequency of the sampling

every slaughtered animal is sampled

Type of specimen taken

musculus masseter or diapraghma muscle

Methods of sampling (description of sampling techniques)

taking over 10g of the specimen

Diagnostic/analytical methods used

The method of magnetic mixing in digestion of pooled samples

Results of the investigation including the origin of the positive animals

In 2008, 13 samples in horses were investigated. All samples were negative.

Control program/mechanisms

The control program/strategies in place

In the Slovak Republic the monitoring of trichinellosis is performed as a part of post mortem inspection in all solipeds on a slaughterhouse after slaughter. The samples are taken within official controls and in compliance with Regulation (EC) 854/2004 Annex I, Section IV, Chapter IX c. Point 2. and special legal rule for official controls of Trichinella in the meat with Commission Regulation 2075/2005.

Recent actions taken to control the zoonoses

Carcasses and parts of carcasses and slaughter by-products containing the striated musculature from carcasses from which the samples for Trichinella examination were taken, must not leave the premises prior to completion the examination with a negative result. The parts of carcasses not containing the striated musculature are not subject to restriction.

Measures in case of the positive findings or single cases

All positive carcasses and parts shall be judged as unfit for human consumption and removed as a by-product of Category II.

Notification system in place

The official veterinarian shall notify without any delay each confirmed or suspect finding of Trichinella to the competent DVFA and SVFA (notifiable disease).

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

At present no positive cases of trichinellosis in horses have been recorded.

Relevance of the findings in animals to findings in foodstuffs and to human cases

The meat from the animals infected with trichinella shall be judged as unfit for human consumption.

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total units positive for Trichinella spp.	T. spiralis	T. britovi	Trichinella spp., unspecified
Badgers	SVFI, SVFI,	animal	1	0			
Bears	SVFI, SVFI,	animal	17	0			
Deer - wild - roe deer	SVFI, SVFI,	animal	1	0			
Pigs	SVFI, SVFI,	animal	1124256	2		2	
Solipeds, domestic - horses	DVFA	animal	13	0			
Wild boars - wild	SVFI, SVFI,	animal	12960	2		2	

2.9 ECHINOCOCCOSIS

2.9.1 General evaluation of the national situation

A. Echinococcus spp. general evaluation

History of the disease and/or infection in the country

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

In 2008 there were examined 997 624 animals in the Slovak Republic for the presence of adult Echinococcus spp. and evolutionary stages, of which 181 were positive.
Larvocysts of echinococcus (E.granulosus) were detected in cattle, sheep, goats and also in pigs. E.granulosus in cattle increased from 1 case in 2003 to 45 cases in 2004 and decreased to 21 cases in 2005. In 2007 there were only 2 cases and 4 cases in 2008 (0,005 %).
In sheep and goats totally 1951 cases were found out in 2003, in 2004 there were only 26 cases, in 2005 there were only 16 cases and in 2006 only 2 cases. In 2007 there was again an increase in the number of positive findings as much as 121 cases and in 2008 only 3 cases.
In pigs the number of positive cases decreases little by little from 1681 in 2003 to 1313 in 2004, in 2005 totally 537 cases and in 2007 only 336 cases were recorded (0,03 %).
In 2008 there were found 174 positive findings of Echinococcus spp. from 913 655 animals tested (0.02%).

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases

The eggs of Echinococcus spp. are spread through definite hosts, dogs, foxes and other carnivora. Contaminated environment, forest fruits, vegetable and non-compliance with hygiene principles are the main risk factors of transmission of this zoonosis. Regular controls of carnivore faeces focused on detection of the presence of adult tapeworms and controls focused on the presence of larval forms in the meat of animals slaughtered in fresh meat establishments are important for determination of risk areas.

Recent actions taken to control the zoonoses

Meat of animals slaughtered in slaughterhouses is subject to the examination for the presence of Echinococcus larvocysts within the veterinary inspection in compliance with Regulation (EC) No 854/2004 of the European Parliament and

of the Council of 29 April 2004 laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption.
Routine diagnostics of dog and other carnivore faeces includes also the examination for the presence of adult tapeworm Echinococcus.

Frequency of the sampling
All animals considered as intermediate hosts, slaughtered in slaughterhouses of the SR, are examined for the presence of Echinococcus larvocysts.

Type of specimen taken
Faeces or intestine of definite hosts, cysts from intermediate hosts.

Methods of sampling (description of sampling techniques)
Examination of the meat of animals slaughtered in slaughterhouses for the presence of larvocysts by adspection method.
Fox intestines are sent after the examination for rabies into a laboratory in a frozen state (at -18°C).
Fresh animal faeces is sent directly to a laboratory.

Case definition / definition of a positive finding
The sample is considered to be positive in case of finding tapeworms Echinococcus sp. in a definite host or Echinococcus larvocyst in intermediate host.

Diagnostic / analytical methods
The meat of slaughtered animals - by adspection method, microscopical examination of larvocyst content
Faeces (intestine content) of carnivora - microscopical examination, flotation examination, PCR

Measures in case of the positive findings or single cases
The meat of positive animals is excluded from the food chain.

2.9.2 Echinococcosis in humans

A. Echinococcus spp. in humans

Case definition

Clinical picture compatible with echinococcosis, which may produce any several clinical syndromes, varying with cyst size and location

Diagnostic/analytical methods used

Histopathologia

A combination of imaging techniques and serological tests(e.g. indirect haemaglutination, immunodiffusion, immunoblot assay

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

Sporadic or rare cases.

2.9.3 Echinococcus in animals

Table Echinococcus in animals

	Source of information	Sampling unit	Units tested	Total units positive for Echinococcus spp.	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Cats	SVI, SVFI,	animal	633	0			
Cattle (bovine animals)	SVI, SVFI,	animal	72829	4			4
Dogs	SVI, SVFI,	animal	1378	0			
Pigs	SVI, SVFI,	animal	913655	174			174
Sheep	SVI, SVFI,	animal	9129	3		1	2

2.10 TOXOPLASMOSIS

2.10.1 General evaluation of the national situation

A. Toxoplasmosis general evaluation

History of the disease and/or infection in the country

On a side note to history of serological monitoring of toxoplasmosis in the SR, we show the total number of tested samples from different animals, number of seroreagents and percentage of infestation

year	number of sample	number of animals	%
1991	2.865	86	1,05
1992	5.734	270	4,7
1993	5.001	333	6,6
1994	1.646	228	13,8
1995	1.992	187	9,4
1996	1.173	180	15,3
1997	4.033	484	12,0
1998	6.737	595	8,8
1999	3.575	240	6,7
2000	2.912	119	4,0
2001	425	112	26,3
2002	490	101	20,6
2003	417	143	34,2
2004	450	152	33,7
2005	310	105	33,8
2006	364	112	30,7
2007	575	162	28,2
2008	362	95	26,2

Since 2001, the percentage of infestation has increased and a considerable change in the pattern of samples has been recorded. In the past, most samples came from bovine and pig holdings, these categories of animals being gradually misplaced, resulting in a turnover in favour of testing pet animals and small ruminants.

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

In the Slovak Republic, there is no official monitoring program for diagnostics of toxoplasmosis and this zoonosis is not under notifiable diseases.
The overview of epizootological situation enables to elaborate disease surveillance for the SR.

In 2008, there were investigated 362 samples for toxolasmosis in totall.
Thamples from dogs presented 39%, from goats 37,5% and from cats 19,7% from total.
the highest positivity was found in dogs (40%), in goats (38%) and cats (20%).

Blood sampling is conducted by private veterinarians in regional veterinary ambulances either on request of animal owners or in connection with a targeted suspicion of the disease. It is always a matter of individual sampling, not centrally managed and has nothing to do with official samples.

Sampling frequencies are not of a continuous sequence; they are set by the current epizootological situation and on individual requests of breeders of domestic and farm animals.

Blood samples for antibody confirmation are drawn into syringes not containing EDTA, whereby using serum for testing. One of the most extensively used methods within the basic testing is a complement fixation test (CFT) whose results indicate good reproducibility, and in repeated testing they illustrate evident dynamics of specific antibodies. There are also used immunoenzymatic tests for detection of infection phases in laboratories. Direct evidence for the agent is supported by the PCR method; however the method is not routinely used in animal diagnostics.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases

The aim of selective sampling is to prevent disease within the animal breeding in shared households as well as preventive examinations of farm animals intended for human consumption. Before all others, there is a major interest in testing sheep and goats which is related to establishing backyard farms in the countryside and followed by consumption of products thereof.

The aim of suspect sampling is testing for dogs and cats because of:
- disease occurrence in humans under households and after having undergone treatment for the disease;
- presence of pregnant women;
- abortion and low viable animal fetuses.

Recent actions taken to control the zoonoses

The preventive measures to be taken depend on the definitive host. Because most cats become infected with tissue cysts and to avoid this fact, cats should

be fed dry, heat-treated granules or cooked food. Setting priorities for human population should be keeping hands clean and not eating any raw meat.

2.10.2 Toxoplasmosis in humans

2.10.3 Toxoplasma in animals

Table Toxoplasma in animals

	Source of information	Sampling unit	Units tested	Total units positive for Toxoplasma	T. gondii
Cats	SVI, SVFI	animal	172	34	34
Cattle (bovine animals)	SVI, SVFI	animal	48	5	5
Deer - wild - fallow deer	SVI, SVFI	animal	1	0	
Dogs	SVI, SVFI	animal	123	48	48
Goats	SVI, SVFI	animal	16	6	6
Sheep	SVI, SVFI	animal	2	2	2

2.11 RABIES

2.11.1 General evaluation of the national situation

A. Rabies general evaluation

History of the disease and/or infection in the country

The rabies has been well known on the territory of current Slovak Republic for many years. There are existing records originating at the end of 19th century. The first legal provisions about transmissible diseases are recorded in the Article 7 of the Ugrian collection of law from 1888, adopted in the ancient Austrian-Ugrian Kingdom, the part of which was also the territory of the Slovak Republic. These provisions were in force till the beginning of the 50Â´s.

After the World War II, the National Assembly of the Czechoslovakia adopted in 1950 the Act No. 187/1950 on improvement of the agriculture, in which the state veterinary service, responsible for all veterinary tasks, including animal health tasks and eradication programmes was established. This act laid down the obligation of notification some diseases, including rabies. However, based on information from the available materials, we may deduce, that the obligatory notification was already laid down in the Ugrian collection of law.

The incidence of rabies was after the World War II roughly about of 20% of all tested animals. In the time period of 1953-1974 11.329 animals were tested, out of which 2.268 were rabies positive. The fox incidence presented 70% of all positive animals, what correlated with data collected before the first oral antirabic foxâ€™s vaccination programme.

The first oral antirabic foxâ€™s vaccination programme started in 1994. This programme ran in two campaigns, one in spring, the other one in autumn. Fix-wing airplane and by hand application were used as well. For this programme the vaccine baits containing the virus strain Vnukovo 32/107 and SAD Bern was used. In consequence of lack of money that programme was stopped after sixth campaign in 1998.

The epidemiological situation of the rabies in wildlife according to established oral vaccination programme was markedly on the mend in 2000 and 2001. Consequently the rise of the immunity status of the fox population has increased the fox density. The fox populationâ€™s density estimated on the number of hunted animals during the programme has been increased from 19.500 to 23.000 foxes in 2001 and very strong in the second half of year 2002 and the first half of year 2003. The number of hunted fox in 2002 was 22.251 animals, what encourages us to estimate the number of fox population of 28 to 30 thousand of animals â€“ 0,57 â€“ 0,61 fox per square kilometre. This stay of fox population has been related to the comedown of the favourable progress of the rabies situation. During this fast growth of the fox population the increase of

rabies positive foxes in such level at first time since beginning the programme has been recorded (107 positive foxes in the 1. quarter of 2003)

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

Rabies is in the Slovak Republic is an endemic disease occurring in the silvatic form with decreasing occurrence and the main host and vector species is red fox.

In 2008 there was no positive case of rabies detected in the Slovak Republic.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases

the relevance in the first case is low (carnivores â€“ non-food animals) in the second case the animals present the main risk to human rabies

Recent actions taken to control the zoonoses

National programme of rabies eradication in the Slovak Republic, mandatory vaccination in domestic carnivores as well as oral antirabic vaccination in wildlife red fox, identification and registration of pets, movement control, laboratory diagnosis of each suspected domestic animal and control of fulfillment of National programme by veterinary database.

2.11.2 Rabies in humans

A. Rabies in humans

Reporting system in place for the human cases

Mandatory

Case definition

Rabies is an acute encephalomyelitis that almost always progress to coma or death within 10 days after the first symptom.

Diagnostic/analytical methods used

detection of direct fluorescent antibody of viral antigens in a clinical specimen
Detection of rabies nucleic acid in clinical specimen
Isolation of rabies virus from saliva, cerebrospinal fluid, or central nervous system tissue
identification of a rabies-neutralising antibody titre in the serum or cerebrospinal fluid of an unvaccinated person

History of the disease and/or infection in the country

Disease is reported many years.

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

Last case was reported in 1990 after contact with fox

2.11.3 Lyssavirus (rabies) in animals

A. Rabies in dogs

Monitoring system

Sampling strategy

Samples for examination are sent as soon as possible. Before sending it is necessary to store them at temperature up to 40 C, in order to be adequately cooled.
The sample of the whole animal is sent wrapped in PVC bag put into good closed, firm packing with sufficient amount of absorption material preventing leakage of the contents.
Sample of the head with first vertebra is sent enwrapped into fabric moistened by 0,5% solution of formaline or vinegar. Such enwrapped sample is put into impermeable packing (PVC bag) and then into a firm packing with absorption material.
Sample must be identifiable also inside of the packing. Accompanying document is attached to the sample so as to prevent its contamination and at taking over the sample in approved veterinary laboratories it could be removed without handling the sample.

Diagnostics is carried out by the State Veterinary and Food Institutes. The State Veterinary Institute Zvolen is a reference laboratory of rabies.

Frequency of the sampling

Permanent sampling performed in indicated cases all year round.

Type of specimen taken

Organs/tissues: whole animal,head with first vertebra

Methods of sampling (description of sampling techniques)

Samples for examination are sent as soon as possible. Before sending it is necessary to store them at temperature up to 40 C, in order to be adequately cooled.
The sample of the whole animal is sent wrapped in PVC bag put into good closed, firm packing with sufficient amount of absorption material preventing leakage of the contents and accompanying with documentation are sent to the State Veterinary Institutes where the samples of brain are taken for investigation. Sample of the head with first vertebra is sent enwrapped into fabric moistened by 0,5% solution of formaline or vinegar. Such enwrapped sample is put into impermeable packing (PVC bag) and then into a firm packing with absorption material.

Case definition

- clinical signs of rabies in animal with anamnesis of contact with rabid animal or human, or unknown animal, which might be rabid, or without anamnesis and laboratory confirmation of rabies

A case of Rabies is defined as a detection of rabies virus antigen or the isolation of rabies virus in the brain of tested animal.

Diagnostic/analytical methods used

Other: ELISA,FAVN,FAT,MIT,RT-PCR,isolation of agent, biological examination on mouses

Vaccination policy

mandatory antirabic vaccination of domestic carnivores over three months of age with annual revaccination

Other preventive measures than vaccination in place

movement control system and system of shelters for stray animals

Control program/mechanisms

The control program/strategies in place

National programme of rabies eradication in the Slovak Republic/mandatory vaccination in domestic carnivores as well as oral antirabic vaccination in wildlife red fox, identification and registration of pets, movement control, laboratory diagnosis of each suspected domestic animal and control of fulfillment of National programme by veterinary database.

The sampling is performed: in suspected animals (showing abnormal behavior), in animals which ijured people,in animals found dead, in foxes submited for control of oral vaccination.

Recent actions taken to control the zoonoses

mandatory notification of cases and suspicions, mandatory antirabic vaccination and movement control and co-operation between animal heath and human health authorities

Suggestions to the Community for the actions to be taken

establishing Community register of pet animals for which the Pet Passport has been issued, by which will be the competent authorities able to verify validity of Pet Passport and antirabic vaccination maybe similar to Slovak central register of pets

Measures in case of the positive findings or single cases

The measures are ordered by the District Veterinary and Food Administration in compliance with the Â§ 8, para 3, letter f) of the Act No. 488/2002 Coll. ll.
The respective DVFA at suspicion of rabies occurrence in domestic animals orders to natural and legal persons the measures for control of animal diseases and determines the date for their fulfilment, by which

a) it orders

1. catching of stray animals by professionally eligible natural or legal persons which means a person who following passing an examination before board of examiners finished the training Catching of stray or lost animals at the Institute for Postgraduate Studies in KoÅ¡ice and obtained a Certificate on professional eligibility for the performance of catching of lost, abandoned and stray animals or by other person performing this activity under the supervision of professionally eligible natural or legal person,
2. disinfection of the place of killing or death of rabid animal and also thorough disinfection and incineration of all items which could have come into contact with rabid animal,
3. safe disposal of dead and killed animals by rendering plant,
4. isolation and monitoring of all susceptible animals which came or could have come into contact with an animal suspicious of rabies,
5. safe disposal of milk obtained from cows suspicious of rabies and prohibition of the use of products of warm-blooded animals for human consumption and for feeding purposes if these animal came or could have come into contact with an animal suspicious of rabies,
6. obligation to report each case of exposition of people and animals, behaviour changes in domestic animals, death of wildlife in an outbreak and in its nearness,

b) it prohibits

1. movement and collection of susceptible animal species,
2. free movement of susceptible animals in an outbreak,

The respective District Veterinary and Food Administration in case of non-confirmation of rabies occurrence lifts the measures for disease control.

The respective District Veterinary and Food Administration at confirmation of rabies occurrence in domestic animals extends the previous measures for disease control by further measures for disease control and determines to the natural and legal persons the date for their fulfilment by which

a) it defines an rabies outbreak,
b) it orders in an outbreak
1. its marking with warning tables with writing â€žCAUTION RABIES !â€
2. killing of susceptible animals which came into contact with an animal positive to the presence of rabies antigen,
3. to perform the registration of dogs and cats and protective vaccination of dogs, cats and other carnivore over 3 months of age which have not been vaccinated against rabies so far or since the last antirabic vaccination the period longer

than 1 year elapsed, provided that they did not come into contact or they did not have the possibility to come into contact with an animal positive to the presence of rabies antigen, 4. to perform protective vaccination of susceptible domestic animals; it will permit to use milk and other products obtained from them for the human consumption and feeding purposes only following gaining the immunity (this period will be stated based on the date of vaccine manufacturer).

Notification system in place

Based on the Act No. 39/2007 Coll. ll. each natural or legal person authorized to dispose of live animals is obliged to notify without delay to the veterinary administration authority any suspicion of the disease and death of any animal and to allow examination of such animal.
In case of failing to report any suspicion of the disease, an animals death or failing to allow its examination, is committed.

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

Rabies in the Slovak Republic is an endemic disease occurring in the silvatic form with decreasing occurrence and the main host and vector species is red fox.

In 2008 there was no case of rabies detected in the Slovak Republic.

Table Rabies in animals

	Source of information	Sampling unit	Units tested	Total units positive for Lyssavirus (rabies)	Unspecified Lyssavirus	Classical rabies virus (genotype 1)	European Bat Lyssavirus - unspecified
Badgers - wild	SVI, SVFI	animal	9	0			
Bats - wild	SVI, SVFI	animal	2	0			
Cats	SVI, SVFI	animal	205	0			
Cattle (bovine animals)	SVI, SVFI	animal	4	0			
Deer - wild - red deer	SVI, SVFI	animal	2	0			
Deer - wild - roe deer	SVI, SVFI	animal	5	0			
Dogs	SVI, SVFI	animal	280	0			
Foxes - wild	SVI, SVFI	animal	3422	0			
Goats	SVI, SVFI	animal	1	0			
Hamsters [1)]	SVI, SVFI	animal	8	0			
Hares	SVI, SVFI	animal	1	0			
Hedgehogs	SVI, SVFI	animal	2	0			
Lynx	SVI, SVFI	animal	3	0			
Marten - wild	SVI, SVFI	animal	13	0			
Mice	SVI, SVFI	animal	4	0			
Moles	SVI, SVFI	animal	1	0			
Other animals	SVI, SVFI	animal	7	0			
Otter	SVI, SVFI	animal	1	0			
Pigs	SVI, SVFI	animal	1	0			
Polecats	SVI, SVFI	animal	2	0			
Rabbits	SVI, SVFI	animal	1	0			

Table Rabies in animals

	Source of information	Sampling unit	Units tested	Total units positive for Lyssavirus (rabies)	Unspecified Lyssavirus	Classical rabies virus (genotype 1)	European Bat Lyssavirus - unspecified
Rats	SVI, SVFI	animal	12	0			
Sheep	SVI, SVFI	animal	4	0			
Squirrels	SVI, SVFI	animal	2	0			
Wild animals [2)]	SVI, SVFI	animal	9	0			
Wild boars - wild	SVI, SVFI	animal	7	0			
Wolves - wild	SVI, SVFI	animal	1	0			

Comments:

[1)] hamsters, guinea pigs
[2)] other wildlife

2.12 Q-FEVER

2.12.1 General evaluation of the national situation

2.12.2 Coxiella (Q-fever) in animals

Table Coxiella burnetii (Q fever) in animals

	Source of information	Sampling unit	Units tested	Total units positive for Coxiella (Q-fever)	C. burnetii
Cattle (bovine animals)	SVI, SVFI	animal	5786	281	281
Dogs	SVI, SVFI	animal	2	0	
Goats	SVI, SVFI	animal	130	2	2
Pigs	SVI, SVFI	animal	4	0	
Sheep	SVI, SVFI	animal	1476	0	
Zoo animals, all	SVI, SVFI	animal	1	0	

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1 ENTEROCOCCUS, NON-PATHOGENIC

3.1.1 General evaluation of the national situation

3.2 ESCHERICHIA COLI, NON-PATHOGENIC

3.2.1 General evaluation of the national situation

A. Escherichia coli general evaluation

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

The monitoring system for Antimicrobial resistance in E.coli in the Slovak republic has not been adopted.

3.2.2 Antimicrobial resistance in Escherichia coli, non-pathogenic

Table Antimicrobial susceptibility testing of E. coli in animals

E. coli		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Other animals	
Isolates out of a monitoring program (yes/no)		no		no		no		no		no	
Number of isolates available in the laboratory		13		5		107				22	
Antimicrobials:		N	n	N	n	N	n	N	n	N	n
Aminoglycosides	Gentamicin	13	8	5	2	107	107			22	20
	Neomycin	13	9	5	1	107	72			22	16
	Streptomycin	13	11	5	4	107	95			22	22
Cephalosporins	3rd generation cephalosporins	13	13	5	5	107	105			22	21
Fluoroquinolones	Enrofloxacin					107	12				
Penicillins	Ampicillin									22	22
	Penicillin	13	13	5	5	107	107				
Resistant to 1 antimicrobial	Resistant to 1 antimicrobial	13	13	5	5	107	107			22	22
Resistant to 2 antimicrobials	Resistant to 2 antimicrobials	13	13	5	5	107	107			22	22
Resistant to 3 antimicrobials	Resistant to 3 antimicrobials	13	13	5	5	107	107			22	22
Resistant to 4 antimicrobials	Resistant to 4 antimicrobials	13	11	5	2	107	100			22	5
Resistant to >4 antimicrobials	Resistant to >4 antimicrobials					107	23			22	3
Tetracyclines	Tetracyclin	13	9	5	2	107	105			22	17

Table Breakpoints used for antimicrobial susceptibility testing

Test Method Used	
Disc diffusion	◉
Agar dilution	○
Broth dilution	○
E-test	○

Standards used for testing
NCCLS

			Breakpoint concentration (microg/ml)			Range tested concentration (microg/ml)		Disk content	Breakpoint Zone diameter (mm)		
		Standard for breakpoint	Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Aminoglycosides	**Gentamicin**	NCCLS						10	15	13	12
	Neomycin	NCLLS						10	15	13	11
	Streptomycin	NCCLS						25	15	13	11
Cephalosporins	**3rd generation cephalosporins**	NCCLS						30	23	18	14
Fluoroquinolones	**Enrofloxacin**	NCCLS						5	21	18	15
Tetracyclines	**Tetracyclin**	NCCLS						30	19	17	14

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1 HISTAMINE

4.1.1 General evaluation of the national situation

A. Histamine General evaluation

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

All samples of foodstuffs were taken according The Commission Decision 2073/2005 and the direction of State Veterinary and Food Administration and according to work out a plan taking of samples

4.1.2 Histamine in foodstuffs

A. Histamine in foodstuffs

Monitoring system

Diagnostic/analytical methods used

HPLC

Preventive measures in place

in case of pass limit for histamine in foodstuff - retire from market network as a unfit for human consumption

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

In 2008 there were investigated 75 samples of fish products for presence of histamine. 74 samples were conform and 1 of matjes was over limit 100 mg/kg.

Table Histamine in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units in non-conformity	<= 100 mg/kg	>100 - <= 200 mg/kg	>200 - <= 400 mg/kg	> 400 mg/kg
Fish - Fishery products from fish species associated with a high amount of histidine - not enzyme maturated	SVFI	batch	10 g	65	1	64	1		
Fish - Fishery products which have undergone enzyme maturation treatment in brine	SVFI	batch	10 g	10	0	10			

4.2 ENTEROBACTER SAKAZAKII

4.2.1 General evaluation of the national situation

4.2.2 Enterobacter sakazakii in foodstuffs

A. Enterobacter sakazakii in foodstuffs

Monitoring system

Sampling strategy

Public Health Authority of the Slovak Republic and District Public Health Authorities carry out official food control according Act on foodstuffs 152/1995 which set the target control of food. Samples taken in compliance with this target plan are investigated in acredited laboratories for analyses for Enterobacter sakazakii.
Samples are taken from pharmacies, distribution chain and during producing.

Frequency of the sampling

- in accordance with target plan

Type of specimen taken

Other: foodstuffs for children, infant formula

Diagnostic/analytical methods used

ISO/DTS 22964 Detection of Enterobacter sakazakii

Results of the investigation

All investigated samples were negative for Enterobacter sakazakii.

Table Enterobacter sakazakii in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Enterobacter sakazakii	E. sakazakii
Infant formula	PHA	batch	10. 25g	1022	0	

4.3 STAPHYLOCOCCAL ENTEROTOXINS

4.3.1 General evaluation of the national situation

A. Staphylococcal enterotoxins general evaluation

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

All obtained data originate from the State Veterinary and Food Institutes, the State Veterinary Institute and Public Health Authorities in Slovakia. The statistical overview was elaborated by the National reference laboratory for Coagulase positive Staphylococci, including Staphylococcus aureus in Dolny Kubin. Samples comprised of official samples taken by inspectors of veterinary and food administrations and public health authorities according to the valid rules for the year. All samples were examined by valid international methods for determination of number of coagulase positive staphylococci (STN EN ISO 6888-1 and 6888-2) and the presence of enterotoxins (Official methods for laboratory diagnostics of food and feed, Part Microbiology: M15, M41, M50 and the European screening method - May 2006 as amended and supplemented - November 2007). The samples comprised of one sampling unit or 5 sampling units according to requirements of an applicant and according to the quantity of sample taken.

Most data concerning the genus Staphylococcus and staphylococcal enterotoxins have a link with milk and milk products and processed food. Among the most frequent commodities containing exceeding numbers of coagulase positive staphylococci belonged sheep cheeses, ready-to-eat salads and dishes.

Recent actions taken to control the hazard

In case of positive finding all foodstuffs are judged as unfit for human consumption.

4.3.2 Staphylococcal enterotoxins in foodstuffs

A. Staphylococcal enterotoxins in foodstuffs

Monitoring system

Frequency of the sampling

according to work out a plan taking of samples

Type of specimen taken

Other: according Commission Decision 2075/2005, cheeses

Definition of positive finding

demonstration of presence of enterotoxin

Diagnostic/analytical methods used

ELISA

Preventive measures in place

retire of foodstuffs from market network

Notification system in place

Rapid Alert System, competent District Veterinary and Food Administration report positive finding to State Veterinary and Food Administration of the Slovak Republic and all District Veterinary and Food Administrations.

Relevance of the findings in foodstuffs to human cases (as a source of human

The risk of occurrence is low, in rare cases.

Table Staphylococcal enterotoxins in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Staphylococcal enterotoxins
Cheeses made from sheep's milk - soft and semi -soft - made from pasteurised milk	PHA	single	10 g	1	1
Cheeses made from sheep's milk - soft and semi -soft - made from raw or low heat-treated milk	SVFI	batch	25 g	117	8
Confectionery products and pastes	PHA	single	10 g	22	3
Dairy products (excluding cheeses) - ice-cream	PHA	single	10 g	1	0
Fishery products, unspecified - raw - frozen	SVFI	batch	25 g	4	1
Infant formula	PHA	single	10 ml	157	2
Meat from bovine animals - meat products - raw but intended to be eaten cooked - frozen	PHA	single	10 g	1	0
Meat from pig - meat products - cooked ham	SVFI	batch	25 g	1	0
Other processed food products and prepared dishes - unspecified - ready-to-eat foods	PHA	single	10 g	21	7
Ready-to-eat salads - containing mayonnaise	PHA	single	25 g, 10 g	2	2

5. FOODBORNE

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.

A. Foodborne outbreaks

System in place for identification, epidemological investigations and reporting of

Food-borne outbreaks are reported by physicians on the Public Health Institutes on the regional level to the department of Epidemiology. Regional epidemiologist provide investigation , organise antiepidemic measure including investigation of foods which are suspected as factor of transmission.

Description of the types of outbreaks covered by the reporting:

There are reported all types of epidemics: small epidemics included family outbreaks (2-9 cases) and general outbreaks (10 and more cases).

All verified and possible foodborne outbreaks are reported.

National evaluation of the reported outbreaks in the country:

Trends in numbers of outbreaks and numbers of human cases involved

In 2008 there were recorded 75 outbreaks.

From this number:
food-borne viruses – 32%,
unknown causative agent – 31%
salmonellosis – 28%.

From 75 outbreaks, there were 9 verified outbreaks (total 236 cases).
Outbreaks of salmonellosis: There were reported 259 small outbreaks (1-9 cases in one outbreak) included family outbreaks, when were affected 771 persons.

In 2007 there were recorded 114 epidemics. Out of these epidemics 97 cases were posssible and 17 cases were verified outbreaks.

Food-borne viruses: 32,5%
Salmonella : 29,8%
Unknown causative agent: 25,4%

Salmonella:
- 300 small epidemics (1-9 cases in one outbreak), when were affected 1133 persons.
- 34 general outbreaks (from 10 to 143 cases in one outbreak), when were affected 1039 persons.
verified: 8 outbreaks, 284 persons

Staphylococcus enterotoxin:
Total: 7 outbreaks, 241 persons

Within one epidemic were recorded the most 75 cases.
verified: 5 outbreaks, 186 persons

Enterobacter: 2 oubreaks, verified

Citrobacter: 1 outberak, verified

Bacillus cereus: 1 outbreak, verified

Trichinellosis: 1 outbreak , possible

Food-borne viruses: 37 outbreaks, 1428 persons, possible outbreaks
Within one epidemic were recorded the most 151 cases.

Unknown causative agent: 29 outbreaks, 747 persons
Within one epidemic were recorded the most 125 cases.

Number of epidemics decrease. In 2006 there were recorded :
- 429 small epidemics of salmonelosis (1-9 cases in one outbreak), when were affected 1402 persons.
- 23 general outbreaks of salmonelosis (10 and more cases in one outbreak), when were affected 457 persons.
Within one epidemic were recorded the most 68 cases.

Relevance of the different causative agents, food categories and the agent/food category combinations

The main causative agent in outbreak of salmonellosis is Salmonella enteritidis. Outbreaks caused by Salmonella typhimurium are rare. The most risky are finished foodstuff from raw eggs. Foodborne outbreaks caused by Staphylococcus aureus, Campylobacter and Trichinella are rare.

Relevance of the different type of places of food production and preparation in outbreaks

Salmonella enteritidis – mainly households (family celebrations), canteens and school canteens
Staphylococcus aureus – school canteens
Campylobacter jejuni – household
Foodborne viruses – hospital/medical care facilities and nursery houses

Evaluation of the severity and clinical picture of the human cases

- within outbreak most frequently clinical signs in clinical picture of affected patients

No death cases were recorded. In 9 verified outbreaks were reported 236 cases (from this number: 49 cases were hospitalized).

Descriptions of single outbreaks of special interest

- diagnosis, etiological agens and phagetype
- number of person: exposed, infected, hospitalized and death following these age groups: 0 year, 1-4, 5-9, 10-14, 15-19, 20-64, 65+
- date of ilness – first and last person
- incubation time and last of ilness
- source of infection and its confirmation (laborarory, epidemiologic)
- factor of transmission and its confirmation (laborarory, epidemiologic), commercial name of product/foodstuff, producer
- process of feeding and eating
- place of contamination of transmission factor
- exact name and adress of place of consumption
- laboratory investigation: name of laboratory, number of investigated and positive samples, swabs
- factors underlies origin of outbreak

Control measures or other actions taken to improve the situation

- control of measures aimed at elimination of imperfections

Suggestions to the community for the actions to be taken

In regard of occurance of salmonelosis especially in households we suggest increase of healthy aware.

Foodborne Outbreaks: summarized data

	Total number of outbreaks	Outbreaks	Human cases	Hospitalized	Deaths	Number of verified outbreaks
Bacillus	0	0	unknown	unknown	unknown	0
Campylobacter	1	1	unknown	unknown	unknown	0
Clostridium	0	0	unknown	unknown	unknown	0
Escherichia coli, pathogenic	0	0	unknown	unknown	unknown	0
Foodborne viruses	24	24	unknown	unknown	unknown	0
Listeria	0	0	unknown	unknown	unknown	0
Other agents	3	3	unknown	unknown	unknown	0
Parasites	1	0	unknown	unknown	unknown	1
Salmonella	21	14	unknown	unknown	unknown	7
Staphylococcus	2	1	unknown	unknown	unknown	1
Unknown	23	23	unknown	unknown	unknown	0
Yersinia	0	0	unknown	unknown	unknown	0

Verified Foodborne Outbreaks: detailed data

PT 21c

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	10
Hospitalized	4
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	potato salad with mayonnaise from domestic eggs
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases, Laboratory characterization of food and human isolates
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

PT 6

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	18
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	potato salad with mayonnaise from domestic eggs
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases, Laboratory characterization of food and human isolates
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

PT 8

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	13
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	domestic eggs in mayonnaise
Type of evidence	Laboratory characterization of food and human isolates, Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

PT 8

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	62
Hospitalized	4
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	cooked pork with cream sauce
Type of evidence	Laboratory detection in human cases, Laboratory characterization of food and human isolates, Laboratory detection in implicated food
Setting	Canteen or workplace catering
Place of origin of problem	Other place of origin
Origin of foodstuff	Unknown
Contributory factors	Other contributory factor
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	23
Hospitalized	5
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	tartare sauce
Type of evidence	Laboratory characterization of food and human isolates, Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Take-away or fast-food outlet
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	40
Hospitalized	7
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	pie from eggs
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases, Laboratory characterization of food and human isolates
Setting	Canteen or workplace catering
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Typhimurium

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	12
Hospitalized	5
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	raw domestic sausages
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases, Laboratory characterization of food and human isolates
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

Verified Foodborne Outbreaks: detailed data

S. aureus

	Value
Code	A05
Subagent Choice	
Outbreak type	General
Human cases	42
Hospitalized	3
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	meatballs
Type of evidence	Laboratory detection in implicated food
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

Verified Foodborne Outbreaks: detailed data

T. spiralis

	Value
Code	B75
Subagent Choice	
Outbreak type	General
Human cases	16
Hospitalized	16
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	raw sausage mixture and meat fill to cabage
Type of evidence	Laboratory detection in human cases, Laboratory characterization of food and human isolates, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	