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 2009

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: Slovakia

Reporting Year:

Laboratory name	Description	Contribution
Public Health Authority of the Slovak Republic		food and FBO tables
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 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	animal tables
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	animal, food and feed tables

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 2009 .

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 2009

Table Susceptible animal populations

* Only if different than current reporting year

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*
Cattle (bovine animals)	meat production animals			21509					
	dairy cows and heifers			40051					
	calves (under 1 year)			1498					
	- in total			61560		480888		22004	
Gallus gallus (fowl)	- in total			45894888					
Goats	- in total			83		8484		1613	
Pigs - breeding animals - unspecified	breeding animals - unspecified - sows and gilts			13137					
Pigs	- in total			768981		588894		7141	
Sheep	animals under 1 year (lambs)			73926					
	- in total			81015		382738		6147	
Turkeys	- in total			26122					

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

Foodsuffs

In comparision with previous years 2006, 2007 and 2008 we recorded a significant fall in a total of tested samples – 21 248 samples tested in 2006, 11 678 in 2007 and 9 839 in 2008. On the other hand a slight increase in percentage of positive samples – 0,22% in 2006, 0,34% in 2007 and 0,76% in 2008.
In 2009 there were tested 15 940 samples with positive findings in 20 samples (0,13%). 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 second was S. Infantis.
The highest incidence of salmonella is recorded in poultry meat with 8 positive findings, in meat preparations intended to be eaten cooked (4x – S. Infantis, S.I.(6,7:-:1,5), in fresh meat....
In red meat, salmonella was found in 3 samples (0,26 %), in meat preparation intended to be eaten cooked from pig meat (S. I.(4,5,12:i:-), raw meat products intended to be eaten raw (S. Typhimurium) and in meat product from bovine and pig meat (S. I.(4,5,12:i:-).
In milk and dairy products no positive finding was recorded.
In other food 9 positive samples were positive for Salmonella (0,09%). The highest incidence was recorded in confectionery products (5x S. Enteritidis, 1x S. Infantis). S. Enteritidis was also found in one sample of eggs and one in sample of dries egg products. S. Egusitoo was recorded in one sample of noodles.
Together there were 7 different serovars isolated from food. The most often isolated serovars were S. Enteritidis (7x) and S. Infantis (4x).
Phagetyping of S. Enteritidis was performed only in 7 strains, phagetype 21(3x), type 4 and 8, 2 strains were not typable.
Phagetypnig in S. Typhimurium was performed in one strain, phagetyp DT 193.

Animals

In 2009 there were 7 focuses of salmonelosis in animals registered within Slovakia, in 5 districts, resp. 4 regions. In comparison with 2008 number of focuses of salmonelosis decreased. In cattle, number of focuses increased by 2 comparing in previous year. In poultry decreased by 3 focuses. In pigs there were no changes in number of focuses. In sheep, no focuses of salmonelosis were recorded.
Geographical distribution of focuses of salmonelosis:
Pigs: 1 focus in Presov Region/ Presov District
Poultry: 3 focuses: Nitra Region/Sala, District, Trencin Region/Puchov District, Presov Region/Bardejov District
Cattle: 3 focuses: Bratislava Region/ Senec District, Presov Region/Bardejov District

Poultry – control programme

In 2009 investigation of flocks Gallus Gallus kept on according National control programme for Salmonella infections in poultry. This programme was adopted in compliance with Act 39/2007 for 2009.
National control programme in 2009 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 8 positive flocks (0,60%) found in 1 332 investigated breeding flocks (7x S. Enteritidis, 1x S. Tennessee). In production flocks 644 flocks were investigated with result 22 positive flocks (3,41%).
In broilers, 614 flocks of one-day-chicken were investigated with positive results in 2,60% and in flocks during rearing period were investigated 3001 flocks with positive result in 1,40%. Predominant serovar was S. Enteritidis, then S. Infantis.
In turkeys, 151 flocks (breeding, production) were investigated with 4 positive findings (2,65%).
In geese there were investigated 11 flock of breeding and production flocks with prevalence 9,09% (i positive flock).
In ducks there were investigated 6 flocks (breeding, production) with prevalence 16,6% (1 positive flock).
Monitoring of Salmonella in other animals has not been performed in Slovak Republic was performed in Slovakia in 2009. Owner or farmer at own charge took samples in case of suspicion of disease. Positive findings were found in calves under one year, 27 positive samples (6,73%) from 401 samples, in pigs, 26 positive samples from 653 samples investigated and rare findings in dogs, zoo animals and other.

Feedingstuffs
In 2009 there were investigated 1 189 samples of feedingstuffs with positive finding in 21 samples. Comparing the results in 2006 and 2007 when has been significant decline in amount of tested samples (2 103 and 1 406) in 2008 increased (2 679) and in 2009 decreased (1 189). Percentage of positive samples was in 2006 0,57%, in 2007 increased on 1,35%, in 2008 1,01% and in 2009 1,76%.
In feed of animal origin there were found 6 positive samples for salmonella (2,80%) in meat and bone meal, in greaves and frozen poultry offal. Serovars isolated were (S.Enteritidis, S. Typhimurium, S. Infantis., S. Deby, S. Montevideo a S. I. (6,7 : - : 1,5), S. I. (6,7 : l,w : -)a S. I. (1,13,23 : i : -).
In one positive sample of greaves, 3 serovars were detected and in one positive sample of poultry offal 2 serovars were found.
In other feed 6 positive samples were found, in maize (derived), rape seed derived and in fresh plants. Serovars isolated were
In compound feedingstuffs 9 samples were positive from 694 investigated (1,29%). The most positive samples were compound feedingstuffs for poultry, less in compound feedingstuffs for cattle and other (pet food). Predominant serovar was S. Tennessee.
In total 13 serovars were detected in feedingstuffs in 2009.

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 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

Results of the investigation

In comparision with previous years 2006, 2007 and 2008 we recorded a significant fall in a total of tested samples – 21 248 samples tested in 2006, 11 678 in 2007 and 9 839 in 2008. On the other hand a slight increase in percentage of positive samples – 0,22% in 2006, 0,34% in 2007 and 0,76% in 2008.
In 2009 there were tested 15 940 samples with positive findings in 20 samples (0,13%). 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 second was S. Infantis.
The highest incidence of salmonella is recorded in poultry meat with 8 positive findings, in meat preparations intended to be eaten cooked (4x – S. Infantis, S.I.(6,7:-:1,5), in fresh meat....
In red meat, salmonella was found in 3 samples (0,26 %), in meat preparation intended to be eaten cooked from pig meat (S. I.(4,5,12:i:-), raw meat products intended to be eaten raw (S. Typhimurium) and in meat product from bovine and pig meat (S. I.(4,5,12:i:-).
In milk and dairy products no positive finding was recorded.
In other food 9 positive samples were positive for Salmonella (0,09%). The highest incidence was recorded in confectionery products (5x S. Enteritidis, 1x S. Infantis). S. Enteritidis was also found in one sample of eggs and one in sample of dries egg products. S. Egusitoo was recorded in one sample of noodles.
Together there were 7 different serovars isolated from food. The most often isolated serovars were S. Enteritidis (7x) and S. Infantis (4x).
Phagetyping of S. Enteritidis was performed only in 7 strains, phagetype 21(3x), type 4 and 8, 2 strains

were not typable.
Phagetypnig in S. Typhimurium was performed in one strain, phagetyp DT 193.

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 6,7:-:1,5	S. Agona	S. Infantis
Meat from broilers (Gallus gallus) - fresh - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Single	25g	35	1						1
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	10g	26	4				2		2
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	10	2	1					1
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	33	0						
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	40	0						
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - imported - Surveillance - official controls	SVFI	Batch	25g	8	0						
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	4	0						
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	105	0						

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 6,7:-:1,5	S. Agona	S. Infantis
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	10g	2	0						
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - at retail - domestic production - Surveillance - official controls	PHA	Single	25g	24	0						
Meat from turkey - meat preparation - intended to be eaten cooked - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	3	1					1	
Meat from turkey - meat products - cooked, ready-to -eat - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	1	0						
Meat from turkey - meat products - cooked, ready-to -eat - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	7	0						
Meat from turkey - meat products - raw but intended to be eaten cooked - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	1	0						

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 4,5,12:i:-
Meat from bovine animals - meat preparation - intended to be eaten cooked - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	10g	4	0				
Meat from bovine animals - meat preparation - intended to be eaten cooked - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	2	0				
Meat from bovine animals - meat products - raw but intended to be eaten cooked - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	13	0				
Meat from bovine animals - meat products - raw but intended to be eaten cooked - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	7	0				
Meat from bovine animals and pig - meat preparation - intended to be eaten cooked - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	18	0				
Meat from bovine animals and pig - meat preparation - intended to be eaten cooked - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	1135	0				
Meat from bovine animals and pig - meat preparation - intended to be eaten cooked - at retail - imported - Surveillance - official controls	SVFI	Batch	25g	11	0				
Meat from bovine animals and pig - meat products - at processing plant - domestic production - Surveillance - HACCP and own checks	SVFI	Batch	10g	1	1				1

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 4,5,12:i:-
Meat from bovine animals and pig - meat products - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	10g	34	0				
Meat from bovine animals and pig - meat products - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	6	0				
Meat from pig - meat preparation - intended to be eaten cooked - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	10g	270	1				1
Meat from pig - meat preparation - intended to be eaten cooked - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	55	0				
Meat from pig - meat preparation - intended to be eaten cooked - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	21	0				
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	338	0				
Meat from pig - meat products - cooked, ready-to-eat - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	187	0				
Meat from pig - meat products - cooked, ready-to-eat - at retail - imported - Surveillance - official controls	SVFI	Batch	25g	75	0				
Meat from pig - meat products - raw and intended to be eaten raw - Surveillance - official controls (household)	PHA	Single	25g	1	1		1		

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 4,5,12:i:-
Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	25	0				
Meat from pig - meat products - raw but intended to be eaten cooked - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	39	0				
Meat from pig - meat products - raw but intended to be eaten cooked - at retail - imported - Surveillance - official controls	SVFI	Batch	25g	17	0				
Other products of animal origin - gelatin and collagen - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	1	0				
Other products of animal origin - gelatin and collagen - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	4	0				

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Egusitoo	S. Infantis
Bakery products - at retail - domestic production - Surveillance - official controls	PHA	Batch	25g	17	0					
Bakery products - bread - at catering - Surveillance - official controls	PHA	Single	25g	2	0					
Bakery products - bread - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	2	0					
Bakery products - cakes - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	2	0					
Bakery products - cakes - at retail - domestic production - Surveillance - official controls	PHA	Single	25g	16	0					
Bakery products - pastry - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	4	0					
Bakery products - pastry - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	97	0					
Beverages, non-alcoholic - at retail - domestic production - Surveillance - official controls	PHA	Batch	25ml	90	0					
Beverages, non-alcoholic - at retail - imported - Surveillance - official controls	SVFI	Batch	25ml	5	0					
Cocoa and cocoa preparations, coffee and tea - at packing centre - Surveillance - official controls	PHA	Batch	25g	490	0					
Confectionery products and pastes - at catering - Surveillance - official controls	PHA	Single	25g	7	0					

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Egusitoo	S. Infantis
Confectionery products and pastes - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	6	0					
Confectionery products and pastes - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	2534	0					
Confectionery products and pastes - at retail - imported - Surveillance - official controls	SVFI, PHA	Batch	25g	25	6	5				1
Egg products - dried - at processing plant - Surveillance - official controls - selective sampling	PHA	Single	25g	1	1	1				
Egg products - dried - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	7	0					
Eggs - table eggs - at packing centre - Surveillance - official controls	SVFI, PHA	Batch	25g	12	0					
Eggs - table eggs - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Single	25g	99	1	1				
Fats and oils (excluding butter) - fats - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	3	0					
Fats and oils (excluding butter) - oils - at retail - domestic production - Surveillance - official controls	PHA	Single	25ml	1	0					
Fish - raw - frozen - at retail - imported - Surveillance - official controls	SVFI, PHA	Batch	25g	11	0					
Fishery products, unspecified - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	32	0					

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Egusitoo	S. Infantis
Fishery products, unspecified - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	335	0					
Fishery products, unspecified - at retail - imported - Surveillance - official controls	SVFI, PHA	Batch	25g	10	0					
Foodstuffs intended for special nutritional uses - at retail - domestic production - Surveillance - official controls	PHA	Batch	25g	263	0					
Fruits and vegetables - at catering - Surveillance - official controls	PHA	Batch	25g	30	0					
Fruits and vegetables - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	70	0					
Fruits and vegetables - precut - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	8	0					
Fruits and vegetables - precut - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	51	0					
Fruits and vegetables - products - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	256	0					
Fruits and vegetables - products - at retail - imported - Surveillance - official controls	SVFI	Batch	25g	5	0					
Juice - mixed juice - at retail - domestic production - Surveillance - official controls	PHA	Single	25ml	24	0					
Juice - vegetable juice - unpasteurised - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25ml	2	0					

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Egusitoo	S. Infantis
Other food - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	15	0					
Other processed food products and prepared dishes - noodles - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	27	1				1	
Other processed food products and prepared dishes - noodles - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	309	0					
Other processed food products and prepared dishes - noodles - at retail - imported - Surveillance - official controls	SVFI	Batch	25g	8	0					
Other processed food products and prepared dishes - unspecified - non-ready-to-eat foods - at retail - domestic production - Surveillance - official controls	PHA	Batch	25g	45	0					
Other processed food products and prepared dishes - unspecified - ready-to-eat foods - at catering - Surveillance - official controls	PHA	Single	25g	1426	0					
Other processed food products and prepared dishes - unspecified - ready-to-eat foods - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	14	0					
Other processed food products and prepared dishes - unspecified - ready-to-eat foods - at retail - domestic production - Surveillance - official controls	PHA	Single	25g	185	0					
Ready-to-eat salads - at retail - domestic production - Surveillance - official controls	PHA	Batch	25g	3329	0					

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Egusitoo	S. Infantis
Sauce and dressings - mayonnaise - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	324	0					
Soups - dehydrated - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	1	0					
Soups - dehydrated - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	1	0					
Spices and herbs - at processing plant - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	108	0					
Spices and herbs - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	12	0					
Spices and herbs - at retail - imported - Surveillance - official controls	SVFI	Batch	25g	2	0					

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Cheeses made from cows' milk - hard - at retail - Surveillance - official controls	PHA	Single	25g	4	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	12	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	68	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail - imported - Surveillance - official controls	SVFI	Batch	25g	10	0			
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	9	0			
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	2	0			
Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	306	0			
Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	36	0			

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	3	0			
Cheeses, made from mixed milk from cows, sheep and/or goats - unspecified - at catering - Surveillance - official controls	PHA	Batch	25g	5	0			
Cheeses, made from mixed milk from cows, sheep and/or goats - unspecified - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	33	0			
Cheeses, made from mixed milk from cows, sheep and/or goats - unspecified - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	40	0			
Cheeses, made from mixed milk from cows, sheep and/or goats - unspecified - made from raw or low heat-treated milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	25	0			
Dairy products (excluding cheeses) - at retail - domestic production - Surveillance - official controls	PHA	Batch	25g	87	0			
Dairy products (excluding cheeses) - butter - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	9	0			
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	41	0			

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Dairy products (excluding cheeses) - fermented dairy products - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	7	0			
Dairy products (excluding cheeses) - ice-cream - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	9	0			
Dairy products (excluding cheeses) - ice-cream - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	2621	0			
Dairy products (excluding cheeses) - ice-cream - at retail - imported - Surveillance - official controls	SVFI	Batch	25g	20	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	9	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25g	39	0			
Infant formula - at retail - Surveillance - official controls	PHA	Batch	25g	496	0			
Milk, cows' - UHT milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25ml	2	0			
Milk, cows' - pasteurised milk - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	25ml	9	0			
Milk, cows' - raw - at processing plant - domestic production - Surveillance - official controls	SVFI, PHA	Single	25ml	271	0			

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Milk, sheep's - raw - Surveillance - official controls	SVFI	Batch	25ml	6	0			

2.1.4 Salmonella in animals

A. 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 č. 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.

Results of the investigation

There were 8 positive flocks (0,60%) found in 1 332 investigated breeding flocks (7x S. Enteritidis, 1x S. Tennessee)in 2009.

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

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.

B. Salmonella spp. in Gallus Gallus - broiler flocks

Monitoring system

Sampling strategy

Broiler flocks

Flocks of broilers shall be sampled on the initiative of the food business operator and by the competent authority.

I. sampling on the initiative of the food business operator
Sampling on the initiative of the food business operator shall take place within three weeks before the birds are moved to the slaughterhouse.

II. sampling by the competent authority (official sampling)

Samples are taken by the official veterinarian of the relevant district veterinary and food administrations.

a.Sampling by the competent authority shall include each year at least one flock of broilers on 10 % of the holdings with more than 5 000 birds. It shall be done on a risk basis each time the competent authority considers it necessary. A sampling carried out by the competent authority may replace the sampling on the initiative of the food business operator.
b.However, by way of derogation from point (a), the competent authority may decide to sample at least one flock of broilers per round on holdings with several flocks if:
a.an all in/all out system is used;
b.the same management applies to all flocks;
c.feed and water supply is common to all flocks;
d.during one year and at least six rounds, Salmonella spp were tested according to the monitoring scheme set out in point (b) in all flocks on the holding and samples of all flocks of at least one round were taken by the competent authority; and
e.all results from the testing for Salmonella enteritidis or Salmonella typhimurium were negative.

Control program/mechanisms

The control program/strategies in place

Broiler flocks

SAMPLING FRAME
The sampling frame shall cover all flocks of broilers in the Slovak Republic

MONITORING

Flocks of broilers shall be sampled on the initiative of the food business operator and by the competent authority.

I. sampling on the initiative of the food business operator
Sampling on the initiative of the food business operator shall take place within three weeks before the birds are moved to the slaughterhouse.

II. sampling by the competent authority (official sampling)

Samples are taken by the official veterinarian of the relevant district veterinary and food administrations.

a.Sampling by the competent authority shall include each year at least one flock of broilers on 10 % of the holdings with more than 5 000 birds. It shall be done on a risk basis each time the competent authority considers it necessary. A sampling carried out by the competent authority may replace the sampling on the initiative of the food business operator.
b.However, by way of derogation from point (a), the competent authority may decide to sample at least one flock of broilers per round on holdings with several flocks if:
a.an all in/all out system is used;
b.the same management applies to all flocks;
c.feed and water supply is common to all flocks;
d.during one year and at least six rounds, Salmonella spp were tested according to the monitoring scheme set out in point (b) in all flocks on the holding and samples of all flocks of at least one round were taken by the competent authority; and
e.all results from the testing for Salmonella enteritidis or Salmonella typhimurium were negative.

SAMPLING PROTOCOL

•At least two pairs of boot/sock swabs shall be taken.
•For free range flocks of broilers, samples shall only be collected in the area inside the house.
•All boot/sock swabs must be pooled into one sample.
•In flocks with less than 100 broilers, where it is not possible to use boot/sock swabs as access to the houses is not possible, they may be replaced by hand drag swabs, where the boot swabs or socks are worn over gloved hands and rubbed over surfaces contaminated with fresh faeces, or if not feasible, by other sampling techniques for faeces fit for the intended purpose.
•Before putting on the boot/sock swabs, their surface shall be moistened with maximum recovery diluents (MRD: 0,8 % sodium chloride, 0,1 % peptone in sterile deionised water), or sterile water or any other diluent approved by the national reference laboratory referred to in point 5 of this programme. The use of farm water containing antimicrobials or additional disinfectants shall be prohibited. The recommended way to moisten boot swabs shall be to pour the liquid inside before putting them on. Alternatively, boot swabs or socks may be autoclaved with diluents within autoclave bags or jars before use. Diluents may also be applied after boots are put on using a spray or wash bottle.
•It shall be ensured that all sections in a house are represented in the sampling in a proportionate way. Each pair should cover about 50 % of the area of the house.
•On completion of sampling the boot/sock swabs shall be carefully removed so as not to dislodge adherent material. Boot swabs may be inverted to retain material. They shall be placed in a bag or pot and labelled.

In the case of sampling by the competent authority because of suspicion of Salmonella infection and in any other case considered appropriate, the competent authority shall satisfy itself by conducting further tests as appropriate so that the results of examinations for Salmonella in flocks of broilers are not affected by the use of antimicrobials in those flocks.

Notification of results and reporting
The state veterinary laboratories in the Slovak Republic notify the results of all negative examinations of broiler flocks to the relevant district veterinary and food administrations. Where as a result of monitoring carried out the presence of Salmonella enteritidis, Salmonella typhimurium is detected in a broiler 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 relevant district veterinary and food administration.

10. Measures to be taken in broiler flocks where the infection has been confirmed in the Slovak Republic in years 2009 - 2011

When invasive serovars are confirmed in broiler flock the relevant district veterinary and food administration starts to carry out the epizootological investigation in order to detect the source of contamination according to point 12 of this programme.

The measures must comply with the following minimum requirements:

1)After slaughtering of infected flocks safe disposal of manure or litter must be carried out in accordance with procedure laid down by the competent veterinary administration authority.

2)A thorough cleansing and disinfection must be carried out of the building.

3)After cleaning and disinfection must be performed the effectiveness check by taking of swabs from the superficies of the house, which are designated for bacteriological investigation to the NRL. Houses can be restocked only when results of bacteriological investigation of control swabs are negative for invasive salmonella.

Specific criterion for fresh poultry meat:

From 2010 fresh poultry meat may not be placed on the market for human consumption unless it meets the following criterion:
‘Salmonella: absence in 25 grams’.
This criterion does not apply to fresh poultry meat destined for industrial heat treatment or another treatment to eliminate salmonella in accordance with Community legislation on food hygiene.

11. Use of antimicrobials
Use of antimicrobials in the framework of this programme must be realized according to Commission Regulation (EC) No 1177/2006.
Guides for use of antimicrobials:
•Antimicrobials shall not be used as a specific method to control salmonella in poultry.
•Antimicrobials authorized ma

Measures in case of the positive findings or single cases

Broiler flocks: Rearing period

1)After slaughtering of infected flocks safe disposal of manure or litter must be carried out in accordance with procedure laid down by the competent veterinary administration authority.

2)A thorough cleansing and disinfection must be carried out of the building.

3)After cleaning and disinfection must be performed the effectiveness check by taking of swabs from the superficies of the house, which are designated for bacteriological investigation to the NRL. Houses can be

restocked only when results of bacteriological investigation of control swabs are negative for invasive salmonella.

Specific criterion for fresh poultry meat:

From 2010 fresh poultry meat may not be placed on the market for human consumption unless it meets the following criterion:
'Salmonella: absence in 25 grams'.
This criterion does not apply to fresh poultry meat destined for industrial heat treatment or another treatment to eliminate salmonella in accordance with Community legislation on food hygiene.

Notification system in place

The state veterinary laboratories in the Slovak Republic notify the results of all negative examinations of broiler flocks to the relevant district veterinary and food administrations. Where as a result of monitoring carried out the presence of Salmonella enteritidis, Salmonella typhimurium is detected in a broiler 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 relevant district veterinary and food administration.

Results of the investigation

In 2009, 614 broiler flocks of one-day-chicken were investigated with positive results in 2,60% and in flocks during rearing period were investigated 3001 flocks with positive result in 1,40%. Predominant serovar was S. Enteritidis, then S. Infantis.

C. 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.

Results of the investigation

In 2009, 644 flocks were investigated with result 22 positive flocks (3,41%).

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

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.

D. 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.

Results of the investigation

Positive findings were found in calves under one year, 27 positive samples (6,73%) from 401 samples.

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

Monitoring system

Sampling strategy

Breeding flocks

Results of the investigation

In 2009, there were investigated 6 flocks (breeding, production) of ducks with prevalence 16,6% (1 positive flock).

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

Results of the investigation

In 2009, in geese there were investigated 11 flock of breeding and production flocks with prevalence 9,09% (1 positive flock).

G. 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 2009, 151 flocks (breeding, production) were investigated with 4 positive findings (2,65%).

H. 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

Animals

In 2009 there were 7 focuses of salmonelosis in animals registered within Slovakia, in 5 districts, resp. 4 regions. In comparison with 2008 number of focuses of salmonelosis decreased. In cattle, number of focuses increased by 2 comparing in previous year. In poultry decreased by 3 focuses. In pigs there were no changes in number of focuses. In sheep, no focuses of salmonelosis were recorded.
Geographical distribution of focuses of salmonelosis:
Pigs: 1 focus in Presov Region/ Presov District
Poultry: 3 focuses: Nitra Region/Sala, District, Trencin Region/Puchov District, Presov Region/Bardejov District
Cattle: 3 focuses: Bratislava Region/ Senec District, Presov Region/Bardejov District

Poultry – control programme

In 2009 investigation of flocks Gallus Gallus kept on according National control programme for Salmonella infections in poultry. This programme was adopted in compliance with Act 39/2007 for 2009.
National control programme in 2009 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 8 positive flocks (0,60%) found in 1 332 investigated breeding flocks (7x S. Enteritidis, 1x S. Tennessee). In production flocks 644 flocks were investigated with result 22 positive flocks (3,41%).
In broilers, 614 flocks of one-day-chicken were investigated with positive results in 2,60% and in flocks during rearing period were investigated 3001 flocks with positive result in 1,40%. Predominant serovar was S. Enteritidis, then S. Infantis.
In turkeys, 151 flocks (breeding, production) were investigated with 4 positive findings (2,65%).
In geese there were investigated 11 flock of breeding and production flocks with prevalence 9,09% (i positive flock).
In ducks there were investigated 6 flocks (breeding, production) with prevalence 16,6% (1 positive flock).
Monitoring of Salmonella in other animals has not been performed in Slovak Republic was performed in Slovakia in 2009. Owner or farmer at own charge took samples in case of suspicion of disease. Positive findings were found in calves under one year, 27 positive samples (6,73%) from 401 samples, in pigs, 26 positive samples from 653 samples investigated and rare findings in dogs, zoo animals and other.

Table Salmonella in breeding flocks of Gallus gallus

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	Salmonella spp., unspecified
Gallus gallus (fowl) - breeding flocks for broiler production line - adult - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling		SVI,SVFI	Flock	151	4	3					
Gallus gallus (fowl) - breeding flocks for egg production line - adult - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling		SVI,SVFI	Flock	52	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks - at farm - animal sample - Control and eradication programmes - industry sampling		SVI, SVFI	Flock	507	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks - at farm - animal sample - Control and eradication programmes - official sampling		SVI, SVFI	Flock	52	4	4					
Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period - at farm - animal sample - faeces - Control and eradication programmes - industry sampling [1)]	320	SVI, SVFI	Flock	320	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - hatching eggs - at farm - Control and eradication programmes - industry sampling		SVI, SVFI	Flock	35	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - unspecified - at farm - animal sample - faeces - Control and eradication programmes - industry sampling		SVI, SVFI	Flock	17	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	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	Salmonella spp., unspecified
Gallus gallus (fowl) - parent breeding flocks for egg production line - adult - at farm - animal sample - faeces - Control and eradication programmes - official sampling [2)]	129	SVI, SVFI	Flock	24	0						
Gallus gallus (fowl) - parent breeding flocks for egg production line - day-old chicks - at farm - animal sample - Control and eradication programmes - official sampling		SVI, SVFI	Flock	36	0						
Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period - at farm - animal sample - faeces - Control and eradication programmes - industry sampling [3)]	22	SVI, SVFI	Flock	22	0						
Gallus gallus (fowl) - parent breeding flocks, unspecified - adult - at farm - animal sample - faeces - Control and eradication programmes - official sampling [4)]	129	SVI, SVFI	Flock	129	0						
Gallus gallus (fowl) - parent breeding flocks, unspecified - day-old chicks - at farm - animal sample - Control and eradication programmes - industry sampling		SVI, SVFI	Flock	116	0						
Gallus gallus (fowl) - parent breeding flocks, unspecified - day-old chicks - at farm - animal sample - Control and eradication programmes - official sampling		SVI, SVFI	Flock	1	0						

Table Salmonella in breeding flocks of Gallus gallus

	S. Tennessee
Gallus gallus (fowl) - breeding flocks for broiler production line - adult - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling	1
Gallus gallus (fowl) - breeding flocks for egg production line - adult - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling	
Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks - at farm - animal sample - Control and eradication programmes - industry sampling	
Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks - at farm - animal sample - Control and eradication programmes - official sampling	
Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period - at farm - animal sample - faeces - Control and eradication programmes - industry sampling [1)]	
Gallus gallus (fowl) - parent breeding flocks for broiler production line - hatching eggs - at farm - Control and eradication programmes - industry sampling	
Gallus gallus (fowl) - parent breeding flocks for broiler production line - unspecified - at farm - animal sample - faeces - Control and eradication programmes - industry sampling	
Gallus gallus (fowl) - parent breeding flocks for egg production line - adult - at farm - animal sample - faeces - Control and eradication programmes - official sampling [2)]	

Table Salmonella in breeding flocks of Gallus gallus

	S. Tennessee
Gallus gallus (fowl) - parent breeding flocks for egg production line - day-old chicks - at farm - animal sample - Control and eradication programmes - official sampling	
Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period - at farm - animal sample - faeces - Control and eradication programmes - industry sampling [3)]	
Gallus gallus (fowl) - parent breeding flocks, unspecified - adult - at farm - animal sample - faeces - Control and eradication programmes - official sampling [4)]	
Gallus gallus (fowl) - parent breeding flocks, unspecified - day-old chicks - at farm - animal sample - Control and eradication programmes - industry sampling	
Gallus gallus (fowl) - parent breeding flocks, unspecified - day-old chicks - at farm - animal sample - Control and eradication programmes - official sampling	

Comments:

[1)] total number of breeding flocks - rearing period
[2)] total number of adult breeding flocks
[3)] total number of breeding flocks - rearing period
[4)] total number of adult breeding flocks

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 6,7:-:1,5	S. Bovismorbificans	S. Infantis
Ducks - breeding flocks, unspecified - at farm - animal sample - eggs - Control and eradication programmes - industry sampling		SVFI, SVI	Flock	1	1	1					
Ducks - meat production flocks - at farm - animal sample - faeces - Control and eradication programmes - industry sampling		SVFI, SVI	Flock	5	0						
Gallus gallus (fowl) - broilers - before slaughter - at slaughterhouse - animal sample - neck skin - Control and eradication programmes - official sampling		SVFI, SVI	Slaughter batch	10	2	1					
Gallus gallus (fowl) - broilers - day-old chicks - at farm - animal sample - Control and eradication programmes - industry sampling		SVFI, SVI	Flock	614	23	16	3				1
Gallus gallus (fowl) - broilers - during rearing period - at farm - Control and eradication programmes - official and industry sampling	544	SVFI, SVI	Flock	3001	76	41	1		7	2	19
Gallus gallus (fowl) - broilers - during rearing period - at farm - animal sample - faeces - Control and eradication programmes - official sampling		SVFI, SVI	Flock	108	22	14				2	3
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling	129	SVFI, SVI	Flock	129	3	3					
Gallus gallus (fowl) - laying hens - adult - at farm - animal sample - faeces - Control and eradication programmes - industry sampling		SVFI, SVI	Flock	370	9	8					
Gallus gallus (fowl) - laying hens - adult - at farm - environmental sample - Control and eradication programmes - official and industry sampling	155	SVFI, SVI	Flock	129	13	9	1				2

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 6,7:-:1,5	S. Bovismorbificans	S. Infantis
Gallus gallus (fowl) - laying hens - day-old chicks - at farm - animal sample - Control and eradication programmes - industry sampling		SVFI, SVI	Flock	49	0						
Gallus gallus (fowl) - laying hens - during rearing period - at farm - animal sample - Control and eradication programmes - official and industry sampling	158	SVFI, SVI	Flock	72	0						
Geese - meat production flocks - at farm - animal sample - organ/tissue - Control and eradication programmes - industry sampling		SVFI, SVI	Flock	11	1		1				
Turkeys - breeding flocks, unspecified - at farm - animal sample - Control and eradication programmes - industry sampling [1)]	60	SVFI, SVI	Flock	98	0						
Turkeys - breeding flocks, unspecified - day-old chicks - at farm - animal sample - Control and eradication programmes - official sampling		SVFI, SVI	Flock	1	0						
Turkeys - meat production flocks - at farm - animal sample - Control and eradication programmes - industry sampling [2)]	60	SVFI, SVI	Flock	25	1						
Turkeys - meat production flocks - day-old chicks - at farm - animal sample - organ/tissue - Control and eradication programmes - industry sampling		SVFI, SVI	Flock	1	1						
Turkeys - meat production flocks - during rearing period - at farm - animal sample - faeces - Control and eradication programmes - industry sampling [3)]	60	SVFI, SVI	Flock	15	0						
Turkeys - meat production flocks - during rearing period - at farm - animal sample - organ/tissue - Control and eradication programmes - industry sampling [4)]	60	SVFI, SVI	Flock	11	2						1

Table Salmonella in other poultry

	S. Kentucky	S. Lille	S. Montevideo	S. Newport	S. Oranienburg	S. Saintpaul	S. Tennessee
Ducks - breeding flocks, unspecified - at farm - animal sample - eggs - Control and eradication programmes - industry sampling							
Ducks - meat production flocks - at farm - animal sample - faeces - Control and eradication programmes - industry sampling							
Gallus gallus (fowl) - broilers - before slaughter - at slaughterhouse - animal sample - neck skin - Control and eradication programmes - official sampling				1			
Gallus gallus (fowl) - broilers - day-old chicks - at farm - animal sample - Control and eradication programmes - industry sampling		2					1
Gallus gallus (fowl) - broilers - during rearing period - at farm - Control and eradication programmes - official and industry sampling	3		1	1		1	
Gallus gallus (fowl) - broilers - during rearing period - at farm - animal sample - faeces - Control and eradication programmes - official sampling			1	1		1	
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling							
Gallus gallus (fowl) - laying hens - adult - at farm - animal sample - faeces - Control and eradication programmes - industry sampling							1
Gallus gallus (fowl) - laying hens - adult - at farm - environmental sample - Control and eradication programmes - official and industry sampling					1		

Table Salmonella in other poultry

	S. Kentucky	S. Lille	S. Montevideo	S. Newport	S. Oranienburg	S. Saintpaul	S. Tennessee
Gallus gallus (fowl) - laying hens - day-old chicks - at farm - animal sample - Control and eradication programmes - industry sampling							
Gallus gallus (fowl) - laying hens - during rearing period - at farm - animal sample - Control and eradication programmes - official and industry sampling							
Geese - meat production flocks - at farm - animal sample - organ/tissue - Control and eradication programmes - industry sampling							
Turkeys - breeding flocks, unspecified - at farm - animal sample - Control and eradication programmes - industry sampling [1)]							
Turkeys - breeding flocks, unspecified - day-old chicks - at farm - animal sample - Control and eradication programmes - official sampling							
Turkeys - meat production flocks - at farm - animal sample - Control and eradication programmes - industry sampling [2)]				1			
Turkeys - meat production flocks - day-old chicks - at farm - animal sample - organ/tissue - Control and eradication programmes - industry sampling				1			
Turkeys - meat production flocks - during rearing period - at farm - animal sample - faeces - Control and eradication programmes - industry sampling [3)]							
Turkeys - meat production flocks - during rearing period - at farm - animal sample - organ/tissue - Control and eradication programmes - industry sampling [4)]				1			

Table Salmonella in other poultry

Comments:

[1)] total number of flocks
[2)] total number of flocks
[3)] total number of flocks
[4)] total number of flocks

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 4,5,12:i:-	S. Abony	S. Bredeney	S. Choleraesuis
Cats - Clinical investigations	SVFI, SVI	Animal	44	0							
Cattle (bovine animals) - adult cattle over 2 years - at farm - animal sample - faeces - Clinical investigations	SVFI, SVI	Animal	113	0							
Cattle (bovine animals) - adult cattle over 2 years - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Animal	93	0							
Cattle (bovine animals) - adult cattle over 2 years - at slaughterhouse - animal sample - Surveillance - official controls	SVFI, SVI	Animal	95	0							
Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - faeces - Clinical investigations	SVFI, SVI	Animal	261	22	1	20				1	
Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Animal	140	5	3	1					
Chinchillas - Clinical investigations	SVFI, SVI	Animal	1	0							
Deer - wild - from hunting - Clinical investigations	SVFI, SVI	Animal	9	0							
Dogs - Clinical investigations	SVFI, SVI	Animal	267	13	2	2					
Fish - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Animal	8	1		1					
Goats - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Animal	14	0							
Hares - from hunting - Clinical investigations	SVFI, SVI	Animal	7	0							

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 4,5,12:i:-	S. Abony	S. Bredeney	S. Choleraesuis
Minks - at farm - animal sample - faeces - Clinical investigations	SVFI, SVI	Animal	2	1							
Minks - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Animal	3	0							
Monkeys - Clinical investigations	SVFI, SVI	Animal	1	1							
Penguin - at zoo - Clinical investigations	SVFI, SVI	Animal	5	0							
Pigs - breeding animals - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Animal	9	0							
Pigs - breeding animals - at slaughterhouse - animal sample - Surveillance - official controls	SVFI, SVI	Animal	122	7		2		2			
Pigs - fattening pigs - at farm - animal sample - faeces - Clinical investigations	SVFI, SVI	Animal	213	0							
Pigs - fattening pigs - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Animal	309	19		17					1
Rabbits - at farm - animal sample - Clinical investigations	SVFI, SVI	Animal	4	0							
Reptiles - Clinical investigations	SVFI, SVI	Animal	3	3							
Sheep - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Animal	189	0							
Sheep - at slaughterhouse - animal sample - Surveillance - official controls	SVFI, SVI	Animal	1	0							
Snakes - Clinical investigations	SVFI, SVI	Animal	13	4							
Solipeds, domestic - horses - at farm - animal sample - Clinical investigations	SVFI, SVI	Animal	3	0							
Turtles (environmental sample)	SVFI, SVI	Animal	1	1							

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 4,5,12:i:-	S. Abony	S. Bredeney	S. Choleraesuis
Turtles - Clinical investigations	SVFI, SVI	Animal	6	3					2		
Zoo animals, all - Clinical investigations (unspecified)	SVFI, SVI	Animal	17	0							

	S. Derby	S. Dublin	S. Goldcoast	S. IV 11:z4,z23:-	S. Infantis	S. Inpraw	S. Kottbus	S. London	S. Mono	S. Muenchen	S. Ohio
Cats - Clinical investigations											
Cattle (bovine animals) - adult cattle over 2 years - at farm - animal sample - faeces - Clinical investigations											
Cattle (bovine animals) - adult cattle over 2 years - at farm - animal sample - organ/tissue - Clinical investigations											
Cattle (bovine animals) - adult cattle over 2 years - at slaughterhouse - animal sample - Surveillance - official controls											
Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - faeces - Clinical investigations											
Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - organ/tissue - Clinical investigations		1									
Chinchillas - Clinical investigations											
Deer - wild - from hunting - Clinical investigations											

Table Salmonella in other animals

	S. Derby	S. Dublin	S. Goldcoast	S. IV 11:z4,z23:-	S. Infantis	S. Inpraw	S. Kottbus	S. London	S. Mono	S. Muenchen	S. Ohio
Dogs - Clinical investigations	4		1		2		1	1			
Fish - at farm - animal sample - organ/tissue - Clinical investigations											
Goats - at farm - animal sample - organ/tissue - Clinical investigations											
Hares - from hunting - Clinical investigations											
Minks - at farm - animal sample - faeces - Clinical investigations					1						
Minks - at farm - animal sample - organ/tissue - Clinical investigations											
Monkeys - Clinical investigations											
Penguin - at zoo - Clinical investigations											
Pigs - breeding animals - at farm - animal sample - organ/tissue - Clinical investigations											
Pigs - breeding animals - at slaughterhouse - animal sample - Surveillance - official controls	1							1			1
Pigs - fattening pigs - at farm - animal sample - faeces - Clinical investigations											
Pigs - fattening pigs - at farm - animal sample - organ/tissue - Clinical investigations	1										
Rabbits - at farm - animal sample - Clinical investigations											
Reptiles - Clinical investigations				2		1					
Sheep - at farm - animal sample - organ/tissue - Clinical investigations											

Table Salmonella in other animals

	S. Derby	S. Dublin	S. Goldcoast	S. IV 11:z4,z23:-	S. Infantis	S. Inpraw	S. Kottbus	S. London	S. Mono	S. Muenchen	S. Ohio
Sheep - at slaughterhouse - animal sample - Surveillance - official controls											
Snakes - Clinical investigations										1	
Solipeds, domestic - horses - at farm - animal sample - Clinical investigations											
Turtles (environmental sample)									1		
Turtles - Clinical investigations											
Zoo animals, all - Clinical investigations (unspecified)											

	S. Oranienburg	S. Sendai	S. V 48:z41:-	S. enterica subsp. arizonae
Cats - Clinical investigations				
Cattle (bovine animals) - adult cattle over 2 years - at farm - animal sample - faeces - Clinical investigations				
Cattle (bovine animals) - adult cattle over 2 years - at farm - animal sample - organ/tissue - Clinical investigations				
Cattle (bovine animals) - adult cattle over 2 years - at slaughterhouse - animal sample - Surveillance - official controls				
Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - faeces - Clinical investigations				

Table Salmonella in other animals

	S. Oranienburg	S. Sendai	S. V 48:z41:-	S. enterica subsp. arizonae
Cattle (bovine animals) - calves (under 1 year) - at farm - animal sample - organ/tissue - Clinical investigations				
Chinchillas - Clinical investigations				
Deer - wild - from hunting - Clinical investigations				
Dogs - Clinical investigations				
Fish - at farm - animal sample - organ/tissue - Clinical investigations				
Goats - at farm - animal sample - organ/tissue - Clinical investigations				
Hares - from hunting - Clinical investigations				
Minks - at farm - animal sample - faeces - Clinical investigations				
Minks - at farm - animal sample - organ/tissue - Clinical investigations				
Monkeys - Clinical investigations	1			
Penguin - at zoo - Clinical investigations				
Pigs - breeding animals - at farm - animal sample - organ/tissue - Clinical investigations				
Pigs - breeding animals - at slaughterhouse - animal sample - Surveillance - official controls				
Pigs - fattening pigs - at farm - animal sample - faeces - Clinical investigations				

Table Salmonella in other animals

	S. Oranienburg	S. Sendai	S. V 48:z41:-	S. enterica subsp. arizonae
Pigs - fattening pigs - at farm - animal sample - organ/tissue - Clinical investigations				
Rabbits - at farm - animal sample - Clinical investigations				
Reptiles - Clinical investigations				
Sheep - at farm - animal sample - organ/tissue - Clinical investigations				
Sheep - at slaughterhouse - animal sample - Surveillance - official controls				
Snakes - Clinical investigations		1		2
Solipeds, domestic - horses - at farm - animal sample - Clinical investigations				
Turtles (environmental sample)				
Turtles - Clinical investigations			1	
Zoo animals, all - Clinical investigations (unspecified)				

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Bredeney
Ostriches - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Flock	6	0				
Parrots - at farm - animal sample - faeces - Clinical investigations	SVFI, SVI	Animal	34	0				
Parrots - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Animal	3	0				
Pheasants - meat production flocks - at farm - animal sample - faeces - Clinical investigations	SVFI, SVI	Flock	4	0				
Pheasants - meat production flocks - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Flock	77	4				4
Pheasants - parent flocks - at farm - animal sample - faeces - Clinical investigations	SVFI, SVI	Flock	5	1		1		
Pigeons - at farm - animal sample - faeces - Clinical investigations	SVFI, SVI	Flock	17	1		1		
Pigeons - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Flock	31	0				
Quails - at farm - animal sample - faeces - Clinical investigations	SVFI, SVI	Flock	1	0				
Quails - at farm - animal sample - organ/tissue - Clinical investigations	SVFI, SVI	Flock	5	0				
Wild animals - from hunting - Clinical investigations	SVFI, SVI	Animal	3	0				

2.1.5 Salmonella in feedingstuffs

A. Salmonella spp. in feed

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

In 2009 there were investigated 1 189 samples of feedingstuffs with positive finding in 21 samples. Comparing the results in 2006 and 2007 when has been significant decline in amount of tested samples (2 103 and 1 406) in 2008 increased (2 679) and in 2009 decreased (1 189). Percentage of positive samples was in 2006 0,57%, in 2007 increased on 1,35%, in 2008 1,01% and in 2009 1,76%.
In feed of animal origin there were found 6 positive samples for salmonella (2,80%) in meat and bone meal, in greaves and frozen poultry offal. Serovars isolated were (S.Enteritidis, S. Typhimurium, S. Infantis., S. Deby, S. Montevideo a S. I. (6,7 : - : 1,5), S. I. (6,7 : l,w : -)a S. I. (1,13,23 : i : -).
In one positive sample of greaves, 3 serovars were detected and in one positive sample of poultry offal 2 serovars were found.
In other feed 6 positive samples were found, in maize (derived), rape seed derived and in fresh plants. Serovars isolated were
In compound feedingstuffs 9 samples were positive from 694 investigated (1,29%). The most positive samples were compound feedingstuffs for poultry, less in compound feedingstuffs for cattle and other (pet food). Predominant serovar was S. Tennessee.
In total 13 serovars were detected in feedingstuffs in 2009.

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 compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Egusitoo	S. Kentucky	S. Tennessee
Compound feedingstuffs for cattle - final product - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	261	1				1		
Compound feedingstuffs for fish - final product - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	1	0						
Compound feedingstuffs for pigs - process control - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	208	0						
Compound feedingstuffs for poultry (non specified) - final product - at farm - feed sample - Surveillance - official controls	SVFI	Single	25g	51	0						
Compound feedingstuffs for poultry - broilers - final product - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	108	6	1				1	4
Compound feedingstuffs for poultry - laying hens - final product - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	41	1						1
Compound feedingstuffs for sheep - final product - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	3	0						
Pet food - dog snacks (pig ears, chewing bones) - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	13	0						
Pet food - final product - canned products - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	8	1	1					

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 1,3,19:-:-	S. Tennessee	S. Worthington
Feed material of cereal grain origin - barley derived - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	27	0						
Feed material of cereal grain origin - maize - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	41	0						
Feed material of cereal grain origin - maize - derived - at feed mill - domestic production - Surveillance - official controls	SVFI	Batch	25g	26	4				1		3
Feed material of cereal grain origin - other cereal grain derived - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	23	0						
Feed material of cereal grain origin - wheat derived - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	48	0						
Feed material of oil seed or fruit origin - rape seed derived - at feed mill - domestic production - Surveillance - official controls	SVFI	Single	25g	11	1					1	
Feed material of oil seed or fruit origin - soya (bean) derived - at feed mill - imported - Surveillance - official controls	SVFI	Single	25g	56	0						
Feed material of oil seed or fruit origin - sunflower seed derived - at feed mill - domestic production - Surveillance - official controls	SVFI	Single	25g	7	0						
Other feed material - other plants - at farm - feed sample - Surveillance - official controls (fresh plants)	SVFI	Single	25g	24	1		1				
Other feed material - straws - at farm - feed sample - Surveillance - official controls	SVFI	Single	25g	6	0						

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 1,3,19:-:-	S. Tennessee	S. Worthington
Silage - at farm - feed sample - Surveillance - official controls	SVFI	Single	25g	12	0						

Table Salmonella in feed material of animal origin

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 1,13,23:-:-	S. 6,7:-:1,5	S. 6,7:-:l,w
Feed material of land animal origin - animal fat - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	9	0						
Feed material of land animal origin - blood products - at feed mill - domestic production - Surveillance - official controls	SVFI	Batch	25g	1	0						
Feed material of land animal origin - dairy products - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	14	0						
Feed material of land animal origin - dairy products - at feed mill - domestic production - Surveillance - official controls	SVFI	Batch	25g	32	0						
Feed material of land animal origin - greaves - at retail - domestic production - Surveillance - official controls [1)]	SVFI	Batch	25g	15	1				1		1
Feed material of land animal origin - meat and bone meal - at feed mill - domestic production - Surveillance - official controls	SVFI	Batch	25g	10	0						
Feed material of land animal origin - meat and bone meal - at feed mill - imported - Surveillance - official controls	SVFI	Batch	25g	14	2		1				
Feed material of land animal origin - poultry offal meal - at feed mill - domestic production - Surveillance - official controls [2)]	SVFI	Batch	25g	10	3	1				1	
Feed material of land animal origin - protein meal - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	6	0						

Table Salmonella in feed material of animal origin

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 1,13,23:-:-	S. 6,7:-:1,5	S. 6,7:-:l,w
Feed material of marine animal origin - fish meal - at farm - feed sample - Surveillance - official controls	SVFI	Batch	25g	16	0						
Feed material of marine animal origin - fish meal - at feed mill - imported - Surveillance - official controls	SVFI	Batch	25g	20	0						
Feed material of marine animal origin - fish oil - at feed mill - domestic production - Surveillance - official controls	SVFI	Batch	25g	1	0						
Pet food - final product - canned products - at retail - imported - Surveillance - official controls	SVFI	Batch	25g	7	0						
Pet food - final product - non-pelleted/meal - at feed mill - domestic production - Surveillance - official controls	SVFI	Batch	25g	52	0						
Pet food - final product - pelleted - at retail - imported - Surveillance - official controls	SVFI	Batch	25g	7	0						

	S. Derby	S. Infantis	S. Montevideo
Feed material of land animal origin - animal fat - at farm - feed sample - Surveillance - official controls			
Feed material of land animal origin - blood products - at feed mill - domestic production - Surveillance - official controls			

Table Salmonella in feed material of animal origin

	S. Derby	S. Infantis	S. Montevideo
Feed material of land animal origin - dairy products - at farm - feed sample - Surveillance - official controls			
Feed material of land animal origin - dairy products - at feed mill - domestic production - Surveillance - official controls			
Feed material of land animal origin - greaves - at retail - domestic production - Surveillance - official controls [1)]	1		
Feed material of land animal origin - meat and bone meal - at feed mill - domestic production - Surveillance - official controls			
Feed material of land animal origin - meat and bone meal - at feed mill - imported - Surveillance - official controls			1
Feed material of land animal origin - poultry offal meal - at feed mill - domestic production - Surveillance - official controls [2)]		2	
Feed material of land animal origin - protein meal - at farm - feed sample - Surveillance - official controls			
Feed material of marine animal origin - fish meal - at farm - feed sample - Surveillance - official controls			
Feed material of marine animal origin - fish meal - at feed mill - imported - Surveillance - official controls			
Feed material of marine animal origin - fish oil - at feed mill - domestic production - Surveillance - official controls			

Table Salmonella in feed material of animal origin

	S. Derby	S. Infantis	S. Montevideo
Pet food - final product - canned products - at retail - imported - Surveillance - official controls			
Pet food - final product - non-pelleted/meal - at feed mill - domestic production - Surveillance - official controls			
Pet food - final product - pelleted - at retail - imported - Surveillance - official controls			

Comments:

[1)] 3 serovars in one sample

[2)] 2 serovars in one sample

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

Serovar	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Birds		Other animals	
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory		27		26	131		2	4		6		27
Number of isolates serotyped	0	27	0	26	131	0	2	4	0	6	0	27
Number of isolates per serovar												
S. 4,5,12:i:-				2								
S. 6,7:-:1,5					7							
S. Abony												2
S. Bovismorbificans					2							
S. Bredeney		1								4		
S. Choleraesuis				1								

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Birds		Other animals	
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory		27		26	131		2	4		6		27
Number of isolates serotyped	0	27	0	26	131	0	2	4	0	6	0	27
Number of isolates per serovar												
S. Derby				2								4
S. Dublin		1										
S. Enteritidis		4			82		1					2
S. Goldcoast												1
S. IV 11:z4,z23:-												2
S. Infantis					22			1				3
S. Inpraw												1
S. Kentucky					3							
S. Kottbus												1
S. Lille					2							
S. London				1								1
S. Mono												1

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Birds		Other animals	
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory		27		26	131		2	4		6		27
Number of isolates serotyped	0	27	0	26	131	0	2	4	0	6	0	27
Number of isolates per serovar												
S. Montevideo					1							
S. Muenchen												1
S. Newport					2			3				
S. Ohio				1								
S. Oranienburg					1							1
S. Saintpaul					1							
S. Sendai												1
S. Tennessee					3							
S. Typhimurium		21		19	5		1			2		3
S. V 48:z41:-												1
S. enterica subsp. arizonae												2

Table Salmonella serovars in food

Serovar	Meat from bovine animals	Meat from pig	Meat from broilers (Gallus gallus)	Meat from other poultry species	Other products of animal origin	Other food
Sources of isolates	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
Number of isolates in the laboratory	1	2	7	1		10
Number of isolates serotyped	0	2	7	1	0	10
Number of isolates per serovar						
S. 4,5,12:i:-		1				1
S. 6,7:-:1,5			2			
S. Agona				1		
S. Egusitoo						1
S. Enteritidis			1			7
S. Infantis			4			1
S. Typhimurium		1				

Table Salmonella serovars in feed

Serovar	Compound feedingstuffs for pigs		Feed material of cereal grain origin		Feed material of land animal origin		Other feed material	
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory	9		5		9		1	
Number of isolates serotyped	9	0	5	0	9	0	1	0
Number of isolates per serovar								
S. 1,13,23:-:-					1			
S. 1,3,19:-:-			1					
S. 6,7:-:1,5					1			
S. 6,7:-:l,w					1			
S. Derby					1			
S. Egusitoo	1							
S. Enteritidis	2				1			
S. Infantis					2			
S. Kentucky	1							
S. Montevideo					1			
S. Tennessee	5		1					
S. Typhimurium					1		1	

Table Salmonella serovars in feed

Serovar	Compound feedingstuffs for pigs		Feed material of cereal grain origin		Feed material of land animal origin		Other feed material	
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory	9		5		9		1	
Number of isolates serotyped	9	0	5	0	9	0	1	0
Number of isolates per serovar								
S. Worthington			3					

Table Salmonella Enteritidis phagetypes in food

Phagetype	Meat from bovine animals	Meat from pig	Meat from broilers (Gallus gallus)	Meat from other poultry species	Other products of animal origin	Other food
	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
						7
	0	0	0	0	0	7
4						1
Not typeable						2
PT 21						3
PT 8						1

Table Salmonella Typhimurium phagetypes in food

Phagetype	Meat from bovine animals	Meat from pig	Meat from broilers (Gallus gallus)	Meat from other poultry species	Other products of animal origin
	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
		1			
	0	1	0	0	0
DT 193		1			

2.1.7 Antimicrobial resistance in Salmonella isolates

A. Antimicrobial resistance in Salmonella in foodstuff derived from cattle

Notification system in place

B. Antimicrobial resistance in Salmonella in pigs

Notification system in place

C. Antimicrobial resistance in Salmonella in poultry

Laboratory methodology used for identification of the microbial isolates

Notification system in place

D. Antimicrobial resistance of Salmonella spp. in animal

Sampling strategy used in monitoring

Frequency of the sampling

The sampling is random from the diseased or dead animals at farm and from subclinical cases at slaughterhouses (cattle, pigs).
The sampling is performed according to Slovak National control programme for Salmonella (poultry). For details see the part Salmonella in animals.

Type of specimen taken

It is described in part Salmonella spp. in animals.

Methods of sampling (description of sampling techniques)

Strains isolated during year were sent from regional state veterinary laboratories to NRL for Salmonella for serotyping and determination of antimicrobial resistance. It is mandatory that at least one isolate from each notified incident of Salmonella is confirmed at NRL.

Procedures for the selection of isolates for antimicrobial testing

The selection for antimicrobial susceptibility testing are carried out from all the isolates at NRL for Salmonella. Only one isolate from each serotype per holding and year (cattle, pigs) and only one isolate from positive flock (poultry) is examined.

Methods used for collecting data

All the susceptibility tests for monitoring antimicrobial resistance are performed at NRL for Salmonella and the results are stored in an appropriate database. Tested isolates are stored at NRL minimal 2 years, isolates from baseline surveys minimal 5 years

Laboratory methodology used for identification of the microbial isolates

Isolation of Salmonella was done based on ISO 6579 including Annex D. The Salmonella isolates were serotyped following the Kauffmann-White scheme.
Antimicrobial susceptibility was tested by a dilution method in cation adjusted Muller-Hinton broth . The tests were performed following the standards for microdilution of the NCCLS/CLSI, ISO, WHO - GSS protocol and the manufacturers guidelines. Microplate Sensititre EUMVS2 from Trek were used for susceptibility testing.
As quality control, strain Escherichia coli ATCC 25922 was included. The NRL participate in EQAS proficiency tests organised by DTU/DFVF Copenhagen regularly yearly.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Antimicrobials recommended by EFSA and European Commission plus additional antimicrobials. For details on antimicrobials included in monitoring and ranges see the respective tables.

Cut-off values used in testing

As breakpoints in antimicrobial resistance monitoring were used epidemiological cutt-off values reccomended by EFSA, EC and European Commitee on Antimicrobial Susceptibility Testing (EUCAST), when were available. For details see breakpoints and quantitative tables.

Control program/mechanisms

The control program/strategies in place

Results of the investigation

S. Enteritidis: Situation is favourable in cattle and pigs. It was observed evident increasing of isolates with resistance to NxCp in broilers. It was noted the only isolate resistant to sulfomethoxazol and trimetoprim (SuW) in laying hens analogous to previous year.
S. Typhimurium: Sporadical incidence of pentaresistant S. Typhimurium was observed in cattle and pigs, other resistant clones (A, T, AT, AST, SSuT, ASSuTW resistance) are involved too. Furthermore were noted AT resistance in broilers and AST resistance in farmed fish.
S. 4,5,12:i:– : Two strains resistant to ASSuT were isolated in pigs.
S. Infantis and S. 6,7:-:1,5: All the strains isolated in broilers and turkeys were resistant to SuTNxCp (some of them were resistant to S too). On the other hand two isolates from laying hens were fully sensitive.
S. Newport: It were noted all the isolates resistant to AT in turkeys and broilers.
S. Bredeney: Individual isolates resistant to SSuTK were observed in cattle and pheasants.
S. Derby: Situation is favourable in pigs , just sporadic T resistance was observed.
S. Ohio: The only strain resistant to SuTNxCp was isolated in pigs.
S. Choleraesuis: The only strain resistant to NxCp was isolated in pigs.
S. Kentucky: Situation is favourable in broilers, just sporadic A resistance was observed.
S. Saintpaul: The only strain resistant to NxCp was isolated in broilers.
S. Dublin, S. London, S. Bovismorbificans, S. Lille, S. Montevideo, S Oranienburg and S. Tennessee: All the strains of these serotypes isolated in animals were fully sensitive.

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

It was observed evident increasing of S. Enteritidis isolates with resistance to nalidixic acid and ciprofloxacin (NxCp) in broilers.
Once again, it was noted the only isolate of S. Enteritidis resistant to sulfomethoxazol and trimetoprim (SuW) in laying hens but in other holding.
All the strains of S. Infantis and S. 6,7:-:1,5 isolated in broilers and turkeys were resistant to SuTNxCp (some of them were resistant to S too).

E. Antimicrobial resistance of Salmonella spp. in food

Sampling strategy used in monitoring

Frequency of the sampling

The sampling is performed according to Plan for sampling and laboratory examination of products of animal origin for official controls. Samples of foodstuffs were taken at all stages of food chain.

Type of specimen taken

It is described in part Salmonella spp. in foodstuffs.

Methods of sampling (description of sampling techniques)

Strains isolated during year were sent from regional state veterinary laboratories to NRL for Salmonella for serotyping and determination of antimicrobial resistance. It is mandatory that at least one isolate from each notified incident of Salmonella is confirmed at NRL.

Procedures for the selection of isolates for antimicrobial testing

The selection for antimicrobial susceptibility testing are carried out from all the isolates at NRL for Salmonella. Only one isolate from each serotype per batch is examined.

Methods used for collecting data

All the susceptibility tests for monitoring antimicrobial resistance are performed at NRL for Salmonella and the results are stored in an appropriate database. Tested isolates are stored at NRL minimal 2 years, isolates from baseline surveys minimal 5 years.

Laboratory methodology used for identification of the microbial isolates

Isolation of Salmonella was done based on ISO 6579 including Annex D. The Salmonella isolates were serotyped following the Kauffmann-White scheme.

Antimicrobial susceptibility was tested by a dilution method in cation adjusted Muller-Hinton broth . The tests were performed following the standards for microdilution of the NCCLS/CLSI, ISO, WHO - GSS protocol and the manufacturers guidelines. Microplate Sensititre EUMVS2 from Trek were used for susceptibility testing.

As quality control, strain Escherichia coli ATCC 25922 was included. The NRL participate in EQAS proficiency tests organised by DTU/DFVF Copenhagen regularly yearly.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Antimicrobials recommended by EFSA and European Commission plus additional antimicrobials. For details on antimicrobials included in monitoring and ranges see the respective tables.

Cut-off values used in testing

As breakpoints in antimicrobial resistance monitoring were used epidemiological cutt-off values reccomended by EFSA, EC and European Commitee on Antimicrobial Susceptibility Testing (EUCAST), when were available. For details see breakpoints and quantitative tables.

Results of the investigation

S. Enteritidis: The only strain isolated in broiler meat was fully sensitive. On the other hand the only strain isolated in poultry offal meal was resistant to NxCp.

S. Infantis and S. 6,7:-:1,5: All the strains isolated in broiler meat as well as in poultry offal meal were resistant to SuTNxCp (some of them were resistant to S too).

S. 4,5,12:i:- : The only strain resistant to ACSSuTF was isolated in pig meat.

S. 4,12:i:- : The only strain resistant to ASSuT was isolated in bovine animal and pig meat.

S. Agona: Two strains resistant to SuTK were isolated in turkey meat.

S. Derby, S. Egusitoo a S. Schwarzengrund: All the strains of these serotypes isolated in foodstuffs were fully sensitive.

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

The limited number of isolates allowed a limited evalution of the resistance level in food category only. All the strains of S. Infantis and S. 6,7:-:1,5 isolated in broiler meat as well as in poultry offal meal were resistant to SuTNxCp (some of them were resistant to S too).

Table Antimicrobial susceptibility testing of Salmonella in Turkeys

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. Infantis		S. Newport	
Isolates out of a monitoring program (yes/no)							yes		yes	
Number of isolates available in the laboratory							2		3	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol							2	0	3	0
Amphenicols - Florfenicol							2	0	3	0
Fluoroquinolones - Ciprofloxacin							2	2	3	0
Quinolones - Nalidixic acid							2	2	3	0
Trimethoprim							2	0	3	0
Aminoglycosides - Streptomycin							2	0	3	0
Aminoglycosides - Gentamicin							2	0	3	0
Aminoglycosides - Kanamycin							2	0	3	0
Penicillins - Ampicillin							2	0	3	3
Tetracyclines - Tetracycline							2	2	3	3
Fully sensitive							2	0	3	0
Resistant to 1 antimicrobial							2	0	3	0
Resistant to 2 antimicrobials							2	0	3	3
Resistant to 3 antimicrobials							2	0	3	0
Resistant to 4 antimicrobials							2	2	3	0
Resistant to >4 antimicrobials							2	0	3	0
Cephalosporins - Cefotaxim							2	0	3	0
Cephalosporins - Ceftazidim							2	0	3	0
Polymyxins - Colistin							2	0	3	0
Sulfonamides - Sulfamethoxazol							2	2	3	0

Table Antimicrobial susceptibility testing of Salmonella in Turkeys

Footnote:

S. Infantis: (S)SuTNxCp resistance - 2 x. Note to (S): MIC = 32 microg/ml.
S. Newport: AT resistance – 3 x.

Table Antimicrobial susceptibility testing of Salmonella in Pigs

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. 4,5,12:i:-		S. Choleraesuis		S. Derby		S. London		S. Montevideo		S. Ohio	
Isolates out of a monitoring program (yes/no)	no		no				no		no		no		no		no		no	
Number of isolates available in the laboratory	1		9				2		1		3		1		2		1	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	1	0	9	3			2	0	1	0	3	0	1	0	2	0	1	0
Amphenicols - Florfenicol	1	0	9	2			2	0	1	0	3	0	1	0	2	0	1	0
Fluoroquinolones - Ciprofloxacin	1	0	9	0			2	0	1	1	3	0	1	0	2	0	1	1
Quinolones - Nalidixic acid	1	0	9	0			2	0	1	1	3	0	1	0	2	0	1	1
Trimethoprim	1	0	9	1			2	0	1	0	3	0	1	0	2	0	1	0
Aminoglycosides - Streptomycin	1	0	9	5			2	2	1	0	3	0	1	0	2	0	1	0
Aminoglycosides - Gentamicin	1	0	9	0			2	0	1	0	3	0	1	0	2	0	1	0
Aminoglycosides - Kanamycin	1	0	9	0			2	0	1	0	3	0	1	0	2	0	1	0
Penicillins - Ampicillin	1	0	9	6			2	2	1	0	3	0	1	0	2	0	1	0
Tetracyclines - Tetracycline	1	0	9	8			2	2	1	0	3	1	1	0	2	0	1	1
Fully sensitive	1	1	9	1			2	0	1	0	3	2	1	1	2	2	1	0
Resistant to 1 antimicrobial	1	0	9	1			2	0	1	0	3	1	1	0	2	0	1	0
Resistant to 2 antimicrobials	1	0	9	2			2	0	1	1	3	0	1	0	2	0	1	0
Resistant to 3 antimicrobials	1	0	9	1			2	0	1	0	3	0	1	0	2	0	1	0
Resistant to 4 antimicrobials	1	0	9	0			2	2	1	0	3	0	1	0	2	0	1	1
Resistant to >4 antimicrobials	1	0	9	4			2	0	1	0	3	0	1	0	2	0	1	0
Number of multiresistant S. Typhimurium - with penta resistance			9	3														
Number of multiresistant S. Typhimurium - resistant to other antimicrobials			9	2														
Cephalosporins - Cefotaxim	1	0	9	0			2	0	1	0	3	0	1	0	2	0	1	0
Cephalosporins - Ceftazidim	1	0	9	0			2	0	1	0	3	0	1	0	2	0	1	0

Table Antimicrobial susceptibility testing of Salmonella in Pigs

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. 4,5,12:i:-		S. Choleraesuis		S. Derby		S. London		S. Montevideo		S. Ohio	
Isolates out of a monitoring program (yes/no)	no		no				no		no		no		no		no		no	
Number of isolates available in the laboratory	1		9				2		1		3		1		2		1	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Polymyxins - Colistin	1	0	9	0			2	0	1	0	3	0	1	0	2	0	1	0
Sulfonamides - Sulfamethoxazol	1	0	9	5			2	2	1	0	3	0	1	0	2	0	1	1

Footnote:

S. Enteritidis: Fully sensitive – 1 x.
S. Typhimurium: Fully sensitive - 1 x, T resistance - 1 x, AT resistance - 2 x, SSuT resistance - 1 x, ASSuTW resistance- 1 x, ACSSuT resistance - 1 x, ACSSuTF resistance - 2 x.
S. 4,5,12:i:- : ASSuT resistance - 2 x.
S. Derby: Fully sensitive - 2 x, T resistance - 1 x.
S. Choleraesuis: NxCp(S) resistance – 1 x. Note to (S): MIC = 32 microg/ml
S. Ohio: SuTNxCp resistance - 1 x.
Other serotypes in the quantitative tables: Fully sensitive – 3 x / S. Montevideo – 2 x, S. London - 1 x.

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

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. 6,7:-:1,5		S. Bovismorbificans		S. Infantis		S. Kentucky		S. Lille		S. Montevideo		S. Newport		S. Saintpaul		S. Tennessee	
Isolates out of a monitoring program (yes/no)	yes		yes				yes		yes		yes		yes		yes		yes		yes		yes		yes	
Number of isolates available in the laboratory	43		2				6		2		16		8		2		1		2		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	N	n
Amphenicols - Chloramphenicol	43	0	2	0			6	0	2	0	16	0	8	0	2	0	1	0	2	0	1	0	1	0
Amphenicols - Florfenicol	43	0	2	0			6	0	2	0	16	0	8	0	2	0	1	0	2	0	1	0	1	0
Fluoroquinolones - Ciprofloxacin	43	9	2	0			6	6	2	0	16	16	8	0	2	0	1	0	2	0	1	1	1	0
Quinolones - Nalidixic acid	43	9	2	0			6	6	2	0	16	16	8	0	2	0	1	0	2	0	1	1	1	0
Trimethoprim	43	0	2	0			6	0	2	0	16	0	8	0	2	0	1	0	2	0	1	0	1	0
Aminoglycosides - Streptomycin	43	0	2	0			6	1	2	0	16	3	8	0	2	0	1	0	2	0	1	0	1	0
Aminoglycosides - Gentamicin	43	0	2	0			6	0	2	0	16	0	8	0	2	0	1	0	2	0	1	0	1	0
Aminoglycosides - Kanamycin	43	0	2	0			6	0	2	0	16	0	8	0	2	0	1	0	2	0	1	0	1	0
Penicillins - Ampicillin	43	0	2	1			6	0	2	0	16	0	8	1	2	0	1	0	2	2	1	0	1	0
Tetracyclines - Tetracycline	43	0	2	1			6	6	2	0	16	16	8	0	2	0	1	0	2	2	1	0	1	0
Fully sensitive	43	34	2	1			6	0	2	2	16	0	8	7	2	2	1	1	2	0	1	0	1	1
Resistant to 1 antimicrobial	43	0	2	0			6	0	2	0	16	0	8	1	2	0	1	0	2	0	1	0	1	0
Resistant to 2 antimicrobials	43	9	2	1			6	0	2	0	16	0	8	0	2	0	1	0	2	2	1	1	1	0
Resistant to 3 antimicrobials	43	0	2	0			6	0	2	0	16	0	8	0	2	0	1	0	2	0	1	0	1	0
Resistant to 4 antimicrobials	43	0	2	0			6	5	2	0	16	13	8	0	2	0	1	0	2	0	1	0	1	0
Resistant to >4 antimicrobials	43	0	2	0			6	1	2	0	16	3	8	0	2	0	1	0	2	0	1	0	1	0
Number of multiresistant S. Typhimurium - resistant to other antimicrobials			2	0																				
Number of multiresistant S. Typhimurium - with penta resistance			2	0																				
Cephalosporins - Cefotaxim	43	0	2	0			6	0	2	0	16	0	8	0	2	0	1	0	2	0	1	0	1	0
Cephalosporins - Ceftazidim	43	0	2	0			6	0	2	0	16	0	8	0	2	0	1	0	2	0	1	0	1	0

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

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. 6,7:-:1,5		S. Bovismorbificans		S. Infantis		S. Kentucky		S. Lille		S. Montevideo		S. Newport		S. Saintpaul		S. Tennessee	
Isolates out of a monitoring program (yes/no)	yes		yes				yes		yes		yes		yes		yes		yes		yes		yes		yes	
Number of isolates available in the laboratory	43		2				6		2		16		8		2		1		2		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	N	n
Polymyxins - Colistin	43	0	2	0			6	0	2	0	16	0	8	0	2	0	1	0	2	0	1	0	1	0
Sulfonamides - Sulfamethoxazol	43	0	2	0			6	6	2	0	16	16	8	0	2	0	1	0	2	0	1	0	1	0

Footnote:

S.Enteritidis: Fully sensitive - 34 x, NxCp resistance - 9 x.
S.Typhimurium: Fully sensitive - 1 x, AT resistance - 1 x.
S. Infantis: SuTNxCp resistance - 3 x, (S)SuTNxCp resistance - 10 x, SSuTNxCp resistance - 3 x. Note to (S): MIC = 32 microg/ml.
S. 6,7:-:1,5: SuTNxCp resistance - 2 x, (S)SuTNxCp resistance - 3 x, SSuTNxCp resistance - 1 x. Note to (S): MIC = 32 microg/ml. Besides 3 isolates were O6 negative.
S. Newport: AT resistance - 2 x.
S. Saintpaul: NxCp resistance - 1 x.
S. Kentucky: Fully sensitive - 7 x, A resistance - 1 x.
Other serotypes in the quantitative tables: Fully sensitive – 6 x / S. Bovismorbificans – 2 x, S. Lille – 2 x, S. Montevideo – 1 x, S. Tennessee – 1 x.

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

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. Infantis		S. Oranienburg		S. Tennessee	
Isolates out of a monitoring program (yes/no)	yes		yes				yes		yes		yes	
Number of isolates available in the laboratory	19		1				2		1		2	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	19	0	1	0			2	0	1	0	2	0
Amphenicols - Florfenicol	19	0	1	0			2	0	1	0	2	0
Fluoroquinolones - Ciprofloxacin	19	1	1	0			2	0	1	0	2	0
Quinolones - Nalidixic acid	19	1	1	0			2	0	1	0	2	0
Trimethoprim	19	1	1	0			2	0	1	0	2	0
Aminoglycosides - Streptomycin	19	0	1	0			2	0	1	0	2	0
Aminoglycosides - Gentamicin	19	0	1	0			2	0	1	0	2	0
Aminoglycosides - Kanamycin	19	0	1	0			2	0	1	0	2	0
Penicillins - Ampicillin	19	0	1	0			2	0	1	0	2	0
Tetracyclines - Tetracycline	19	0	1	0			2	0	1	0	2	0
Fully sensitive	19	17	1	1			2	2	1	1	2	2
Resistant to 1 antimicrobial	19	0	1	0			2	0	1	0	2	0
Resistant to 2 antimicrobials	19	2	1	0			2	0	1	0	2	0
Resistant to 3 antimicrobials	19	0	1	0			2	0	1	0	2	0
Resistant to 4 antimicrobials	19	0	1	0			2	0	1	0	2	0
Resistant to >4 antimicrobials	19	0	1	0			2	0	1	0	2	0
Number of multiresistant S. Typhimurium - with penta resistance			1	0								
Number of multiresistant S. Typhimurium - resistant to other antimicrobials			1	0								
Cephalosporins - Cefotaxim	19	0	1	0			2	0	1	0	2	0
Cephalosporins - Ceftazidim	19	0	1	0			2	0	1	0	2	0

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

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. Infantis		S. Oranienburg		S. Tennessee	
Isolates out of a monitoring program (yes/no)	yes		yes				yes		yes		yes	
Number of isolates available in the laboratory	19		1				2		1		2	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n
Polymyxins - Colistin	19	0	1	0			2	0	1	0	2	0
Sulfonamides - Sulfamethoxazol	19	1	1	0			2	0	1	0	2	0

Footnote:

S. Enteritidis: Fully sensitive - 17 x, NxCp resistance - 1 x, SuW resistance - 1 x.
S. Typhimurium: Fully sensitive – 1 x.
S. Infantis: Fully sensitive – 2 x.
Other serotypes in the quantitative tables: Fully sensitive - 3 x / S. Tennessee - 2 x, S. Oranienburg - 1 x.

Table Antimicrobial susceptibility testing of Salmonella in Cattle (bovine animals)

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. Bredeney		S. Dublin		S. Montevideo	
Isolates out of a monitoring program (yes/no)	no		no				no		no		no	
Number of isolates available in the laboratory	3		3				1		1		1	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	3	0	3	2			1	0	1	0	1	0
Amphenicols - Florfenicol	3	0	3	2			1	0	1	0	1	0
Fluoroquinolones - Ciprofloxacin	3	0	3	1			1	0	1	0	1	0
Quinolones - Nalidixic acid	3	0	3	1			1	0	1	0	1	0
Trimethoprim	3	0	3	0			1	0	1	0	1	0
Aminoglycosides - Streptomycin	3	0	3	3			1	1	1	0	1	0
Aminoglycosides - Gentamicin	3	0	3	0			1	0	1	0	1	0
Aminoglycosides - Kanamycin	3	0	3	0			1	1	1	0	1	0
Penicillins - Ampicillin	3	0	3	3			1	0	1	0	1	0
Tetracyclines - Tetracycline	3	0	3	3			1	1	1	0	1	0
Fully sensitive	3	3	3	0			1	0	1	1	1	1
Resistant to 1 antimicrobial	3	0	3	0			1	0	1	0	1	0
Resistant to 2 antimicrobials	3	0	3	0			1	0	1	0	1	0
Resistant to 3 antimicrobials	3	0	3	1			1	0	1	0	1	0
Resistant to 4 antimicrobials	3	0	3	0			1	1	1	0	1	0
Resistant to >4 antimicrobials	3	0	3	2			1	0	1	0	1	0
Number of multiresistant S. Typhimurium - with penta resistance			3	2								
Number of multiresistant S. Typhimurium - resistant to other antimicrobials			3	2								
Cephalosporins - Cefotaxim	3	0	3	0			1	0	1	0	1	0
Cephalosporins - Ceftazidim	3	0	3	0			1	0	1	0	1	0

Table Antimicrobial susceptibility testing of Salmonella in Cattle (bovine animals)

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. Bredeney		S. Dublin		S. Montevideo	
Isolates out of a monitoring program (yes/no)	no		no				no		no		no	
Number of isolates available in the laboratory	3		3				1		1		1	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n
Polymyxins - Colistin	3	0	3	0			1	0	1	0	1	0
Sulfonamides - Sulfamethoxazol	3	0	3	2			1	1	1	0	1	0

Footnote:

S. Enteritidis: Fully sensitive – 3 x.
S. Typhimurium: AST resistance - 1 x, ACSSuTF resistance - 1 x, ACSSuTNxCpF resistance- 1 x.
S. Bredeney: SSuTK resistance - 1x.
S. Dublin: Fully sensitive – 1 x.
Other serotypes in the quantitative tables: Fully sensitive – 1 x / S. Montevideo – 1 x.

Table Antimicrobial susceptibility testing of Salmonella in meat from broilers (Gallus gallus)

Salmonella	Salmonella spp.		S. 6,7:-:1,5		S. Enteritidis		S. Infantis		S. Schwarzengrund	
Isolates out of a monitoring program (yes/no)			yes		yes		yes		yes	
Number of isolates available in the laboratory			2		1		4		1	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol			2	0	1	0	4	0	1	0
Amphenicols - Florfenicol			2	0	1	0	4	0	1	0
Fluoroquinolones - Ciprofloxacin			2	2	1	0	4	4	1	0
Quinolones - Nalidixic acid			2	2	1	0	4	4	1	0
Trimethoprim			2	0	1	0	4	0	1	0
Aminoglycosides - Streptomycin			2	0	1	0	4	0	1	0
Aminoglycosides - Gentamicin			2	0	1	0	4	0	1	0
Aminoglycosides - Kanamycin			2	0	1	0	4	0	1	0
Penicillins - Ampicillin			2	0	1	0	4	0	1	0
Tetracyclines - Tetracycline			2	2	1	0	4	4	1	0
Fully sensitive			2	0	1	1	4	0	1	1
Resistant to 1 antimicrobial			2	0	1	0	4	0	1	0
Resistant to 2 antimicrobials			2	0	1	0	4	0	1	0
Resistant to 3 antimicrobials			2	0	1	0	4	0	1	0
Resistant to 4 antimicrobials			2	2	1	0	4	4	1	0
Resistant to >4 antimicrobials			2	0	1	0	4	0	1	0
Cephalosporins - Cefotaxim			2	0	1	0	4	0	1	0
Cephalosporins - Ceftazidim			2	0	1	0	4	0	1	0
Polymyxins - Colistin			2	0	1	0	4	0	1	0
Sulfonamides - Sulfamethoxazol			2	0	1	0	4	4	1	0

Table Antimicrobial susceptibility testing of Salmonella in meat from broilers (Gallus gallus)

Footnote:

S.Enteritidis: Fully sensitive - 1 x.
S. Infantis: SuTNxCp resistance - 1 x, (S)SuTNxCp resistance - 3 x. Note to (S): MIC = 32 microg/ml.
S. 6,7:-:1,5: SuTNxCp resistance - 1 x, (S)SuTNxCp resistance - 1 x. Note to (S): MIC=32 microg/ml.
S. Schwarzengrund: Fully sensitive – 1 x.

Table Antimicrobial susceptibility testing of Salmonella in meat from pig

Salmonella	Salmonella spp.		S. 4,5,12:i:-	
Isolates out of a monitoring program (yes/no)			yes	
Number of isolates available in the laboratory			1	
Antimicrobials:	N	n	N	n
Amphenicols - Chloramphenicol			1	1
Amphenicols - Florfenicol			1	1
Fluoroquinolones - Ciprofloxacin			1	0
Quinolones - Nalidixic acid			1	0
Trimethoprim			1	0
Aminoglycosides - Streptomycin			1	1
Aminoglycosides - Gentamicin			1	0
Aminoglycosides - Kanamycin			1	0
Penicillins - Ampicillin			1	1
Tetracyclines - Tetracycline			1	1
Fully sensitive			1	0
Resistant to 1 antimicrobial			1	0
Resistant to 2 antimicrobials			1	0
Resistant to 3 antimicrobials			1	0
Resistant to 4 antimicrobials			1	0
Resistant to >4 antimicrobials			1	1
Cephalosporins - Cefotaxim			1	0
Cephalosporins - Ceftazidim			1	0
Polymyxins - Colistin			1	0
Sulfonamides - Sulfamethoxazol			1	1

Table Antimicrobial susceptibility testing of Salmonella in meat from pig

Footnote:

ACSSuTF resistanca - 1 x.

Table Antimicrobial susceptibility testing of Salmonella in Compound feedingstuffs for cattle

Salmonella	S. Enteritidis		S. Typhimurium		S. Egusitoo	
Isolates out of a monitoring program (yes/no)					yes	
Number of isolates available in the laboratory					1	
Antimicrobials:	N	n	N	n	N	n
Amphenicols - Chloramphenicol					1	0
Amphenicols - Florfenicol					1	0
Fluoroquinolones - Ciprofloxacin					1	0
Quinolones - Nalidixic acid					1	0
Trimethoprim					1	0
Aminoglycosides - Gentamicin					1	0
Aminoglycosides - Streptomycin					1	0
Aminoglycosides - Kanamycin					1	0
Penicillins - Ampicillin					1	0
Tetracyclines - Tetracycline					1	0
Cephalosporins - Cefotaxim					1	0
Cephalosporins - Ceftazidim					1	0
Fully sensitive					1	1
Polymyxins - Colistin					1	0
Resistant to 1 antimicrobial					1	0
Resistant to 2 antimicrobials					1	0
Resistant to 3 antimicrobials					1	0
Resistant to 4 antimicrobials					1	0
Resistant to >4 antimicrobials					1	0
Sulfonamides - Sulfamethoxazol					1	0

Table Antimicrobial susceptibility testing of Salmonella in Compound feedingstuffs for cattle

Footnote:

S. Egusitoo: Fully sensitive - 1 x.

Table Antimicrobial susceptibility testing of Salmonella in Compound feedingstuffs for poultry (non specified)

Salmonella	S. Enteritidis		S. Typhimurium		S. Kentucky		S. Tennessee	
Isolates out of a monitoring program (yes/no)	yes				yes		yes	
Number of isolates available in the laboratory	1				1		5	
Antimicrobials:	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	1	0			1	0	5	0
Amphenicols - Florfenicol	1	0			1	0	5	0
Fluoroquinolones - Ciprofloxacin	1	0			1	0	5	0
Quinolones - Nalidixic acid	1	0			1	0	5	0
Trimethoprim	1	0			1	0	5	0
Aminoglycosides - Streptomycin	1	0			1	0	5	0
Aminoglycosides - Gentamicin	1	0			1	0	5	0
Aminoglycosides - Kanamycin	1	0			1	0	5	0
Penicillins - Ampicillin	1	0			1	0	5	0
Tetracyclines - Tetracycline	1	0			1	0	5	0
Cephalosporins - Cefotaxim	1	0			1	0	5	0
Cephalosporins - Ceftazidim	1	0			1	0	5	0
Fully sensitive	1	1			1	1	5	5
Polymyxins - Colistin	1	0			1	0	5	0
Resistant to 1 antimicrobial	1	0			1	0	5	0
Resistant to 2 antimicrobials	1	0			1	0	5	0
Resistant to 3 antimicrobials	1	0			1	0	5	0
Resistant to 4 antimicrobials	1	0			1	0	5	0
Resistant to >4 antimicrobials	1	0			1	0	5	0
Sulfonamides - Sulfamethoxazol	1	0			1	0	5	0

Table Antimicrobial susceptibility testing of Salmonella in Compound feedingstuffs for poultry (non specified)

Footnote:

S. Enteritidis: Fully sensitive - 1 x.
S. Kentucky: Fully sensitive - 1 x.
S. Tennessee: Fully sensitive - 5 x.

Table Antimicrobial susceptibility testing of Salmonella in Ducks

Salmonella	S. Enteritidis	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	1	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	1	0
Amphenicols - Florfenicol	1	0
Tetracyclines - Tetracycline	1	0
Fluoroquinolones - Ciprofloxacin	1	0
Quinolones - Nalidixic acid	1	0
Trimethoprim	1	0
Aminoglycosides - Streptomycin	1	0
Aminoglycosides - Gentamicin	1	0
Aminoglycosides - Kanamycin	1	0
Penicillins - Ampicillin	1	0
Cephalosporins - Cefotaxim	1	0
Cephalosporins - Ceftazidim	1	0
Fully sensitive	1	1
Polymyxins - Colistin	1	0
Resistant to 1 antimicrobial	1	0
Resistant to 2 antimicrobials	1	0
Resistant to 3 antimicrobials	1	0
Resistant to 4 antimicrobials	1	0
Resistant to >4 antimicrobials	1	0
Sulfonamides - Sulfamethoxazol	1	0

Table Antimicrobial susceptibility testing of Salmonella in Ducks

Footnote:

Fully sensitive - 1 x.

Table Antimicrobial susceptibility testing of Salmonella in Geese

Salmonella	S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	1	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	1	0
Amphenicols - Florfenicol	1	0
Tetracyclines - Tetracycline	1	0
Fluoroquinolones - Ciprofloxacin	1	0
Quinolones - Nalidixic acid	1	0
Trimethoprim	1	0
Aminoglycosides - Streptomycin	1	0
Aminoglycosides - Gentamicin	1	0
Aminoglycosides - Kanamycin	1	0
Penicillins - Ampicillin	1	0
Cephalosporins - Cefotaxim	1	0
Cephalosporins - Ceftazidim	1	0
Fully sensitive	1	1
Number of multiresistant S. Typhimurium - resistant to other antimicrobials	1	0
Number of multiresistant S. Typhimurium - with penta resistance	1	0
Polymyxins - Colistin	1	0
Resistant to 1 antimicrobial	1	0
Resistant to 2 antimicrobials	1	0
Resistant to 3 antimicrobials	1	0
Resistant to 4 antimicrobials	1	0

Table Antimicrobial susceptibility testing of Salmonella in Geese

Salmonella	S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	1	
Antimicrobials:	N	n
Resistant to >4 antimicrobials	1	0
Sulfonamides - Sulfamethoxazol	1	0

Footnote:

Fully sensitive - 1 x.

Table Antimicrobial susceptibility testing of Salmonella in Pheasants

Salmonella	S. Bredeney		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes		yes	
Number of isolates available in the laboratory	1		1	
Antimicrobials:	N	n	N	n
Amphenicols - Chloramphenicol	1	0	1	0
Amphenicols - Florfenicol	1	0	1	0
Tetracyclines - Tetracycline	1	1	1	0
Fluoroquinolones - Ciprofloxacin	1	0	1	0
Quinolones - Nalidixic acid	1	0	1	0
Trimethoprim	1	0	1	0
Aminoglycosides - Streptomycin	1	1	1	0
Aminoglycosides - Gentamicin	1	0	1	0
Aminoglycosides - Kanamycin	1	1	1	0
Penicillins - Ampicillin	1	0	1	0
Cephalosporins - Cefotaxim	1	0	1	0
Cephalosporins - Ceftazidim	1	0	1	0
Fully sensitive	1	0	1	1
Number of multiresistant S. Typhimurium - resistant to other antimicrobials			1	0
Number of multiresistant S. Typhimurium - with penta resistance			1	0
Polymyxins - Colistin	1	0	1	0
Resistant to 1 antimicrobial	1	0	1	0
Resistant to 2 antimicrobials	1	0	1	0
Resistant to 3 antimicrobials	1	0	1	0
Resistant to 4 antimicrobials	1	1	1	0

Table Antimicrobial susceptibility testing of Salmonella in Pheasants

Salmonella	S. Bredeney		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes		yes	
Number of isolates available in the laboratory	1		1	
Antimicrobials:	N	n	N	n
Resistant to >4 antimicrobials	1	0	1	0
Sulfonamides - Sulfamethoxazol	1	1	1	0

Footnote:

S. Typhimurium - Fully sensitive - 1 x.
S. Bredeney - SSuTK resistance - 1 x.

Table Antimicrobial susceptibility testing of Salmonella in Fish - farmed

Salmonella	S. Typhimurium	
Isolates out of a monitoring program (yes/no)	no	
Number of isolates available in the laboratory	1	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	1	0
Amphenicols - Florfenicol	1	0
Tetracyclines - Tetracycline	1	1
Fluoroquinolones - Ciprofloxacin	1	0
Quinolones - Nalidixic acid	1	0
Trimethoprim	1	0
Aminoglycosides - Streptomycin	1	1
Aminoglycosides - Gentamicin	1	0
Aminoglycosides - Kanamycin	1	0
Penicillins - Ampicillin	1	1
Cephalosporins - Cefotaxim	1	0
Cephalosporins - Ceftazidim	1	0
Fully sensitive	1	0
Number of multiresistant S. Typhimurium - resistant to other antimicrobials	1	0
Number of multiresistant S. Typhimurium - with penta resistance	1	0
Polymyxins - Colistin	1	0
Resistant to 1 antimicrobial	1	0
Resistant to 2 antimicrobials	1	0
Resistant to 3 antimicrobials	1	1
Resistant to 4 antimicrobials	1	0

Table Antimicrobial susceptibility testing of Salmonella in Fish - farmed

Salmonella	S. Typhimurium	
Isolates out of a monitoring program (yes/no)	no	
Number of isolates available in the laboratory	1	
Antimicrobials:	N	n
Resistant to >4 antimicrobials	1	0
Sulfonamides - Sulfamethoxazol	1	0

Footnote:

AST resistance - 1 x (crucian carp).

Table Antimicrobial susceptibility testing of Salmonella in Meat from bovine animals and pig

Salmonella	S. 4,12:i:-	
Isolates out of a monitoring program (yes/no)	no	
Number of isolates available in the laboratory	1	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	1	0
Amphenicols - Florfenicol	1	0
Tetracyclines - Tetracycline	1	1
Fluoroquinolones - Ciprofloxacin	1	0
Quinolones - Nalidixic acid	1	0
Trimethoprim	1	0
Aminoglycosides - Streptomycin	1	1
Aminoglycosides - Gentamicin	1	0
Aminoglycosides - Kanamycin	1	0
Penicillins - Ampicillin	1	1
Cephalosporins - Cefotaxim	1	0
Cephalosporins - Ceftazidim	1	0
Fully sensitive	1	0
Polymyxins - Colistin	1	0
Resistant to 1 antimicrobial	1	0
Resistant to 2 antimicrobials	1	0
Resistant to 3 antimicrobials	1	0
Resistant to 4 antimicrobials	1	1
Resistant to >4 antimicrobials	1	0
Sulfonamides - Sulfamethoxazol	1	1

Table Antimicrobial susceptibility testing of Salmonella in Meat from bovine animals and pig

Footnote:

ASSuT resistance - 1 x.

Table Antimicrobial susceptibility testing of Salmonella in Meat from turkey

Salmonella	S. Agona	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	2	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	2	0
Amphenicols - Florfenicol	2	0
Tetracyclines - Tetracycline	2	2
Fluoroquinolones - Ciprofloxacin	2	0
Quinolones - Nalidixic acid	2	0
Trimethoprim	2	0
Aminoglycosides - Streptomycin	2	0
Aminoglycosides - Gentamicin	2	0
Aminoglycosides - Kanamycin	2	2
Penicillins - Ampicillin	2	0
Cephalosporins - Cefotaxim	2	0
Cephalosporins - Ceftazidim	2	0
Fully sensitive	2	0
Polymyxins - Colistin	2	0
Resistant to 1 antimicrobial	2	0
Resistant to 2 antimicrobials	2	0
Resistant to 3 antimicrobials	2	2
Resistant to 4 antimicrobials	2	0
Resistant to >4 antimicrobials	2	0
Sulfonamides - Sulfamethoxazol	2	2

Table Antimicrobial susceptibility testing of Salmonella in Meat from turkey

Footnote:

SuTK resistance - 2 x.

Table Antimicrobial susceptibility testing of Salmonella in Other food

Salmonella	S. Derby		S. Egusitoo	
Isolates out of a monitoring program (yes/no)	no		yes	
Number of isolates available in the laboratory	1		1	
Antimicrobials:	N	n	N	n
Amphenicols - Chloramphenicol	1	0	1	0
Amphenicols - Florfenicol	1	0	1	0
Tetracyclines - Tetracycline	1	0	1	0
Fluoroquinolones - Ciprofloxacin	1	0	1	0
Quinolones - Nalidixic acid	1	0	1	0
Trimethoprim	1	0	1	0
Aminoglycosides - Streptomycin	1	0	1	0
Aminoglycosides - Gentamicin	1	0	1	0
Aminoglycosides - Kanamycin	1	0	1	0
Penicillins - Ampicillin	1	0	1	0
Cephalosporins - Cefotaxim	1	0	1	0
Cephalosporins - Ceftazidim	1	0	1	0
Fully sensitive	1	1	1	1
Polymyxins - Colistin	1	0	1	0
Resistant to 1 antimicrobial	1	0	1	0
Resistant to 2 antimicrobials	1	0	1	0
Resistant to 3 antimicrobials	1	0	1	0
Resistant to 4 antimicrobials	1	0	1	0
Resistant to >4 antimicrobials	1	0	1	0
Sulfonamides - Sulfamethoxazol	1	0	1	0

Table Antimicrobial susceptibility testing of Salmonella in Other food

Footnote:

S. Derby: Fully sensitive - 1 x / Other products of animal origin - gelatin - HACCP and own checks.
S. Egusitoo: Fully sensitive - 1 x / Other processed food products and prepared dishes - noodles - official controls.

Table Antimicrobial susceptibility testing of Salmonella in Feed material of land animal origin

Salmonella	S. 1,13,23:i:-		S. 6,7:-:1,5		S. 6,7:-:l,w		S. Derby		S. Enteritidis		S. Infantis		S. Montevideo		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes		yes		yes		yes		yes		yes		yes		yes	
Number of isolates available in the laboratory	1		1		1		1		2		2		1		1	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	1	0	1	0	1	0	1	0	2	0	2	0	1	0	1	0
Amphenicols - Florfenicol	1	0	1	0	1	0	1	0	2	0	2	0	1	0	1	0
Tetracyclines - Tetracycline	1	0	1	1	1	0	1	0	2	0	2	2	1	0	1	1
Fluoroquinolones - Ciprofloxacin	1	0	1	1	1	0	1	0	2	1	2	2	1	0	1	0
Quinolones - Nalidixic acid	1	0	1	1	1	0	1	0	2	1	2	2	1	0	1	0
Trimethoprim	1	0	1	0	1	0	1	0	2	0	2	0	1	0	1	0
Aminoglycosides - Streptomycin	1	0	1	0	1	0	1	0	2	0	2	0	1	0	1	1
Aminoglycosides - Gentamicin	1	0	1	0	1	0	1	0	2	0	2	0	1	0	1	0
Aminoglycosides - Kanamycin	1	0	1	0	1	0	1	0	2	0	2	0	1	0	1	0
Penicillins - Ampicillin	1	0	1	0	1	1	1	0	2	0	2	0	1	0	1	1
Cephalosporins - Cefotaxim	1	0	1	0	1	0	1	0	2	0	2	0	1	0	1	0
Cephalosporins - Ceftazidim	1	0	1	0	1	0	1	0	2	0	2	0	1	0	1	0
Fully sensitive	1	1	1	0	1	0	1	1	2	1	2	0	1	1	1	0
Number of multiresistant S. Typhimurium - resistant to other antimicrobials															1	0
Number of multiresistant S. Typhimurium - with penta resistance															1	0
Polymyxins - Colistin	1	0	1	0	1	0	1	0	2	0	2	0	1	0	1	0
Resistant to 1 antimicrobial	1	0	1	0	1	1	1	0	2	0	2	0	1	0	1	0
Resistant to 2 antimicrobials	1	0	1	0	1	0	1	0	2	1	2	0	1	0	1	0
Resistant to 3 antimicrobials	1	0	1	0	1	0	1	0	2	0	2	0	1	0	1	0
Resistant to 4 antimicrobials	1	0	1	1	1	0	1	0	2	0	2	2	1	0	1	1

Table Antimicrobial susceptibility testing of Salmonella in Feed material of land animal origin

Salmonella	S. 1,13,23:i:-		S. 6,7:-:1,5		S. 6,7:-:l,w		S. Derby		S. Enteritidis		S. Infantis		S. Montevideo		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes		yes		yes		yes		yes		yes		yes		yes	
Number of isolates available in the laboratory	1		1		1		1		2		2		1		1	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Resistant to >4 antimicrobials	1	0	1	0	1	0	1	0	2	0	2	0	1	0	1	0
Sulfonamides - Sulfamethoxazol	1	0	1	1	1	0	1	0	2	0	2	2	1	0	1	1

Footnote:

S. Enteritidis: Fully sensitive – 1 x / Pet food – final product (salami), NxCp resistance - 1 x / Poultry offal meal.
S. Infantis: SuTNxCp resistance - 1 x, (S)SuTNxCp resistance – 1 x / Poultry offal meal. Note to (S): MIC = 32 microg/ml.
S. 6,7:-:1,5: (S)SuTNxCp resistance – 1 x / Poultry offal meal. Note to (S): MIC = 32 microg/ml.
S. Typhimurium: ASSuT resistance – 1 x / Meat and bone meal.
S. Montevideo: Fully sensitive – 1 x / Meat and bone meal.
S. Derby: Fully sensitive – 1 x / Pet food – greaves.
S. 1,13,23:-:-: Fully sensitive – 1 x / Pet food – greaves.
S. 6,7:-:l,w: A resistance – 1 x / Pet food – greaves.

Table Antimicrobial susceptibility testing of Salmonella in Other feed material

Salmonella	S. 1,3,19:-:-		S. Tennessee		S. Typhimurium		S. Worthington	
Isolates out of a monitoring program (yes/no)	yes		yes		yes		yes	
Number of isolates available in the laboratory	1		1		1		3	
Antimicrobials:	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	1	0	1	0	1	0	3	0
Amphenicols - Florfenicol	1	0	1	0	1	0	3	0
Tetracyclines - Tetracycline	1	0	1	0	1	1	3	0
Fluoroquinolones - Ciprofloxacin	1	0	1	0	1	0	3	0
Quinolones - Nalidixic acid	1	0	1	0	1	0	3	0
Trimethoprim	1	0	1	0	1	0	3	0
Aminoglycosides - Streptomycin	1	0	1	0	1	1	3	0
Aminoglycosides - Gentamicin	1	0	1	0	1	0	3	0
Aminoglycosides - Kanamycin	1	0	1	0	1	0	3	0
Penicillins - Ampicillin	1	0	1	0	1	1	3	0
Cephalosporins - Cefotaxim	1	0	1	0	1	0	3	0
Cephalosporins - Ceftazidim	1	0	1	0	1	0	3	0
Fully sensitive	1	1	1	1	1	0	3	3
Number of multiresistant S. Typhimurium - resistant to other antimicrobials					1	0		
Number of multiresistant S. Typhimurium - with penta resistance					1	0		
Polymyxins - Colistin	1	0	1	0	1	0	3	0
Resistant to 1 antimicrobial	1	0	1	0	1	0	3	0
Resistant to 2 antimicrobials	1	0	1	0	1	0	3	3
Resistant to 3 antimicrobials	1	0	1	0	1	1	3	0
Resistant to 4 antimicrobials	1	0	1	0	1	0	3	0

Table Antimicrobial susceptibility testing of Salmonella in Other feed material

Salmonella	S. 1,3,19:-:-		S. Tennessee		S. Typhimurium		S. Worthington	
Isolates out of a monitoring program (yes/no)	yes		yes		yes		yes	
Number of isolates available in the laboratory	1		1		1		3	
Antimicrobials:	N	n	N	n	N	n	N	n
Resistant to >4 antimicrobials	1	0	1	0	1	0	3	0
Sulfonamides - Sulfamethoxazol	1	0	1	0	1	0	3	0

Footnote:

S. Typhimurium: AST resistance- 1 x / Other plants - fresh plants.
S. 1,3,19: Fully sensitive - 1 x / Maize derived.
S. Tennessee: Fully sensitive - 1 x / Rape seed derived.
S. Worthington: Fully sensitive 3 x / Maize derived.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Enteritidis	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	3																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	3	0										3											2	64
Amphenicols - Florfenicol	2	3	0									2	1											2	64
Tetracyclines - Tetracycline	8	3	0								3													1	64
Fluoroquinolones - Ciprofloxacin	0.06	3	0			3																		0.008	8
Quinolones - Nalidixic acid	16	3	0										3											4	64
Trimethoprim	2	3	0							3														0.5	32
Aminoglycosides - Streptomycin	32	3	0									2	1											2	128
Aminoglycosides - Gentamicin	2	3	0						1	1	1													0.25	32
Aminoglycosides - Kanamycin	4	3	0										3											4	128
Penicillins - Ampicillin	4	3	0								1	2												0.5	32
Cephalosporins - Cefotaxim	0.5	3	0				2	1																0.06	4
Cephalosporins - Ceftazidim	2	3	0						3															0.25	16
Polymyxins - Colistin	2	3	0									3												2	4
Sulfonamides - Sulfamethoxazol	256	3	0													3								8	1024

Footnote:

Fully sensitive - 3 x.

Table Antimicrobial susceptibility testing of S. Enteritidis in Ducks - breeding flocks, unspecified - hatching eggs - at hatchery - Monitoring - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Ducks - breeding flocks, unspecified - hatching eggs - at hatchery - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	2	1	0									1												2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																			0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim		1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0										1											2	128
Aminoglycosides - Gentamicin	2	1	0						1															0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	0									1												0.5	32
Cephalosporins - Cefotaxim	0.5	1	0					1																0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0													1								8	1024

Footnote:

Fully sensitive - 1 x.

Table Antimicrobial susceptibility testing of S. Enteritidis in Pigs - at slaughterhouse - Surveillance - HACCP and own checks - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Pigs - at slaughterhouse - Surveillance - HACCP and own checks																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	16	1	0									1												2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																			0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin		1	0										1											2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	16	1	0										1											4	64
Penicillins - Ampicillin	4	1	0									1												0.5	32
Cephalosporins - Cefotaxim	0.5	1	0					1																0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0													1								8	1024

Footnote:

Fully sensitive - 1 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Gallus gallus (fowl) - laying hens - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	19																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	19	0									2	17											2	64
Amphenicols - Florfenicol	2	19	0									8	11											2	64
Tetracyclines - Tetracycline	8	19	0								19													1	64
Fluoroquinolones - Ciprofloxacin	0.06	19	1		12	6		1																0.008	8
Quinolones - Nalidixic acid	16	19	1										18					1						4	64
Trimethoprim		19	1							18							1							0.5	32
Aminoglycosides - Streptomycin	32	19	0									11	7	1										2	128
Aminoglycosides - Gentamicin	2	19	0						18	1														0.25	32
Aminoglycosides - Kanamycin	4	19	0										19											4	128
Penicillins - Ampicillin	4	19	0							2	4	13												0.5	32
Cephalosporins - Cefotaxim	0.5	19	0				15	4																0.06	4
Cephalosporins - Ceftazidim	2	19	0						18	1														0.25	16
Polymyxins - Colistin	2	19	0									19												2	4
Sulfonamides - Sulfamethoxazol	256	19	1												4	14						1		8	1024

Footnote:

Fully sensitive - 17 x, NxCp resistance - 1 x, SuW resistance - 1 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Gallus gallus (fowl) - broilers - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	43																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	43	0									1	42											2	64
Amphenicols - Florfenicol	2	43	0									9	34											2	64
Tetracyclines - Tetracycline	8	43	0								41	2												1	64
Fluoroquinolones - Ciprofloxacin	0.06	43	9		7	27		9																0.008	8
Quinolones - Nalidixic acid	16	43	9										34					9						4	64
Trimethoprim		43	0							43														0.5	32
Aminoglycosides - Streptomycin	32	43	0									8	35											2	128
Aminoglycosides - Gentamicin	2	43	0						37	6														0.25	32
Aminoglycosides - Kanamycin	4	43	0										43											4	128
Penicillins - Ampicillin	4	43	0								18	25												0.5	32
Cephalosporins - Cefotaxim	0.5	43	0				23	20																0.06	4
Cephalosporins - Ceftazidim	2	43	0						41	2														0.25	16
Polymyxins - Colistin	2	43	0									43												2	4
Sulfonamides - Sulfamethoxazol	256	43	0												8	34	1							8	1024

Footnote:

Fully sensitive - 34 x, NxCp resistance - 9 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

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	3																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	3	2										1					2						2	64
Amphenicols - Florfenicol	15	3	2										1			1		1						2	64
Tetracyclines - Tetracycline	8	3	3													1	1	1						1	64
Fluoroquinolones - Ciprofloxacin	0.06	3	1			2		1																0.008	8
Quinolones - Nalidixic acid	16	3	1										2					1						4	64
Trimethoprim		3	0							3														0.5	32
Aminoglycosides - Streptomycin	32	3	3														2	1						2	128
Aminoglycosides - Gentamicin	2	3	0						2	1														0.25	32
Aminoglycosides - Kanamycin	8	3	0										3											4	128
Penicillins - Ampicillin	4	3	3														3							0.5	32
Cephalosporins - Cefotaxim	0.5	3	0				2	1																0.06	4
Cephalosporins - Ceftazidim	2	3	0						3															0.25	16
Polymyxins - Colistin	2	3	0									3												2	4
Sulfonamides - Sulfamethoxazol	256	3	2												1							2		8	1024

Footnote:

AST resistance - 1 x, ACSSuTF resistance - 1 x, ACSSuTNxCpF resistance- 1 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Dublin	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	1																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	2	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																		0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim		1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0											1										2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	16	1	0										1											4	128
Penicillins - Ampicillin	4	1	0									1												0.5	32
Cephalosporins - Cefotaxim	0.5	1	0						1															0.06	4
Cephalosporins - Ceftazidim	2	1	0							1														0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0												1									8	1024

Footnote:

Fully sensitive - 1 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Bredeney	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	1																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0									1												2	64
Amphenicols - Florfenicol	2	1	0									1												2	64
Tetracyclines - Tetracycline	8	1	1															1						1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																			0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	1														1							2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	4	1	1																1					2	128
Penicillins - Ampicillin	4	1	0								1													0.5	32
Cephalosporins - Cefotaxim	0.5	1	0					1																0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	1																			1		8	1024

Footnote:

SSuTK resistance - 1x.

Table Antimicrobial susceptibility testing of S. Typhimurium in Pheasants - parent flocks - at farm - Monitoring - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Pheasants - parent flocks - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	2	1	0									1												2	64
Tetracyclines - Tetracycline	8	1	0									1												1	64
Fluoroquinolones - Ciprofloxacin		1	0			1																		0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim		1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0												1									2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	0									1												0.5	32
Cephalosporins - Cefotaxim	0.5	1	0					1																0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0											1										8	1024

Footnote:

Fully sensitive - 1 x.

Table Antimicrobial susceptibility testing of S. Bredeney in Pheasants - meat production flocks - at farm - Monitoring - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Bredeney	Pheasants - meat production flocks - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0									1												2	64
Amphenicols - Florfenicol	2	1	0									1												2	64
Tetracyclines - Tetracycline	8	1	1															1						1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																			0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim		1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	1														1							2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	4	1	1																1					2	128
Penicillins - Ampicillin	4	1	0								1													0.5	32
Cephalosporins - Cefotaxim	0.5	1	0				1																	0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	1																			1		8	1024

Footnote:

SSuTK resistance - 1 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Pigs - mixed herds - at farm - Clinical investigations																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	9																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	9	3										6				3							2	64
Amphenicols - Florfenicol	2	9	2									3	3		1	2								2	64
Tetracyclines - Tetracycline	8	9	8								1					2		6						1	64
Fluoroquinolones - Ciprofloxacin	0.06	9	0		6	3																		0.008	8
Quinolones - Nalidixic acid	16	9	0										9											4	64
Trimethoprim	2	9	1							8							1							0.5	32
Aminoglycosides - Streptomycin	32	9	5											3	1		2	1	2					4	128
Aminoglycosides - Gentamicin	2	9	0						2	7														0.5	32
Aminoglycosides - Kanamycin	16	9	0										9											4	128
Penicillins - Ampicillin	4	9	6									3					6							0.5	32
Cephalosporins - Cefotaxim	0.5	9	0				4	5																0.06	4
Cephalosporins - Ceftazidim	2	9	0						9															0.25	16
Polymyxins - Colistin	2	9	0									9												2	4
Sulfonamides - Sulfamethoxazol	256	9	5												2	2						5		8	1024

Footnote:

Fully sensitive - 1 x, T resistance - 1 x, AT resistance - 2 x, SSuT resistance - 1 x, ASSuTW resistance- 1 x, ACSSuT resistance - 1 x, ACSSuTF resistance - 2 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

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:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	2	1	0									1												2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																		0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0												1									2	128
Aminoglycosides - Gentamicin		1	0							1														0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	0									1												0.5	32
Cephalosporins - Cefotaxim	0.5	1	0					1																0.06	4
Cephalosporins - Ceftazidim	2	1	0							1														0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0											1										8	1024

Footnote:

Fully sensitive - 1 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

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	2																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	2	0										2											2	64
Amphenicols - Florfenicol	2	2	0									2												2	64
Tetracyclines - Tetracycline	8	2	1									1						1						1	64
Fluoroquinolones - Ciprofloxacin	0.06	2	0		2																			0.008	8
Quinolones - Nalidixic acid	16	2	0										2											4	64
Trimethoprim		2	0							2														0.5	32
Aminoglycosides - Streptomycin	16	2	0											2										2	128
Aminoglycosides - Gentamicin	2	2	0							2														0.25	32
Aminoglycosides - Kanamycin	4	2	0										2											4	128
Penicillins - Ampicillin	4	2	1									1					1							0.5	32
Cephalosporins - Cefotaxim	2	2	0				1	1																0.06	4
Cephalosporins - Ceftazidim	2	2	0						2															0.25	16
Polymyxins - Colistin	2	2	0									2												2	4
Sulfonamides - Sulfamethoxazol	256	2	0								2													8	1024

Footnote:

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

Table Antimicrobial susceptibility testing of S. Typhimurium in Fish - farmed - carp - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Fish - farmed - carp - at farm - animal sample - Clinical investigations																							
Isolates out of a monitoring program (yes/no)	no																							
Number of isolates available in the laboratory	1																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	2	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	1															1						1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																		0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	16	1	1															1						2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	8	1	0										1											4	128
Penicillins - Ampicillin		1	1														1							0.5	32
Cephalosporins - Cefotaxim	0.5	1	0					1																0.06	4
Cephalosporins - Ceftazidim	2	1	0							1														0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0												1									8	1024

Footnote:

AST resistance - 1 x (crucian carp).

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Geese - unspecified - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	2	1	0									1												2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																		0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim		1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0												1									2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	8	1	0										1											4	128
Penicillins - Ampicillin	4	1	0									1												0.5	32
Cephalosporins - Cefotaxim	0.5	1	0					1																0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0													1								8	1024

Footnote:

Fully sensitive - 1 x.

Table Antimicrobial susceptibility testing of S. 4,5,12:i:- in Pigs - mixed herds - at slaughterhouse - animal sample - Surveillance - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. 4,5,12:i:-	Pigs - mixed herds - at slaughterhouse - animal sample - Surveillance																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	2																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	2	0										2											2	64
Amphenicols - Florfenicol	2	2	0									2												2	64
Tetracyclines - Tetracycline	20	2	2															2						1	64
Fluoroquinolones - Ciprofloxacin	0.06	2	0			2																		0.008	8
Quinolones - Nalidixic acid	16	2	0										2											4	64
Trimethoprim		2	0							2														0.5	32
Aminoglycosides - Streptomycin	32	2	2																2					2	128
Aminoglycosides - Gentamicin	2	2	0						1	1														0.25	32
Aminoglycosides - Kanamycin	4	2	0										2											4	128
Penicillins - Ampicillin	4	2	2														2							0.5	32
Cephalosporins - Cefotaxim	0.5	2	0				2																	0.06	4
Cephalosporins - Ceftazidim	2	2	0						2															0.25	16
Polymyxins - Colistin	2	2	0									2												2	4
Sulfonamides - Sulfamethoxazol	256	2	2																			2		8	1024

Footnote:

ASSuT resistance - 2 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Derby	Pigs - mixed herds - at farm - animal sample - Surveillance																							
Isolates out of a monitoring program (yes/no)	no																							
Number of isolates available in the laboratory	3																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	3	0									2	1										2	64
Amphenicols - Florfenicol	16	3	0									3											2	64
Tetracyclines - Tetracycline	8	3	1								2							1					1	64
Fluoroquinolones - Ciprofloxacin	0.06	3	0		2	1																	0.008	8
Quinolones - Nalidixic acid	16	3	0										3										4	64
Trimethoprim		3	0							3													0.5	32
Aminoglycosides - Streptomycin	32	3	0											3									2	128
Aminoglycosides - Gentamicin	4	3	0							3													0.25	32
Aminoglycosides - Kanamycin	4	3	0										3										4	128
Penicillins - Ampicillin	4	3	0								3												0.5	32
Cephalosporins - Cefotaxim	0.5	3	0					3															0.06	4
Cephalosporins - Ceftazidim	2	3	0							3													0.25	16
Polymyxins - Colistin	2	3	0									3											2	4
Sulfonamides - Sulfamethoxazol	256	3	0												2	1							8	1024

Footnote:

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

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Choleraesuis	Pigs - mixed herds - at farm - animal sample - Surveillance																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	2	1	0									1												2	64
Tetracyclines - Tetracycline	8	1	0									1												1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	1							1														0.008	8
Quinolones - Nalidixic acid	16	1	1													1								4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	23	1	0													1								2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	8	1	0										1											4	128
Penicillins - Ampicillin	4	1	0								1													0.5	32
Cephalosporins - Cefotaxim	0.5	1	0				1																	0.06	16
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0													1								8	1024

Footnote:

NxCp(S) resistance - 1 x. Note to (S): MIC = 32 microg/ml

Table Antimicrobial susceptibility testing of S. Ohio in Pigs - mixed herds - at slaughterhouse - animal sample - Surveillance - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Ohio	Pigs - mixed herds - at slaughterhouse - animal sample - Surveillance																							
Isolates out of a monitoring program (yes/no)	no																							
Number of isolates available in the laboratory	1																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0												1									2	64
Amphenicols - Florfenicol	2	1	0												1									2	64
Tetracyclines - Tetracycline	8	1	1															1						1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	1							1														0.008	8
Quinolones - Nalidixic acid	16	1	1															1						4	64
Trimethoprim		1	0						1															0.5	32
Aminoglycosides - Streptomycin	32	1	0												1									2	128
Aminoglycosides - Gentamicin		1	0						1															0.25	32
Aminoglycosides - Kanamycin	8	1	0										1											4	128
Penicillins - Ampicillin		1	0										1											0.5	32
Cephalosporins - Cefotaxim	0.5	1	0						1															0.06	4
Cephalosporins - Ceftazidim	2	1	0								1													0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	1																			1		8	1024

Footnote:

SuTNxCp resistance - 1 x.

Table Antimicrobial susceptibility testing of Other serotypes in Pigs - mixed herds - at slaughterhouse - animal sample - Surveillance - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

Other serotypes	Pigs - mixed herds - at slaughterhouse - animal sample - Surveillance																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	3																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	3	0									1	2											2	64
Amphenicols - Florfenicol	2	3	0									3												2	64
Tetracyclines - Tetracycline	8	3	0								3													1	64
Fluoroquinolones - Ciprofloxacin	0.06	3	0		2	1																		0.008	8
Quinolones - Nalidixic acid	16	3	0										3											4	64
Trimethoprim		3	0							3														0.5	32
Aminoglycosides - Streptomycin	32	3	0										1	2										2	128
Aminoglycosides - Gentamicin	2	3	0						1	2														0.5	32
Aminoglycosides - Kanamycin	4	3	0										3											4	128
Penicillins - Ampicillin	8	3	0								3													0.5	32
Cephalosporins - Cefotaxim		3	0				3																	0.06	4
Cephalosporins - Ceftazidim	2	3	0						3															0.25	16
Polymyxins - Colistin	2	3	0									3												2	4
Sulfonamides - Sulfamethoxazol	256	3	0												2	1								8	1024

Footnote:

Fully sensitive: S. Montevideo - 2 x, S. London - 1 x.

Table Antimicrobial susceptibility testing of Other serotypes in Cattle (bovine animals) - unspecified - at slaughterhouse - animal sample - Surveillance - HACCP and own checks - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

Other serotypes	Cattle (bovine animals) - unspecified - at slaughterhouse - animal sample - Surveillance - HACCP and own checks																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	2	1	0									1												2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																			0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim		1	0							1														0.5	32
Aminoglycosides - Streptomycin		1	0											1										2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	0								1													0.5	32
Cephalosporins - Cefotaxim		1	0				1																	0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0												1									8	1024

Footnote:

Fully sensitive: S. Montevideo - 1 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Infantis	Gallus gallus (fowl) - laying hens - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	2																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	2	0										2											2	64
Amphenicols - Florfenicol	15	2	0										2											2	64
Tetracyclines - Tetracycline	8	2	0								2													1	64
Fluoroquinolones - Ciprofloxacin	0.06	2	0		1	1																		0.008	8
Quinolones - Nalidixic acid	16	2	0										2											4	64
Trimethoprim	2	2	0							2														0.5	32
Aminoglycosides - Streptomycin		2	0											1	1									2	128
Aminoglycosides - Gentamicin	2	2	0						2															0.25	32
Aminoglycosides - Kanamycin	4	2	0										2											4	128
Penicillins - Ampicillin	4	2	0								1	1												0.5	32
Cephalosporins - Cefotaxim	0.5	2	0					2																0.06	4
Cephalosporins - Ceftazidim	2	2	0							2														0.25	16
Polymyxins - Colistin	2	2	0									2												2	4
Sulfonamides - Sulfamethoxazol	256	2	0													2								8	1024

Footnote:

Fully sensitive - 2 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

Other serotypes	Gallus gallus (fowl) - laying hens - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	3																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	3	0										3											2	64
Amphenicols - Florfenicol	2	3	0										3											2	64
Tetracyclines - Tetracycline	8	3	0								3													1	64
Fluoroquinolones - Ciprofloxacin	0.06	3	0		2	1																		0.008	8
Quinolones - Nalidixic acid	16	3	0										3											4	64
Trimethoprim	2	3	0							3														0.5	32
Aminoglycosides - Streptomycin	32	3	0										1	1	1									2	128
Aminoglycosides - Gentamicin	2	3	0						2	1														0.25	32
Aminoglycosides - Kanamycin	4	3	0										3											4	128
Penicillins - Ampicillin	4	3	0								3													0.5	32
Cephalosporins - Cefotaxim	0.5	3	0					3																0.06	4
Cephalosporins - Ceftazidim	2	3	0							3														0.25	16
Polymyxins - Colistin	2	3	0									3												2	4
Sulfonamides - Sulfamethoxazol	256	3	0												1	2								8	1024

Footnote:

Fully sensitive: S. Tennessee - 2 x, S. Oranienburg - 1 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

Other serotypes	Gallus gallus (fowl) - broilers - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	6																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	6	0									1	3	2										2	64
Amphenicols - Florfenicol	16	6	0									3	3											2	64
Tetracyclines - Tetracycline	8	6	0								5	1												1	64
Fluoroquinolones - Ciprofloxacin	0.06	6	0		5	1																		0.008	8
Quinolones - Nalidixic acid	16	6	0										6											4	64
Trimethoprim		6	0							6														0.5	32
Aminoglycosides - Streptomycin	32	6	0										2	3	1									2	128
Aminoglycosides - Gentamicin		6	0						2	4														0.25	32
Aminoglycosides - Kanamycin	4	6	0										6											4	128
Penicillins - Ampicillin		6	0								5	1												0.5	32
Cephalosporins - Cefotaxim	0.5	6	0				2	4																0.06	4
Cephalosporins - Ceftazidim	2	6	0						2	4														0.25	16
Polymyxins - Colistin	2	6	0									6												2	4
Sulfonamides - Sulfamethoxazol	256	6	0													6								8	1024

Footnote:

Fully sensitive: S. Bovismorbificans - 2 x, S. Lille - 2 x, S. Montevideo - 1 x, S. Tennessee - 1 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Saintpaul	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:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	2	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	1						1															0.008	8
Quinolones - Nalidixic acid	16	1	1															1						4	64
Trimethoprim		1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0											1										2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	0								1													0.5	32
Cephalosporins - Cefotaxim	0.5	1	0				1																	0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0												1									8	1024

Footnote:

NxCp resistance - 1 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Infantis	Gallus gallus (fowl) - broilers - at farm - Monitoring																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	16																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	16	0										3	12	1									2	64
Amphenicols - Florfenicol	2	16	0										4	11	1									2	64
Tetracyclines - Tetracycline	8	16	16															16						1	64
Fluoroquinolones - Ciprofloxacin	0.06	16	16						1	11	4													0.008	8
Quinolones - Nalidixic acid	16	16	16															16						4	64
Trimethoprim		16	0							16														0.5	32
Aminoglycosides - Streptomycin	32	16	3												3	10	3							2	128
Aminoglycosides - Gentamicin	2	16	0						13	3														0.25	32
Aminoglycosides - Kanamycin	4	16	0										16											4	128
Penicillins - Ampicillin	4	16	0								2	11	3											0.5	32
Cephalosporins - Cefotaxim	0.5	16	0					5	11															0.06	4
Cephalosporins - Ceftazidim	2	16	0						1	11	4													0.25	16
Polymyxins - Colistin	2	16	0									16												2	4
Sulfonamides - Sulfamethoxazol	256	16	16																			16		8	1024

Footnote:

SuTNxCp resistance - 3 x, (S)SuTNxCp resistance - 10 x, SSuTNxCp resistance - 3 x. Note to (S): MIC = 32 microg/ml.

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Gallus gallus (fowl) - broilers - at farm - Monitoring - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. 6,7:-:1,5	Gallus gallus (fowl) - broilers - at farm - Monitoring																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	6																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	6	0										3	3										2	64
Amphenicols - Florfenicol	16	6	0										3	3										2	64
Tetracyclines - Tetracycline	8	6	6															6						1	64
Fluoroquinolones - Ciprofloxacin	0.06	6	6							5	1													0.008	8
Quinolones - Nalidixic acid	16	6	6															6						4	64
Trimethoprim		6	0							6														0.5	32
Aminoglycosides - Streptomycin	32	6	1												2	3	1							2	128
Aminoglycosides - Gentamicin	2	6	0						4	2														0.25	32
Aminoglycosides - Kanamycin	4	6	0										6											4	128
Penicillins - Ampicillin	4	6	0								1	4	1											0.5	32
Cephalosporins - Cefotaxim	0.5	6	0					2	4															0.06	4
Cephalosporins - Ceftazidim	2	6	0							3	3													0.25	16
Polymyxins - Colistin	2	6	0									6												2	4
Sulfonamides - Sulfamethoxazol	256	6	6																			6		8	1024

Footnote:

SuTNxCp resistance - 2 x, (S)SuTNxCp resistance - 3 x, SSuTNxCp resistance - 1 x. Note to (S): MIC = 32 microg/ml. Besides 3 isolates were O6 negative.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Newport	Gallus gallus (fowl) - broilers - at farm - Monitoring																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	2																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	2	0									2												2	64
Amphenicols - Florfenicol	16	2	0									2												2	64
Tetracyclines - Tetracycline	8	2	2															2						1	64
Fluoroquinolones - Ciprofloxacin	0.06	2	0		2																			0.008	8
Quinolones - Nalidixic acid	16	2	0										2											4	64
Trimethoprim		2	0							2														0.5	32
Aminoglycosides - Streptomycin	32	2	0											2										2	128
Aminoglycosides - Gentamicin	2	2	0						1	1														0.25	32
Aminoglycosides - Kanamycin	16	2	0										2											4	128
Penicillins - Ampicillin	4	2	2														2							0.5	32
Cephalosporins - Cefotaxim		2	0				2																	0.06	4
Cephalosporins - Ceftazidim	2	2	0						2															0.25	16
Polymyxins - Colistin	2	2	0									2												2	4
Sulfonamides - Sulfamethoxazol	256	2	0												2									8	1024

Footnote:

AT resistance - 2 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Kentucky	Gallus gallus (fowl) - broilers - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	8																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	8	0										8											2	64
Amphenicols - Florfenicol	2	8	0									2	6											2	64
Tetracyclines - Tetracycline	8	8	0								2	6												1	64
Fluoroquinolones - Ciprofloxacin	0.06	8	0			8																		0.008	8
Quinolones - Nalidixic acid	16	8	0										8											4	64
Trimethoprim		8	0							8														0.5	32
Aminoglycosides - Streptomycin	32	8	0											6	2									2	128
Aminoglycosides - Gentamicin	2	8	0							8														0.25	32
Aminoglycosides - Kanamycin	4	8	0										8											4	128
Penicillins - Ampicillin	4	8	1								7						1							0.5	32
Cephalosporins - Cefotaxim	0.5	8	0				1	7																0.06	4
Cephalosporins - Ceftazidim	2	8	0						8															0.25	16
Polymyxins - Colistin	2	8	0									8												2	4
Sulfonamides - Sulfamethoxazol	256	8	0													8								8	1024

Footnote:

Fully sensitive - 7 x, A resistance - 1 x.

Table Antimicrobial susceptibility testing of S. Newport in Turkeys - meat production flocks - at farm - Monitoring - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Newport	Turkeys - meat production flocks - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	3																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	3	0									3												2	64
Amphenicols - Florfenicol	16	3	0									3												2	64
Tetracyclines - Tetracycline	8	3	3															3						1	64
Fluoroquinolones - Ciprofloxacin	0.06	3	0		2	1																		0.008	8
Quinolones - Nalidixic acid	16	3	0										3											4	64
Trimethoprim	2	3	0							3														0.5	32
Aminoglycosides - Streptomycin	32	3	0											3										2	128
Aminoglycosides - Gentamicin		3	0						1	2														0.25	32
Aminoglycosides - Kanamycin	4	3	0										3											4	128
Penicillins - Ampicillin	4	3	3														3							0.5	32
Cephalosporins - Cefotaxim	0.5	3	0				3																	0.06	4
Cephalosporins - Ceftazidim	2	3	0						3															0.25	16
Polymyxins - Colistin	2	3	0									3												2	4
Sulfonamides - Sulfamethoxazol	256	3	0												3									8	1024

Footnote:

AT resistance - 3 x.

Table Antimicrobial susceptibility testing of S. Infantis in Turkeys - meat production flocks - at farm - Monitoring - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Infantis	Turkeys - meat production flocks - at farm - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	2																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	2	0											2										2	64
Amphenicols - Florfenicol	2	2	0										1	1										2	64
Tetracyclines - Tetracycline	8	2	2															2						1	64
Fluoroquinolones - Ciprofloxacin	0.06	2	2							1	1													0.008	8
Quinolones - Nalidixic acid	16	2	2															2						4	64
Trimethoprim		2	0							2														0.5	32
Aminoglycosides - Streptomycin	32	2	0													2								2	128
Aminoglycosides - Gentamicin	2	2	0						1	1														0.25	32
Aminoglycosides - Kanamycin	4	2	0										2											4	128
Penicillins - Ampicillin	4	2	0									1	1											0.5	32
Cephalosporins - Cefotaxim	0.5	2	0						2															0.06	4
Cephalosporins - Ceftazidim	2	2	0							1	1													0.25	16
Polymyxins - Colistin	2	2	0									2												2	4
Sulfonamides - Sulfamethoxazol	256	2	2																			2		8	1024

Footnote:

(S)SuTNxCp resistance - 2 x. Note to (S): MIC = 32 microg/ml.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - domestic production - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	16	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.12	1	0			1																		0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0									1												2	128
Aminoglycosides - Gentamicin	2	1	0						1															0.25	32
Aminoglycosides - Kanamycin	8	1	0										1											4	128
Penicillins - Ampicillin	4	1	0								1													0.5	32
Cephalosporins - Cefotaxim	0.5	1	0				1																	0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	16	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0													1								8	1024

Table Antimicrobial susceptibility testing of S. Infantis in Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - in total - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Infantis	Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - in total - Surveillance - official controls																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	4																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	4	0										2	1	1									2	64
Amphenicols - Florfenicol	16	4	0										3	1										2	64
Tetracyclines - Tetracycline	8	4	4															4						1	64
Fluoroquinolones - Ciprofloxacin	0.06	4	4						2	1	1													0.008	8
Quinolones - Nalidixic acid	16	4	4															4						4	64
Trimethoprim	2	4	0							4														0.5	32
Aminoglycosides - Streptomycin	32	4	0												1	3								2	128
Aminoglycosides - Gentamicin	2	4	0						2	2														0.25	32
Aminoglycosides - Kanamycin	4	4	0										4											4	128
Penicillins - Ampicillin	4	4	0								1	3												0.5	32
Cephalosporins - Cefotaxim		4	0					1	3															0.06	4
Cephalosporins - Ceftazidim	2	4	0							2	2													0.25	16
Polymyxins - Colistin	2	4	0									4												2	4
Sulfonamides - Sulfamethoxazol	256	4	4																			4		8	1024

Footnote:

SuTNxCp resistance - 1 x, (S)SuTNxCp resistance - 3 x. Note to (S): MIC = 32 microg/ml.

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at processing plant - domestic production - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. 6,7:-:1,5	Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at processing plant - domestic production - Surveillance - official controls																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	2																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	2	0										1	1										2	64
Amphenicols - Florfenicol	2	2	0										1	1										2	64
Tetracyclines - Tetracycline	8	2	2															2						1	64
Fluoroquinolones - Ciprofloxacin	0.06	2	2							1	1													0.008	8
Quinolones - Nalidixic acid	16	2	2															2						4	64
Trimethoprim	2	2	0							2														0.5	32
Aminoglycosides - Streptomycin	32	2	0												1	1								2	128
Aminoglycosides - Gentamicin	2	2	0						2															0.25	32
Aminoglycosides - Kanamycin	64	2	0										2											4	128
Penicillins - Ampicillin	4	2	0									2												0.5	32
Cephalosporins - Cefotaxim	0.5	2	0						2															0.06	4
Cephalosporins - Ceftazidim	2	2	0								2													0.25	16
Polymyxins - Colistin	2	2	0									2												2	4
Sulfonamides - Sulfamethoxazol	256	2	2																			2		8	1024

Footnote:

SuTNxCp resistance - 1 x, (S)SuTNxCp resistance - 1 x. Note to (S): MIC=32 microg/ml.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Schwarzengrund	Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - domestic production - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	16	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																			0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0											1										4	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	0								1													0.5	32
Cephalosporins - Cefotaxim	0.5	1	0				1																	0.06	6
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	8	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0												1									8	1024

Footnote:

Fully sensitive - 1 x.

Table Antimicrobial susceptibility testing of S. Agona in Meat from turkey - meat preparation - intended to be eaten cooked - at retail - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Agona	Meat from turkey - meat preparation - intended to be eaten cooked - at retail - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	2																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	2	0										2											2	64
Amphenicols - Florfenicol	16	2	0										2											2	64
Tetracyclines - Tetracycline	8	2	2															2						1	64
Fluoroquinolones - Ciprofloxacin	0.06	2	0		2																			0.008	8
Quinolones - Nalidixic acid	16	2	0										2											4	64
Trimethoprim	2	2	0							2														0.5	32
Aminoglycosides - Streptomycin		2	0											2										4	128
Aminoglycosides - Gentamicin	2	2	0							2														0.25	32
Aminoglycosides - Kanamycin	4	2	2																2					4	128
Penicillins - Ampicillin	4	2	0								2													0.5	32
Cephalosporins - Cefotaxim	0.5	2	0					2																0.06	4
Cephalosporins - Ceftazidim	2	2	0							2														0.25	16
Polymyxins - Colistin	2	2	0									2												2	4
Sulfonamides - Sulfamethoxazol	256	2	2																			2		8	1024

Footnote:

SuTK resistance - 2 x.

Table Antimicrobial susceptibility testing of S. 4,5,12:i:- in Meat from pig - meat preparation - intended to be eaten cooked - at processing plant - domestic production - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. 4,5,12:i:-	Meat from pig - meat preparation - intended to be eaten cooked - at processing plant - domestic production - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	1															1						2	64
Amphenicols - Florfenicol	16	1	1													1								2	64
Tetracyclines - Tetracycline	8	1	1													1								1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																		0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	1														1							2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	1														1							0.5	32
Cephalosporins - Cefotaxim		1	0					1																0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	1																		1			8	1024

Footnote:

ACSSuTF - resistance - 1 x.

Table Antimicrobial susceptibility testing of S. 4,12:i:- in Meat from bovine animals and pig - meat products - at processing plant - Surveillance - HACCP and own checks - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. 4,12:i:-	Meat from bovine animals and pig - meat products - at processing plant - Surveillance - HACCP and own checks																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0									1												2	64
Amphenicols - Florfenicol	16	1	0								1													2	64
Tetracyclines - Tetracycline	8	1	1															1						1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																		0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin		1	1																1					2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	1														1							0.5	32
Cephalosporins - Cefotaxim	0.5	1	0					1																0.006	4
Cephalosporins - Ceftazidim	2	1	0							1														0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	1																			1		8	1024

Footnote:

ASSuT resistance - 1 x.

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

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Egusitoo	Other processed food products and prepared dishes - noodles - at processing plant - domestic production - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	16	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																			0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.25	32
Aminoglycosides - Streptomycin	32	1	0											1										2	128
Aminoglycosides - Gentamicin		1	0						1															0.25	32
Aminoglycosides - Kanamycin	8	1	0										1											4	128
Penicillins - Ampicillin	4	1	0								1													0.5	32
Cephalosporins - Cefotaxim	0.5	1	0				1																	0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0													1								8	1024

Footnote:

Fully sensitive - 1 x.

Table Antimicrobial susceptibility testing of S. Derby in Other products of animal origin - gelatin and collagen - at processing plant - domestic production - Surveillance - HACCP and own checks - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Derby	Other products of animal origin - gelatin and collagen - at processing plant - domestic production - Surveillance - HACCP and own checks																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	16	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																			0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0											1										2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	16	1	0										1											4	128
Penicillins - Ampicillin	4	1	0								1													0.5	32
Cephalosporins - Cefotaxim	2	1	0					1																0.06	4
Cephalosporins - Ceftazidim	2	1	0							1														0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0												1									8	1024

Footnote:

Fully sensitive - 1 x.

Table Antimicrobial susceptibility testing of S. Enteritidis in Compund feedingstuffs for poultry - broilers - final product - at farm - feed sample - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Compound feedingstuffs for poultry - broilers - final product - at farm - feed sample - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	16	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																			0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0									1												2	128
Aminoglycosides - Gentamicin	2	1	0						1															0.25	32
Aminoglycosides - Kanamycin	64	1	0										1											4	128
Penicillins - Ampicillin	4	1	0									1												0.5	32
Cephalosporins - Cefotaxim	0.5	1	0					1																0.06	4
Cephalosporins - Ceftazidim	4	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0												1									8	1024

Footnote:

Fully sensitive - 1 x.

Table Antimicrobial susceptibility testing of S. Typhimurium in Feed material of land animal origin - meat and bone meal - at feed mill - imported - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Feed material of land animal origin - meat and bone meal - at feed mill - imported - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	16	1	0									1												2	64
Tetracyclines - Tetracycline	8	1	1															1						1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																			0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	1																1					2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	1														1							0.5	32
Cephalosporins - Cefotaxim	0.5	1	0				1																	0.06	4
Cephalosporins - Ceftazidim	4	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	1																			1		8	1024

Footnote:

ASSuT resistance - 1 x.

Table Antimicrobial susceptibility testing of S. Infantis in Feed material of land animal origin - poultry offal meal - at feed mill - domestic production - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Infantis	Feed material of land animal origin - poultry offal meal - at feed mill - domestic production - Surveillance - official controls																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	2																							
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	2	0											2									2	64
Amphenicols - Florfenicol	16	2	0											2									2	64
Tetracyclines - Tetracycline	8	2	2															2					1	64
Fluoroquinolones - Ciprofloxacin	0.06	2	2							2													0.008	8
Quinolones - Nalidixic acid	16	2	2															2					4	64
Trimethoprim	2	2	0							2													0.5	32
Aminoglycosides - Streptomycin	32	2	0												1	1							2	128
Aminoglycosides - Gentamicin	2	2	0							2													0.25	32
Aminoglycosides - Kanamycin	4	2	0										2										4	128
Penicillins - Ampicillin	4	2	0									2											0.5	32
Cephalosporins - Cefotaxim	2	2	0						2														0.06	4
Cephalosporins - Ceftazidim	2	2	0								2												0.25	16
Polymyxins - Colistin	2	2	0									2											2	4
Sulfonamides - Sulfamethoxazol	256	2	2																		2		8	1024

Footnote:

SuTNxCp resistance - 1 x, (S)SuTNxCp resistance – 1 x. Note to (S): MIC = 32 microg/ml.

Table Antimicrobial susceptibility testing of S. Enteritidis in Feed material of land animal origin - poultry offal meal - at feed mill - domestic production - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Feed material of land animal origin - poultry offal meal - at feed mill - domestic production - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	16	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	1					1																0.008	8
Quinolones - Nalidixic acid	16	1	1															1						4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0									1												2	128
Aminoglycosides - Gentamicin	2	1	0						1															0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	0								1													0.5	32
Cephalosporins - Cefotaxim	0.5	1	0				1																	0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0													1								8	1024

Footnote:

NxCp resistance - 1 x.

Table Antimicrobial susceptibility testing of Other serotypes in Feed material of land animal origin - in total - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

Other serotypes	Feed material of land animal origin - in total - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	4																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	4	0										4											2	64
Amphenicols - Florfenicol	16	4	0										4											2	64
Tetracyclines - Tetracycline	8	4	0								2	2												1	64
Fluoroquinolones - Ciprofloxacin	0.06	4	0			4																		0.008	8
Quinolones - Nalidixic acid	16	4	0										4											4	64
Trimethoprim	2	4	0							4														0.5	32
Aminoglycosides - Streptomycin	32	4	0										1	3										2	128
Aminoglycosides - Gentamicin	2	4	0						2		2													0.25	32
Aminoglycosides - Kanamycin	64	4	0										4											4	128
Penicillins - Ampicillin	4	4	1								1	2					1							0.5	32
Cephalosporins - Cefotaxim	0.5	4	0					4																0.06	4
Cephalosporins - Ceftazidim	2	4	0						1	3														0.25	16
Polymyxins - Colistin	2	4	0									4												2	4
Sulfonamides - Sulfamethoxazol	256	4	0												3	1								8	1024

Footnote:

S. Montevideo: Fully sensitive – 1 x / Meat and bone meal.
S. Derby: Fully sensitive – 1 x / Pet food – greaves.

Table Antimicrobial susceptibility testing of Other serotypes in Compound feedingstuffs, not specified - final product - at farm - feed sample - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

Other serotypes	Compound feedingstuffs, not specified - final product - at farm - feed sample - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	7																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	7	0										7											2	64
Amphenicols - Florfenicol	16	7	0										7											2	64
Tetracyclines - Tetracycline	8	7	0								6	1												1	64
Fluoroquinolones - Ciprofloxacin	0.06	7	0		5	2																		0.008	8
Quinolones - Nalidixic acid	16	7	0										7											4	64
Trimethoprim	2	7	0							7														0.5	
Aminoglycosides - Streptomycin	32	7	0										1	5	1									2	128
Aminoglycosides - Gentamicin	2	7	0						4	3														0.25	32
Aminoglycosides - Kanamycin	4	7	0										7											4	128
Penicillins - Ampicillin	4	7	0								7													0.5	32
Cephalosporins - Cefotaxim	0.5	7	0				1	6																0.06	4
Cephalosporins - Ceftazidim	2	7	0						1	6														0.25	16
Polymyxins - Colistin	2	7	0									7												2	4
Sulfonamides - Sulfamethoxazol	256	7	0													7								8	1024

Footnote:

Fully sensitive - 7 x / S. Egusitoo - 1 x, S. Kentucky - 1 x, S. Tennessee - 5 x.

Table Antimicrobial susceptibility testing of S. Typhimurium in Other feed material - other plants - at farm - feed sample - Surveillance - official controls ((fresh plants)) - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Other feed material - other plants - at farm - feed sample - Surveillance - official controls ((fresh plants))																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	16	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	1															1						1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																		0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	641.5
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	1																1					2	128
Aminoglycosides - Gentamicin	2	1	0							1														0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	1														1							0.5	32
Cephalosporins - Cefotaxim	0.5	1	0				1																	0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0											1										8	1024

Footnote:

AST resistance - 1 x.

Table Antimicrobial susceptibility testing of Other serotypes in Other feed material - miscellaneous - at feed mill - domestic production - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

Other serotypes	Other feed material - miscellaneous - at feed mill - domestic production - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	5																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	5	0										5											2	64
Amphenicols - Florfenicol	16	5	0										5											2	64
Tetracyclines - Tetracycline	8	5	0								1	4												1	64
Fluoroquinolones - Ciprofloxacin	0.06	5	0		4	1																		0.008	8
Quinolones - Nalidixic acid	16	5	0										5											4	64
Trimethoprim	2	5	0							5														0.5	32
Aminoglycosides - Streptomycin	32	5	0										1	3	1									2	128
Aminoglycosides - Gentamicin	2	5	0						1	4														0.25	32
Aminoglycosides - Kanamycin	64	5	0										5											4	128
Penicillins - Ampicillin	4	5	0								5													0.5	32
Cephalosporins - Cefotaxim	0.5	5	0				2	3																0.06	4
Cephalosporins - Ceftazidim	2	5	0						4	1														0.25	16
Polymyxins - Colistin	2	5	0									5												2	4
Sulfonamides - Sulfamethoxazol	256	5	0												4	1								8	1024

Footnote:

Fully sensitive 5 x / S. 1,3,19:-:- - 1 x (Maize derived), S. Tennessee - 1 x (Rape seed derived), S. Worthington - 3 x (Maize derived).

Table Antimicrobial susceptibility testing of S. Enteritidis in Pet food - final product - canned products - at retail - Surveillance - official controls ((Compound feedingstuffs - salami)) - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Pet food - final product - canned products - at retail - Surveillance - official controls ((Compound feedingstuffs - salami))																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	16	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	0								1													1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																			0.008	8
Quinolones - Nalidixic acid	16	1	0										1											4	64
Trimethoprim	2	1	0							1														0.5	32
Aminoglycosides - Streptomycin	32	1	0									1												2	128
Aminoglycosides - Gentamicin	2	1	0						1															0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	0								1													0.5	32
Cephalosporins - Cefotaxim	0.5	1	0				1																	0.06	4
Cephalosporins - Ceftazidim	2	1	0						1															0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	0													1								8	1024

Footnote:

Fully sensitive - 1 x.

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Feed material of land animal origin - poultry offal meal - at feed mill - domestic production - Surveillance - official controls - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. 6,7:-:1,5	Feed material of land animal origin - poultry offal meal - at feed mill - domestic production - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	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
Amphenicols - Chloramphenicol	16	1	0										1											2	64
Amphenicols - Florfenicol	16	1	0										1											2	64
Tetracyclines - Tetracycline	8	1	1															1						1	64
Fluoroquinolones - Ciprofloxacin	0.06	1	1								1													0.008	8
Quinolones - Nalidixic acid	16	1	1															1						4	64
Trimethoprim	2	1	0							1														0.25	32
Aminoglycosides - Streptomycin	32	1	0													1								2	128
Aminoglycosides - Gentamicin	2	1	0						1															0.25	32
Aminoglycosides - Kanamycin	4	1	0										1											4	128
Penicillins - Ampicillin	4	1	0									1												0.5	32
Cephalosporins - Cefotaxim	0.5	1	0					1																0.06	4
Cephalosporins - Ceftazidim	2	1	0							1														0.25	16
Polymyxins - Colistin	2	1	0									1												2	4
Sulfonamides - Sulfamethoxazol	256	1	1																			1		8	1024

Footnote:

(S)SuTNxCp resistance – 1 x / Poultry offal meal. Note to (S): MIC = 32 microg/ml.

Table Cut-off values for antibiotic resistance testing of Salmonella in Animals

Test Method Used
Broth dilution

Standard methods used for testing
NCCLS/CLSI EUCAST WHO/GSS ISO

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol	EFSA/EC/EUCAST	16	
	Florfenicol	EUCAST	16	
Tetracyclines	Tetracycline	EFSA/EC/EUCAST	8	
Fluoroquinolones	Ciprofloxacin	EFSA/EC/EUCAST	0.06	
Quinolones	Nalidixic acid	EFSA/EC/EUCAST	16	
Trimethoprim	Trimethoprim	EFSA/EC/EUCAST	2	
Sulfonamides	Sulfamethoxazol	EFSA/EC	256	
Aminoglycosides	Streptomycin	EFSA/EC	32	
	Gentamicin	EFSA/EC/EUCAST	2	
	Kanamycin	EUCAST	8	
Cephalosporins	Cefotaxim	EFSA/EC/EUCAST	0.5	
	Ceftazidim	EUCAST	2	
Penicillins	Ampicillin	EFSA/EC/EUCAST	4	
Polymyxins	Colistin	EUCAST	2	

Table Cut-off values for antibiotic resistance testing of Salmonella in Animals

Footnote:

Standard for breakpoint / epidemiological cut-off value:
EFSA - EFSA´s recomendations Question No. EFSA-Q-2006/046, In: The EFSA Journal (2007), 96,1 - 46.
EC - Commision Decission 2007/407/EC, In: Official Journal of the European Union (2007), L 153, 26 - 29.
EUCAST - Antimicrobial wildtype distribution of microorganisms, version 5.12, In: http://217.70.33.99/Eucast2/SearchController/index.jsp?action=initAdvanced
Note to breakpoint for Kanamycin:
EUCAST - ECOFF for Salmonella ND, for E.coli R>8.
Note to breakpoint for Streptomycin:
CLSI - no breakpoint, EUCAST - R>16 , EFSA, EC, ARBAO and NARMS - R>32.

Table Cut-off values for antibiotic resistance testing of Salmonella in Food

Test Method Used
Broth dilution

Standard methods used for testing
NCCLS/CLSI ISO WHO/GSS EUCAST

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol	EFSA/EC/EUCAST	16	
	Florfenicol	EUCAST	16	
Tetracyclines	Tetracycline	EFSA/EC/EUCAST	8	
Fluoroquinolones	Ciprofloxacin	EFSA/EC/EUCAST	0.06	
Quinolones	Nalidixic acid	EFSA/EC/EUCAST	16	
Trimethoprim	Trimethoprim	EFSA/EC/EUCAST	2	
Sulfonamides	Sulfamethoxazol	EFSA/EC	256	
Aminoglycosides	Streptomycin	EFSA/EC	32	
	Gentamicin	EFSA/EC/EUCAST	2	
	Kanamycin	EUCAST	8	
Cephalosporins	Cefotaxim	EFSA/EC/EUCAST	0.5	
	Ceftazidim	EUCAST	2	
Penicillins	Ampicillin	EFSA/EC/EUCAST	4	
Polymyxins	Colistin	EUCAST	2	

Table Cut-off values for antibiotic resistance testing of Salmonella in Food

Footnote:

Standard for breakpoint / epidemiological cut-off value:
EFSA - EFSA´s recomendations Question No. EFSA-Q-2006/046, In: The EFSA Journal (2007), 96,1 - 46.
EC - Commision Decission 2007/407/EC, In: Official Journal of the European Union (2007), L 153, 26 - 29.
EUCAST - Antimicrobial wildtype distribution of microorganisms, version 5.12, In: http://217.70.33.99/Eucast2/SearchController/index.jsp?action=initAdvanced
Note to breakpoint for Kanamycin:
EUCAST - ECOFF for Salmonella ND, for E.coli R>8.
Note to breakpoint for Streptomycin:
CLSI - no breakpoint, EUCAST - R>16 , EFSA, EC, ARBAO and NARMS - R>32.

Table Cut-off values for antibiotic resistance testing of Salmonella in Feed

Test Method Used
Broth dilution

Standard methods used for testing
NCCLS/CLSI WHO/GSS EUCAST ISO

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol	EFSA/EC/EUCAST	16	
	Florfenicol	EUCAST	16	
Tetracyclines	Tetracycline	EFSA/EC/EUCAST	8	
Fluoroquinolones	Ciprofloxacin	EFSA/EC/EUCAST	0.06	
Quinolones	Nalidixic acid	EFSA/EC/EUCAST	16	
Trimethoprim	Trimethoprim	EFSA/EC/EUCAST	2	
Sulfonamides	Sulfamethoxazol	EFSA/EC	256	
Aminoglycosides	Streptomycin	EFSA/EC	32	
	Gentamicin	EFSA/EC/EUCAST	2	
	Kanamycin	EUCAST	8	
Cephalosporins	Cefotaxim	EFSA/EC/EUCAST	0.5	
	Ceftazidim	EUCAST	2	
Penicillins	Ampicillin	EFSA/EC/EUCAST	4	
Polymyxins	Colistin	EUCAST	2	

Table Cut-off values for antibiotic resistance testing of Salmonella in Feed

Footnote:

Standard for breakpoint / epidemiological cut-off value:
EFSA - EFSA´s recomendations Question No. EFSA-Q-2006/046, In: The EFSA Journal (2007), 96,1 - 46.
EC - Commision Decission 2007/407/EC, In: Official Journal of the European Union (2007), L 153, 26 - 29.
EUCAST - Antimicrobial wildtype distribution of microorganisms, version 5.12, In: http://217.70.33.99/Eucast2/SearchController/index.jsp?action=initAdvanced
Note to breakpoint for Kanamycin:
EUCAST - ECOFF for Salmonella ND, for E.coli R>8.
Note to breakpoint for Streptomycin:
CLSI - no breakpoint, EUCAST - R>16 , EFSA, EC, ARBAO and NARMS - R>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. 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.

Animals
During 2009 there were investigated 1123 animals for presence of Campylobacter spp. It is representing 19% increase in comparison with 2008. 112 samples were positive (100% increase of positive samples comparing 2008) and representing 10% from total investigated samples (38x cattle, 12x sheep, 38x pigs, 2x poultry Gallus Gallus, 6x dogs, 1x cat, 1x wild boars, 1x lynx, 3x ferret). Trend of occurrence of Campylobacter is increasing and correlate with high occurrence of Campylobacter at all.

Food
There were 83 samples of minced meat and meat preparations from poultry (broilers, turkeys) investigated without positive finding. From other foodstuffs 268 samples of raw cow´s milk were investigated with positive findings in 14 samples (16,9%). 7 positive findings were recorded in sheep´s cheese taken at special sheep farm establishments within target control (7,0%), 4x C. jejuni, 3x C. Coli.

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. 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

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

There were 83 samples of minced meat and meat preparations from poultry (broilers, turkeys) investigated without positive finding. From other foodstuffs 268 samples of raw cow´s milk were investigated with positive findings in 14 samples (16,9%). 7 positive findings were recorded in sheep´s cheese taken at special sheep farm establishments within target control (7,0%), 4x C. jejuni, 3x C. Coli.

Table Campylobacter in poultry meat

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at catering - Surveillance - official controls	RPHA	Batch	10g	15	0					
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - domestic production - Monitoring - official sampling	RPHA	Batch	25g	38	0					
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - at catering - Surveillance - official controls	RPHA	Single	10g	1	0					
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - at retail - domestic production - Surveillance - official controls	RPHA	Single	25g	28	0					
Meat from turkey - minced meat - intended to be eaten cooked - at catering - Surveillance - official controls	RPHA	Single	10g	1	0					

Footnote:

RPHA - Regional Public Health Authorities

Table Campylobacter in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Cheeses made from cows' milk - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	1	0					
Cheeses made from sheep's milk - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	100	7	3	4			
Cheeses, made from mixed milk from cows, sheep and/or goats - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	7	0					
Milk, cows' - raw - at processing plant - domestic production - Surveillance - official controls	SVFI	Single	25g	268	14		14			

Footnote:

SVFI - State Veterinary and Food Institutes

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

faeces

Vaccination policy

vaccination in Slovac Republic is not performed.

Results of the investigation

During 2009 there were investigated 1123 animals for presence of Campylobacter spp. It is representing 19% increase in comparison with 2008. 112 samples were positive (100% increase of positive samples comparing 2008) and representing 10% from total investigated samples (38x cattle, 12x sheep, 38x pigs, 2x poultry Gallus Gallus, 6x dogs, 1x cat, 1x wild boars, 1x lynx, 3x ferret). Trend of occurrence of Campylobacter is increasing and correlate with high occurrence of Campylobacter at all.

Table Campylobacter in animals

	Source of information	Sampling unit	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Cats - Clinical investigations (animal sample)	SVFI	Animal	21	1		1			
Cattle (bovine animals) - at farm - animal sample - Clinical investigations	SVFI	Animal	278	48	15	25			8
Cattle (bovine animals) - at farm - animal sample - Control and eradication programmes - official sampling	SVFI	Animal	316	0					
Dogs - Clinical investigations (animal sample)	SVFI	Animal	121	6		4		2	
Eagle - Clinical investigations (animal sample)	SVFI	Animal	2	0					
Falcons - Clinical investigations (animal sample)	SVFI	Animal	1	0					
Ferrets - Clinical investigations (animal sample)	SVFI	Animal	6	3		3			
Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations [1)]	SVFI	Flock	42	2	1	2			
Goats - at farm - animal sample - Clinical investigations	SVFI	Animal	4	0					
Hares - at farm - animal sample - Clinical investigations	SVFI	Animal	2	0					
Lynx - Clinical investigations (animal sample)	SVFI	Animal	1	1		1			
Minks - at farm - animal sample - Clinical investigations	SVFI	Animal	5	0					
Pigeons - at farm - animal sample - Clinical investigations	SVFI	Animal	5	0					
Pigs - at farm - animal sample - Clinical investigations	SVFI	Animal	158	38	32	3			3

Table Campylobacter in animals

	Source of information	Sampling unit	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Sheep - at farm - animal sample - Clinical investigations	SVFI	Animal	130	12		6			6
Wild animals - Clinical investigations (animal sample)	SVFI	Animal	14	0					
Wild boars - Clinical investigations (animal sample)	SVFI	Animal	1	1	1				
Zoo animals, all - at zoo - Clinical investigations (animal sample)	SVFI	Flock	16	0					

Comments:

[1)] 2 serovars in one positive sample

Footnote:

SVFI - State Veterinary and Food Institute

2.2.5 Antimicrobial resistance in Campylobacter isolates

A. 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.

B. 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.

C. Antimicrobial resistance of Campylobacter spp., unspecified in animal - Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study - at slaughterhouse - animal sample - Survey - EU baseline survey

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 Cut-off values used for antimicrobial susceptibility testing of Campylobacter in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Aminoglycosides	Gentamicin		1	
	Streptomycin		2	
Macrolides	Erythromycin		4	

Table Cut-off values used for antimicrobial susceptibility testing of Campylobacter in Food

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Aminoglycosides	Gentamicin		1	
	Streptomycin		2	
Macrolides	Erythromycin		4	

Table Cut-off values used for antimicrobial susceptibility testing of Campylobacter in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Aminoglycosides	Gentamicin		1	
	Streptomycin		2	
Macrolides	Erythromycin		4	

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 2366 samples were tested for presence of Listeria monocytogenes with positive finding in 30 samples (1,27%). Comparing with 2008 (0,73%) increase was recorded. The most positive samples were found in raw cow´s milk but not intended for direct consumption. Positive samples were recorded also in cheeses made from cow´s milk (4x), sheep cheeses (4x) and one sample chesese made from mixed cow´s and sheep´s milk.

Other foodstuffs
In respect of other food, mainly meat and meat products a processed food and dishes were under inspection. A total 2877 samples of other food were investigated were tested for LM presence, thereof 37 positive samples (1,29%) and thereof 5 samples were beyond 100 CFU/g. In comparison with 2008 (2.71% positive samples, 2 samples beyond 100 CFU/g) percentage of positivity decreased.
As in previous years unfit findings were recorded in meat products cooked (14x), mostly meat products from pig meat and mixed meat from pigs and bovine.
Further findings were in processed food and dishes at retail, ready-to-eat salads and sandwiches and in 4 cases were detected exceeded limits in number of Listeria monocytogenes in 1g.

Animals
In 2009 there were examined for Listeria 1259 samples of animal tissues and blood, mostly at farm, with positive findings in 31 animals (2,5%) – 18x cattle, 13 sheep). Comparing with 2008 number of samples tested and positive increased, mainly in cattle.

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 other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	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
Beverages, non-alcoholic - at processing plant - Surveillance - official controls	SVFI	Batch	10g	3	0			3	0	0
Fish - smoked - at processing plant - Surveillance - official controls	SVFI	Batch	25g	3	0	3	0			
Fish - smoked - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	7	0			7	0	0
Fish - unspecified - frozen - at processing plant - Surveillance - official controls	SVFI	Batch	10g	3	0			3	0	0
Fish - unspecified - frozen - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	1	0			1	0	0
Fishery products, unspecified - at catering - Surveillance - official controls	PHA	Batch	25g	64	0	64	0	9	0	0
Fishery products, unspecified - at processing plant - Surveillance - official controls	SVFI	Batch	10g, 25g	32	0	26	0	6	0	0
Fishery products, unspecified - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	10g	241	1	212	1	189	0	0
Fishery products, unspecified - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	6	0			6	0	0
Fruits and vegetables - at processing plant - Surveillance - official controls	SVFI, PHA	Batch	25g	12	0	10	0	2	0	0
Fruits and vegetables - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	6	0			6	0	0

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	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 broilers (Gallus gallus) - fresh - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	7	0			7	0	0
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at catering - Surveillance - official controls	PHA	Single	25g	3	0	3	0	3	0	0
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVFI	Batch	25g	25	0	25	0			
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	10g, 25g	175	1	111	0	83	0	1
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	4	0			4	0	0
Meat from horse - meat products - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	1	0			1	0	0
Meat from pig - fresh - at processing plant - Surveillance - official controls	SVFI	Batch	25g	21	1	21	1			
Meat from pig - fresh - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	41	0			41	0	0
Meat from pig - meat products - cooked, ready-to-eat - at catering - Surveillance - official controls	PHA	Batch	25g	11	0	11	0	11	0	0
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVFI	Batch	25g	360	5	360	5			

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	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 - meat products - cooked, ready-to-eat - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	160	0			160	0	0
Meat from pig - meat products - cooked, ready-to-eat - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	7	0			7	0	0
Meat from turkey - fresh - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	1	1	1	1			
Meat from turkey - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVFI	Batch	25g	1	0	1	0			
Meat from turkey - meat products - cooked, ready-to-eat - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	9	0			9	0	0
Meat from wild game - land mammals - meat products - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	1	0			1	0	0
Meat, mixed meat - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVFI	Batch	25g	224	5	224	5			
Meat, mixed meat - meat products - cooked, ready-to-eat - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	154	0			154	0	0
Meat, mixed meat - meat products - cooked, ready-to-eat - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	13	0			13	0	0
Meat, mixed meat - meat products - fermented sausages - at processing plant - Surveillance - official controls	SVFI	Batch	25g	24	0	24	0			

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	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, mixed meat - meat products - fermented sausages - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	39	0			39	0	0
Meat, mixed meat - meat products - fermented sausages - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	15	0			15	0	0
Other processed food products and prepared dishes - at catering - Surveillance - official controls	PHA	Single	10g, 25g	220	0	220	0	65	0	0
Other processed food products and prepared dishes - at processing plant - Surveillance - official controls	SVFI	Batch	25g	16	2	16	2			
Other processed food products and prepared dishes - at retail - domestic production - Surveillance - official controls	PHA	Batch	10g, 25g	1227	17	1038	17	570	0	3
Other processed food products and prepared dishes - sandwiches - at catering - Surveillance - official controls	PHA	Single	10g	13	0	13	0	13	0	0
Other processed food products and prepared dishes - sandwiches - at retail - domestic production - Surveillance - official controls	PHA	Batch	10g	459	4	459	4	198	1	1
Sauce and dressings - mayonnaise - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	10g	31	0	31	0	31	0	0
Spices and herbs - at retail - domestic production - Surveillance - official controls	PHA	Batch	25g	5	0	5	0	5	0	0

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	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 - at processing plant - Surveillance - official controls	SVFI	Batch	25g	2	0			2	0	0
Cheeses made from cows' milk - hard - made from pasteurised milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	5	0			5	0	0
Cheeses made from cows' milk - hard - made from pasteurised milk - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	3	0			3	0	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls	SVFI	Batch	25g	178	4	178	4			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	114	0			114	0	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	13	0			13	0	0
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls	SVFI	Batch	25g	3	0	3	0			
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	1	0			1	0	0
Cheeses made from sheep's milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls	SVFI	Batch	25g	3	0	3	0			

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	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 sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - Surveillance - official controls	SVFI	Batch	25g	364	4	289	4	75	0	0
Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	10g	25	0	15	0	25	0	0
Cheeses, made from mixed milk from cows, sheep and/or goats - hard - made from pasteurised milk - at processing plant - Surveillance - official controls	SVFI	Batch	25g	9	0	9	0			
Cheeses, made from mixed milk from cows, sheep and/or goats - hard - made from pasteurised milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	3	0			3	0	0
Cheeses, made from mixed milk from cows, sheep and/or goats - hard - made from raw or low heat-treated milk - at retail - domestic production - Surveillance - official controls	PHA	Batch	25g	5	0	5	0	5	0	0
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls	SVFI	Batch	25g	7	0	7	0			
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - made from pasteurised milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	5	0			5	0	0
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - made from pasteurised milk - at retail - imported - Surveillance - official controls	SVFIb	Batch	10g	1	0			1	0	0

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	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 - at processing plant - Surveillance - official controls	SVFI	Batch	10g, 25g	43	1	41	1	2	0	0
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - made from raw or low heat-treated milk - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	10g, 25g	89	0	12	0	87	0	0
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - made from raw or low heat-treated milk - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	3	0			3	0	0
Dairy products (excluding cheeses) - butter - at processing plant - Surveillance - official controls	SVFI	Batch	25g	19	0	19	0			
Dairy products (excluding cheeses) - butter - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	63	0			63	0	0
Dairy products (excluding cheeses) - butter - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	2	0			2	0	0
Dairy products (excluding cheeses) - cream - at processing plant - Surveillance - official controls	SVFI	Batch	10ml, 25ml	28	0	27	0	1	0	0
Dairy products (excluding cheeses) - cream - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10ml	16	0			16	0	0
Dairy products (excluding cheeses) - cream - at retail - imported - Surveillance - official controls	SVFI	Batch	10ml	1	0			1	0	0
Dairy products (excluding cheeses) - dairy desserts - at processing plant - Surveillance - official controls	SVFI	Batch	10g, 25g	31	0	25	0	6	0	0

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	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
Dairy products (excluding cheeses) - dairy desserts - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	10g	172	0	62	0	110	0	0
Dairy products (excluding cheeses) - dairy desserts - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	19	0	7	0	19	0	0
Dairy products (excluding cheeses) - dairy products, not specified - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	10g, 25g	47	0	31	0	44	0	0
Dairy products (excluding cheeses) - dairy products, not specified - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	1	0			1	0	0
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - Surveillance - official controls	SVFI	Batch	10g, 25g	54	0	46	0	8	0	0
Dairy products (excluding cheeses) - fermented dairy products - at retail - domestic production - Surveillance - official controls	SVFI, PHA	Batch	10g, 25g	139	0	10	0	139	0	0
Dairy products (excluding cheeses) - fermented dairy products - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	6	0			6	0	0
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - Surveillance - official controls	SVFI	Batch	10g, 25g	11	0	6	0	5	0	0
Dairy products (excluding cheeses) - milk powder and whey powder - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	5	0			5	0	0
Infant formula - at retail - Surveillance - official controls	PHA	Batch	25g	496	0	496	0			

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	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
Milk, cows' - UHT milk - at processing plant - Surveillance - official controls	SVFI	Batch	25ml	11	0	9	0	2	0	0
Milk, cows' - UHT milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10ml	21	0			21	0	0
Milk, cows' - pasteurised milk - at processing plant - Surveillance - official controls	SVFI	Batch	10/25ml	27	0	20	0	7	0	0
Milk, cows' - pasteurised milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10ml	42	0			42	0	0
Milk, cows' - pasteurised milk - at retail - imported - Surveillance - official controls	SVFI	Batch	10ml	8	0			8	0	0
Milk, cows' - raw - at farm - animal sample - milk - Surveillance - official controls	SVFI	Single	25ml	267	21	267	21			
Milk, goats' - pasteurised - at processing plant - Surveillance - official controls	SVFI	Batch	25ml	1	0	1	0			
Milk, goats' - pasteurised - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10ml	1	0			1	0	0
Milk, goats' - raw - at farm - animal sample - Surveillance - official controls	SVFI	Batch	10ml	1	0			1	0	0
Milk, sheep's - raw - at farm - animal sample - Surveillance - official controls	SVFI	Batch	25ml	1	0	1	0			

2.3.4 Listeria in animals

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria	L. monocytogenes	Listeria spp., unspecified
Cattle (bovine animals) - at farm - animal sample - blood - Clinical investigations	SVFI	Animal	351	18	18	
Cattle (bovine animals) - at farm - animal sample - organ/tissue - Clinical investigations	SVI	Animal	80	0		
Cattle (bovine animals) - at farm - animal sample - organ/tissue - Monitoring - industry sampling - objective sampling	SVFI	Animal	29	0		
Deer - at zoo - Clinical investigations (animal sample - organs/tissues)	SVFI	Animal	5	0		
Dogs - Clinical investigations (animal sample - organs/tissues)	SVFI	Animal	4	0		
Goats - at farm - animal sample - blood - Clinical investigations	SVFI	Animal	1	0		
Goats - at farm - animal sample - organ/tissue - Monitoring - industry sampling - objective sampling	SVFI	Animal	2	0		
Penguin - at zoo - Clinical investigations (animal sample - organ/tissue)	SVFI	Animal	5	0		
Pigs - at farm - animal sample - organ/tissue - Monitoring - industry sampling - objective sampling	SVFI	Animal	32	0		
Poultry, unspecified - at farm - animal sample - faeces - Monitoring - industry sampling - objective sampling	SVFI	Flock	412	0		

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria	L. monocytogenes	Listeria spp., unspecified
Sheep - at farm - animal sample - Clinical investigations (CNS, brain)	SVI, SVFI	Animal	54	5	5	
Sheep - at farm - animal sample - blood - Clinical investigations	SVFI	Animal	22	1	1	
Sheep - at farm - animal sample - foetus/stillbirth - Clinical investigations	SVFI	Animal	106	3	3	
Sheep - at farm - animal sample - organ/tissue - Clinical investigations	SVI, SVFI	Animal	69	4	4	
Sheep - at farm - animal sample - organ/tissue - Monitoring - industry sampling - objective sampling	SVFI	Animal	87	0		

Footnote:

SVI - State Vetrinary Institute
SVFI - State Veterinary and Food Institute

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.
Foodstuffs
A total 367 samples were examined for presence of VTEC with positive findings in 2 samples (0,54%). From that 269 samples of raw cow´s milk at farms were tested and in one sample was detected E.coli O157. In genes responsible for toxin production this strain was detected genes eae and no vtx1 and vtx2 genes. There were investigated 98 samples of sheep cheeses. In one sample there was detected presence of strain O26 without presence of genes responsible for toxin production. This strain was non-patogenic.

2.4.2 Escherichia coli, pathogenic in foodstuffs

Table VT E. coli in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Cheeses made from sheep's milk - at farm - Surveillance - official controls	SVFI	Single	25g	98	1		1	
Milk, cows' - raw - at farm - Monitoring - official sampling	SVFI	Single	25ml	269	1	1		

Footnote:

SVFI - State Veterinary and Food Institutes

2.4.3 Escherichia coli, pathogenic in animals

Table VT E. coli in animals

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Pigs - at farm - animal sample - faeces - Clinical investigations	SVFI	Animal	10	0				

Footnote:

SVFI - State Veterinary and Food Institute

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 serious disease 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 2009 there were investigated 38 samples of lymphonodes and parenchymal organs. From these samples 9 of them were taken from cattle, 25 from pigs and one sample from parrot, roe deer and dog. Samples from cattle were taken at slaughterhouses, except one case, when sample was taken at farm and one with unknown sampling place. All samples from pigs were taken at slaughterhouses. Sample from dog was taken at veterinary clinic. Sample from parrot was taken directly in National Reference Laboratory for tuberculosis (Mycobacterium bovis) and other mycobacterioses. Sampling place of sample from roe deer was unknown.

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. From all investigated samples 16 samples were positive. Positive findings were recorded in cattle and in one case Mycobacterium caprae from Mycobacterium tuberculosis complex was typized and in one case as Mycobacterium kansasii. In pigs were positive findings 10x typized as Mycobacterium avium subsp. avium and 3x as PPEM. In poultry was positive finding typized as Mycobacterium avium subsp. Avium.

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

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:

-once per year 33% of holdings in the district 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
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)
-in holding, in case of evidence of a significant changes indicating tuberculosis within post mortem inspection (suspicion of the tuberculosis)
-once per year breeding boars in insemination centre
-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
-slaughtering of positive reactors
-looking for source of infection
-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 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	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified	M. avium complex	M. avium complex - M. avium subsp. avium	M. caprae	Mycobacterium, atypical
Cattle (bovine animals) - at slaughterhouse - animal sample - lymph nodes - Clinical investigations	SVFI	Animal	9	2						1	1
Dogs - Clinical investigations	SVFI	Animal	2	0							
Pigs - at slaughterhouse - animal sample - lymph nodes - Clinical investigations	SVFI	Animal	25	13					10		3
Poultry, unspecified - at farm - animal sample - organ/tissue - Clinical investigations	SVFI	Animal	1	1					1		
Zoo animals, all - at farm - animal sample - organ/tissue - Clinical investigations	SVFI	Animal	2	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	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			
Banskobystrický kraj	3265	77095	3265	100	0	0	every three years	13335	200	0	0
Bratislavský kraj	79	14031	79	100	0	0	every three years	3263	0	0	0
Košický kraj	932	45803	932	100	0	0	every three years	8940	34	5	0
Nitriansky kraj	766	70492	766	100	0	0	every three years	13377	53	0	0
Prešovský kraj	1584	78566	1584	100	0	0	every three years	18394	0	0	0
Trenčiansky kraj	492	45500	491	99.8	1	.2	every three years	5862	0	1	1
Trnavský kraj	552	82090	552	100	0	0	every three years	9701	0	0	0
Žilinský kraj	2618	60560	2618	100	0	0	every three years	12615	0	0	0
Total : [1)]	10288	474137	10287	99.99	1	.01	N.A.	85487	287	6	1

Comments:

[1)] N.A.

Footnote:

1 positive case - originated from import

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 - 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. In case of detection of suspicion on presence of bovine brucellosis, a respective veterinary administration authority immediately issued measures for the respective holding in order to confirm or exclude the disease in the holding, it mainly restricted movement from the holding, ordered separate stabling of infected animals or animals suspected from the disease, from healthy animals, ensured taking of suitable samples for laboratory examination.
Ordered measures were cancelled only after an official ruling out of bovine brucellosis in the holding – the negative result of the laboratory examination.
In case of confirmation of brucellosis the outbreak of the disease was defined and it was proceeded either using the radical or elimination method of eradication of the holding.

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

Slovakia is officially free of brucellosis (B.melitensis, B.abortus).

Recent actions taken to control the zoonoses

Within the framework of „ Plan of veterinary prevention and protection of state territory in 2009“continuous monitoring of epidemiological situation through monitoring of anibodies against Brucella abortus in holdings was carried out in 2009. Detection of postinfection anti-brucella antibodies was performed within targeted intravital diagnostics in case of suspicion that aborts of female animals were caused by Brucella and within preventive diagnostics in holdings.

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, foetus, 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

Bacteriologically there were investigated 611 samples of cattle and serologically 85 809 samples in 2009. No positive result was recorded.

B. 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

In 2009, in goats there were investigated 10 samples bacteriologically and 921 serologically with no positive result.

C. 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

In 2009, 230 samples from ewes were investigated bakteriologically and 21 799 serologically. No positive sample was recorded.

Table Brucellosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Brucella	B. abortus	B. melitensis	B. suis	Brucella spp., unspecified
Bison - Monitoring	SVI, SVFI	Animal	5	0				
Cats - Survey (animal sample - blood)	SVI, SVFI	Animal	2	0				
Cattle (bovine animals) - at farm - animal sample - blood - Monitoring - official sampling - objective sampling	SVI, SVFI	Animal	85809	0				
Cattle (bovine animals) - at farm - animal sample - foetus/stillbirth - Monitoring - official sampling - objective sampling	SVI, SVFI	Animal	611	0				
Deer - farmed - at farm - animal sample - blood - Survey	SVI, SVFI	Animal	126	0				
Dogs - Survey (animal sample - blood)	SVI, SVFI	Animal	6	0				
Goats - at farm - animal sample - blood - Monitoring - official sampling - objective sampling	SVI, SVFI	Animal	921	0				
Goats - at farm - animal sample - foetus/stillbirth - Monitoring - official sampling - objective sampling	SVI, SVFI	Animal	10	0				
Hares - wild - Survey (animal sample - blood)	SVI, SVFI	Animal	11	0				
Pigs - at farm - animal sample - blood - Monitoring - official sampling - objective sampling	SVI, SVFI	Animal	4030	0				
Pigs - at farm - animal sample - foetus/stillbirth - Monitoring - official sampling - objective sampling	SVI, SVFI	Animal	118	0				
Sheep - at farm - animal sample - blood - Monitoring - official sampling - objective sampling	SVI, SVFI	Animal	21799	0				

Table Brucellosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Brucella	B. abortus	B. melitensis	B. suis	Brucella spp., unspecified
Sheep - at farm - animal sample - foetus/stillbirth - Monitoring - official sampling - objective sampling	SVI, SVFI	Animal	230	0				
Solipeds, domestic - horses - at farm - animal sample - blood - Monitoring - official sampling - objective sampling	SVI, SVFI	Animal	146	0				
Solipeds, domestic - horses - at farm - animal sample - foetus/stillbirth - Monitoring - official sampling - objective sampling	SVI, SVFI	Animal	4	0				
Zoo animals, all - at zoo - Survey (animal sample - blood)	SVI, SVFI	Animal	7	0				

Footnote:

SVI - State Veterinary Institute
SVFI - State Veterinary and Food Institute

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
Banskobystrický kraj	943	122232	943	100	0	0	613	5533	0	110	0	14	0	0
Bratislavský kraj	17	435	17	100	0	0	9	30	0	0	0	0	0	0
Košický kraj	360	47457	360	100	0	0	354	3322	0	33	0	33	0	0
Nitriansky kraj	185	10900	185	100	0	0	103	605	0	0	0	0	0	0
Prešovský kraj	442	78167	442	100	0	0	406	4688	0	137	0	55	0	0
Trenčiansky kraj	142	30788	142	100	0	0	139	1855	0	8	0	2	0	0
Trnavský kraj	72	2383	72	100	0	0	52	231	0	54	0	1	0	0
Žilinský kraj	1589	88893	1589	100	0	0	1309	4942	0	53	0	3	0	0
Total : [1)]	3750	381255	3750	100	0	0	2985	21206	0	395	0	108	0	0

Comments:

[1)] N.A.

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 microbio logically	Number of animals positive microbio logically
																		Sero logically	BST		
Banskobystrický kraj	3265	77095	3265	100	0	0	680	13964	0	0	0	0	331	0	0	331	0	0	0	30	0
Bratislavský kraj	79	14031	79	100	0	0	13	4196	0	0	0	0	123	0	0	123	0	0	0	1	0
Košický kraj	932	45803	932	100	0	0	323	8204	0	0	0	0	192	0	0	192	0	0	0	71	0
Nitriansky kraj	766	70492	766	100	0	0	126	10926	0	0	0	0	241	0	0	241	0	0	0	10	0
Prešovský kraj	1584	78566	1584	100	0	0	319	17658	0	0	0	0	531	0	0	531	19	0	0	184	0
Trenčiansky kraj	492	45500	492	100	0	0	106	2560	0	0	0	0	86	0	0	86	0	0	0	6	0
Trnavský kraj	552	82090	552	100	0	0	114	11044	0	0	0	0	523	0	0	473	0	0	0	92	0
Žilinský kraj	2618	60560	2618	100	0	0	526	13817	0	0	0	0	197	0	0	197	0	0	0	5	0
Total : [1)]	10288	474137	10288	100	0	0	2207	82369	0	0	0	0	2224	0	0	2174	19	0	0	399	0

Comments:

[1)] N.A.

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.

Yersinia spp. in animals

In 2009 there were investigated 411 animals in case of suspicion on yersiniosis. Mostly foeces and organs were sampled with no positive finding of Yersinia spp.

2.7.2 Yersinia in animals

Table Yersinia in animals

	Source of information	Sampling unit	Units tested	Total units positive for Yersinia	Y. enterocolitica	Y. pseudotuberculosis	Yersinia spp., unspecified	Y. enterocolitica - O:3	Y. enterocolitica - O:9	Y. enterocolitica - Y. enterocolitica, unspecified
Birds - at zoo - Clinical investigations (animal sample - faeces)	SVFI	Animal	6	0						
Birds - zoo animal - at zoo - Clinical investigations (animal sample - organ/tissue)	SVFI	Animal	8	0						
Cats - at farm - animal sample - Clinical investigations (Swab)	SVFI	Animal	5	0						
Cats - at farm - animal sample - faeces - Clinical investigations	SVFI	Animal	7	0						
Cattle (bovine animals) - at farm - animal sample - Clinical investigations (swab)	SVFI	Animal	5	0						
Cattle (bovine animals) - at farm - animal sample - faeces - Clinical investigations	SVFI	Animal	7	0						
Cattle (bovine animals) - at farm - animal sample - organ/tissue - Clinical investigations	SVFI	Animal	123	0						
Dogs - at farm - animal sample - Clinical investigations (swab)	SVFI	Animal	10	0						
Dogs - at farm - animal sample - faeces - Clinical investigations	SVFI	Animal	52	0						
Dogs - at farm - animal sample - organ/tissue - Clinical investigations	SVFI	Animal	10	0						
Eagle - Clinical investigations (animal sample - organ/tissue)	SVFI	Animal	2	0						

Table Yersinia in animals

	Source of information	Sampling unit	Units tested	Total units positive for Yersinia	Y. enterocolitica	Y. pseudotuberculosis	Yersinia spp., unspecified	Y. enterocolitica - O:3	Y. enterocolitica - O:9	Y. enterocolitica - Y. enterocolitica, unspecified
Falcons - Clinical investigations (animal sample - organ/tissue)	SVFI	Animal	1	0						
Gallus gallus (fowl) - broilers - at farm - animal sample - organ/tissue - Clinical investigations	SVFI	Animal	38	0						
Goats - at farm - animal sample - organ/tissue - Clinical investigations	SVFI	Animal	6	0						
Hares - at farm - animal sample - faeces - Clinical investigations	SVFI	Animal	1	0						
Hares - at farm - animal sample - organ/tissue - Clinical investigations	SVFI	Animal	1	0						
Minks - at farm - animal sample - Clinical investigations	SVFI	Animal	2	0						
Minks - at farm - animal sample - organ/tissue - Clinical investigations	SVFI	Animal	3	0						
Pigeons - at farm - animal sample - organ/tissue - Clinical investigations	SVFI	Animal	5	0						
Pigs - at farm - animal sample - organ/tissue - Clinical investigations	SVFI	Animal	29	0						
Sheep - at farm - animal sample - organ/tissue - Clinical investigations	SVFI	Animal	86	0						
Wild animals - at farm - animal sample - Clinical investigations	SVFI	Animal	4	0						

Footnote:
SVFI - State Veterinary and Food Institute

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 2009, in the Slovak Republic, 166 410 susceptible animals were examined for the presence of larvae of Trichinella spp. of which 17 wildlife were positive. In all positive cases T. britovi was detected.

In wildlife, Trichinella britovi was found in wild boars and foxes.

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. In comparison 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 (as a source of infection)

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 Trichinella in animals

A. 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 2009, no samples in horses were investigated.

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 (as a source of infection)

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

B. 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 verification of the Trichinella species

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.

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

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	T. spiralis	Trichinella spp., unspecified	T. britovi
Badgers - wild - from hunting - Monitoring	SVI, SVFI	Animal	2	0			
Bears - wild - from hunting - Monitoring	SVI, SVFI	Animal	25	0			
Foxes - wild - from hunting - Monitoring - official sampling - selective sampling (5 foxes from 1 district)	SVI, SVFI	Animal	193	13			13
Pigs - at farm - animal sample - organ/tissue - Monitoring - official sampling - selective sampling (home slaughters from selected districts)	SVI, SVFI	Animal	339	0			
Pigs - at slaughterhouse - animal sample - meat - Surveillance - official controls	SVI, SVFI	Animal	153246	0			
Wild boars - wild - from hunting - Monitoring - official sampling - objective sampling	SVI, SVFI	Animal	12605	4			4

Footnote:

SVI - State Veterinary Institute
SVFI - State Veterinary and Food Institute

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 2009, 1876 animals were investigated for presence of adult Echinococci and evolutionary stages, with no positive finding.
Except laboratory examinations also findings of larvocysts were reported within post-mortem inspection. In sheep, 25 larvocyst were identified, in cattle, 3 larvocysts and in pigs, 73 larvocysts. These positive findings didn´t confirmed by laboratory examination.
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 (as a source of infection)

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	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
African wild dog - zoo animals - at zoo - Survey	SVI, SVFI	Animal	1	0			
Cats - Clinical investigations	SVI, SVFI	Animal	218	0			
Dogs - Clinical investigations	SVI, SVFI	Animal	1631	0			
Foxes - wild - from hunting - Survey	SVI, SVFI	Animal	1	0			
Jaguar - zoo animals - at zoo - Survey	SVI, SVFI	Animal	1	0			
Leopards - zoo animals - at zoo - Survey	SVI, SVFI	Animal	3	0			
Lion - zoo animals - at zoo - Survey	SVI, SVFI	Animal	4	0			
Lynx - zoo animal - at zoo - Survey	SVI, SVFI	Animal	6	0			
Pigs - at slaughterhouse - animal sample - Survey	SVI, SVFI	Animal	4	0			
Tiger - zoo animals - at zoo - Survey	SVI, SVFI	Animal	6	0			
Zoo animals, all - at zoo - Survey	SVI, SVFI	Animal	1	0			

Footnote:

SVI - State Veterinary Institute
SVFI - State Veterinary and Food Institute

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
2009	273	55	20,4

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.
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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 2009, 273 blood samples were investigated and 55 samples had positive reaction, in percentage 20,43%. Serums of cats represented the most of all samples, 139 samples (50,7%) with 19,4% seropositivity. In dogs, 95 blood samples (34,6%) were investigated with 18,9% seropositivity. Only 8% of samples came from cattle holdings with negative results. 6,5 % of all samples were from goats but with the highest percentage of all – 58,8%.
In comparison with previous years 2007 and 2008, number of samples investigated declined.

In 2008, there were investigated 362 samples for toxolasmosis in totall.
Samples 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 (as a source of infection)

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 Toxoplasma in animals

Table Toxoplasma in animals

	Source of information	Sampling unit	Units tested	Total units positive for Toxoplasma	T. gondii
Cats - Clinical investigations (animal samples - blood)	SVI, SVFI	Animal	139	27	27
Cattle (bovine animals) - Clinical investigations (animal samples - blood)	SVI, SVFI	Animal	22	0	
Dogs - Clinical investigations (animal samples - blood)	SVI, SVFI	Animal	95	18	18
Goats - Clinical investigations (animal samples - blood)	SVI, SVFI	Animal	17	10	10

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 2009, within Slovak Republic, 3 708 animals were tested, without finding of positive units of lyssavirus. The highest number of samples came from foxes. Last positive findings of lyssavirus in foxes were in 4 foxes in 2006, a total 4241 animals were tested in 2006, in 2007 were investigated 4309 samples and in 2008 there were tested 4009 samples. Amount of samples is in a downtrend.

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

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

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

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 2009 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)	Lyssavirus, unspecified	Classical rabies virus (genotype 1)	European Bat Lyssavirus - unspecified
Badgers - Survey	SVI, SVFI	Animal	4	0			
Bats - Survey	SVI, SVFI	Animal	2	0			
Cats - Survey	SVI, SVFI	Animal	150	0			
Cattle (bovine animals) - at farm - animal sample - organ/tissue - Survey	SVI, SVFI	Animal	6	0			
Deer - wild - roe deer - Survey	SVI, SVFI	Animal	13	0			
Dogs - Survey	SVI, SVFI	Animal	241	0			
Foxes - from hunting - Monitoring - official sampling - selective sampling [1)]	SVI, SVFI	Animal	3015	0			
Foxes - from hunting - Survey	SVI, SVFI	Animal	188	0			
Hamsters - Survey	SVI, SVFI	Animal	5	0			
Lynx - Survey	SVI, SVFI	Animal	1	0			
Marten - Survey	SVI, SVFI	Animal	13	0			
Mice - Survey	SVI, SVFI	Animal	11	0			
Other animals - Survey	SVI, SVFI	Animal	4	0			
Other animals - wild - Survey	SVI, SVFI	Animal	9	0			
Polecats - Survey	SVI, SVFI	Animal	2	0			
Poultry, unspecified - at farm - animal sample - organ/tissue - Survey	SVI, SVFI	Animal	3	0			
Rabbits - Survey	SVI, SVFI	Animal	10	0			
Rats - Survey	SVI, SVFI	Animal	20	0			

Table Rabies in animals

	Source of information	Sampling unit	Units tested	Total units positive for Lyssavirus (rabies)	Lyssavirus, unspecified	Classical rabies virus (genotype 1)	European Bat Lyssavirus - unspecified
Squirrels - Survey	SVI, SVFI	Animal	2	0			
Weasel - Survey	SVI, SVFI	Animal	1	0			
Wild boars - Survey	SVI, SVFI	Animal	7	0			
Wild cat (Felis silvestris) - Survey	SVI, SVFI	Animal	1	0			

Comments:

[1)] oral vaccination

Footnote:

SVI - State Veterinary Institute
SVFI - State Veterinary and Food Institute

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)	SVFI, SVI	Animal	664	6	6
Goats	SVFI, SVI	Animal	69	0	
Sheep	SVFI, SVI	Animal	58	0	
Zoo animals, all	SVFI, SVI	Animal	3	0	

Footnote:

All samples were tested serologically.

2.13 ANISAKIOSIS

2.13.1 General evaluation of the national situation

2.13.2 Anisakis in foodstuffs

Table Anisakis in Food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Anisakis	Anisakis spp., unspecified
Fish - at retail - imported - Surveillance - official controls	SVFI	Batch		15	2	2

Footnote:

SVFI - State Veterinary and Food Institute

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1 ESCHERICHIA COLI, NON-PATHOGENIC

3.1.1 General evaluation of the national situation

3.1.2 Antimicrobial resistance in Escherichia coli, non-pathogenic

Table Cut-off values used for antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol		16	
Tetracyclines	Tetracycline		8	
Fluoroquinolones	Ciprofloxacin		0.03	
Quinolones	Nalidixic acid		16	
Trimethoprim	Trimethoprim		2	
Sulfonamides	Sulfonamides		256	
Aminoglycosides	Streptomycin		16	
	Gentamicin		2	
Cephalosporins	Cefotaxim		0.25	

Table Cut-off values used for antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Animals

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Penicillins	Ampicillin		8	

Table Cut-off values used for antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Food

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol		16	
Tetracyclines	Tetracycline		8	
Fluoroquinolones	Ciprofloxacin		0.03	
Quinolones	Nalidixic acid		16	
Trimethoprim	Trimethoprim		2	
Sulfonamides	Sulfonamides		256	
Aminoglycosides	Streptomycin		16	
	Gentamicin		2	
Cephalosporins	Cefotaxim		0.25	
Penicillins	Ampicillin		8	

Table Cut-off values used for antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol		16	
Tetracyclines	Tetracycline		8	
Fluoroquinolones	Ciprofloxacin		0.03	
Quinolones	Nalidixic acid		16	
Trimethoprim	Trimethoprim		2	
Sulfonamides	Sulfonamides		256	
Aminoglycosides	Streptomycin		16	
	Gentamicin		2	
Cephalosporins	Cefotaxim		0.25	
Penicillins	Ampicillin		8	

3.2 ENTEROCOCCUS, NON-PATHOGENIC

3.2.1 General evaluation of the national situation

3.2.2 Antimicrobial resistance in Enterococcus, non-pathogenic isolates

Table Cut-off values for antibiotic resistance of Enterococcus, non-pathogenic in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Streptomycin		512	
	Gentamicin		32	
Amphenicols	Chloramphenicol		32	
Penicillins	Ampicillin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Streptogramins	Quinupristin/Dalfopristin		32	
Tetracyclines	Tetracycline		2	
Oxazolidines	Linezolid		4	

Table Cut-off values for antibiotic resistance of Enterococcus, non-pathogenic in Food

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Streptomycin		512	
	Gentamicin		32	
Amphenicols	Chloramphenicol		32	
Penicillins	Ampicillin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Streptogramins	Quinupristin/Dalfopristin		32	
Tetracyclines	Tetracycline		2	
Oxazolidines	Linezolid		4	

Table Cut-off values for antibiotic resistance of Enterococcus, non-pathogenic in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Streptomycin		512	
	Gentamicin		32	
Amphenicols	Chloramphenicol		32	
Penicillins	Ampicillin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Streptogramins	Quinupristin/Dalfopristin		32	
Tetracyclines	Tetracycline		2	
Oxazolidines	Linezolid		4	

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1 ENTEROBACTER SAKAZAKII

4.1.1 General evaluation of the national situation

4.1.2 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

foodstuffs for children, infant formula

Diagnostic/analytical methods used

ISO/DTS 22964 Detection of Enterobacter sakazakii

Results of the investigation

1 samples were positive for presence of Enterobacter sakazakii.

Table Enterobacter sakazakii in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Enterobacter sakazakii	E. sakazakii
Foodstuffs intended for special nutritional uses - dried dietary foods for special medical purposes intended for infants below 6 months - at retail - Monitoring - official sampling	PHA	Single	10g	233	10	10
Infant formula - dried - at retail - Monitoring - official sampling	PHA	Single	10g	263	1	1

4.2 HISTAMINE

4.2.1 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

4.2.2 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 2009, 45 samples investigated without finding over limit.
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 - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	10g	29	0	29			
Fish - Fishery products from fish species associated with a high amount of histidine - not enzyme maturated - at retail - domestic production - Surveillance - official controls	SVFI	Batch	10g	6	0	6			
Fish - Fishery products from fish species associated with a high amount of histidine - not enzyme maturated - at retail - imported - Surveillance - official controls	SVFI	Batch	10g	10	0	10			

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

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.

Results of the investigation

In 2009, 20 samples of cheeses, mostly soft and semi-soft cheeses made from shep milk, were invwstigated on presence of staphylococcal enterotoxin with positive results in 2 samples.
In other food, 3 samples of confectionery, processed food and dishes were positive from 23 samples investigated.

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

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 raw or low heat-treated milk - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	14	2
Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - at retail - domestic production - Surveillance - official controls	SVFI	Batch	25g	3	0
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - official controls	SVFI	Batch	25g	2	0
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - made from raw or low heat-treated milk - at retail - domestic production - Surveillance - official controls - selective sampling	SVFI	Batch	25g	1	0
Confectionery products and pastes - at retail - domestic production - Surveillance - official controls - selective sampling	PHA	Single	10g	6	2
Dairy products (excluding cheeses) - ice-cream - at retail - domestic production - Surveillance - official controls - selective sampling	PHA	Single	10g	2	0
Other processed food products and prepared dishes - at catering - Surveillance - official controls - selective sampling	PHA	Single	10g	15	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 foodborne outbreaks

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 2009 there were recorded 52 outbreaks. From this number: food-borne viruses – 46%, unknown causative agent – 33% and salmonellosis – 15%. From 52 outbreaks, there were 6 verified outbreaks (total 167cases).
Outbreaks of salmonellosis: There were reported 289 small outbreaks (1-9 cases in one outbreak) included family outbreaks, when were affected 767 persons.
In 2008 there were recorded 75 outbreaks. Hereof : food-borne viruses – 32%, unknown causative agent – 31%, salmonellosis – 28%. From 75 outbreaks, there were 9 verified outbreaks (total 236 cases). There were reported 259 small (1-9 cases in one outbreak) outbreaks of salmonellosis, 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., hereof 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 outbreak, 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
Foodborne viruses – hospital/medical care facilities and nursery houses

Evaluation of the severity and clinical picture of the human cases

No death cases were recorded. In 6 verified outbreaks were reported 167 cases (from this number: 18 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.

Table Foodborne Outbreaks: summarised data

	Total number of outbreaks	Outbreaks	Human cases	Hospitalized	Deaths	Number of verified outbreaks
Bacillus	1	0	unknown	unknown	unknown	1
Campylobacter	0	0	unknown	unknown	unknown	0
Clostridium	0	0	unknown	unknown	unknown	0
Escherichia coli, pathogenic	0	0	unknown	unknown	unknown	0
Foodborne viruses	2	2	235	72	0	0
Listeria	0	0	unknown	unknown	unknown	0
Other agents	1	0	unknown	unknown	unknown	1
Parasites	0	0	unknown	unknown	unknown	0
Salmonella	298	295	848	153	0	3
Staphylococcus	1	0	unknown	unknown	unknown	1
Unknown	0	0	unknown	unknown	unknown	0
Yersinia	0	0	unknown	unknown	unknown	0

Table Verified Foodborne Outbreaks: detailed data for Bacillus

Please use CTRL for multiple selection fields

B. cereus

	Value
Code	
Outbreaks	1
Human cases	16
Hospitalized	0
Deaths	0
Foodstuff implicated	Cereal products including rice and seeds/pulses (nuts, almonds)
More Foodstuff information	pastes
Type of evidence	Laboratory characterization of food and human isolates;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	unknown
Origin of foodstuff	unknown
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

Table Verified Foodborne Outbreaks: detailed data for Other agents

Please use CTRL for multiple selection fields

Other

	Value
Code	
Outbreaks	1
Human cases	13
Hospitalized	0
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff information	baked chicken
Type of evidence	Laboratory characterization of food and human isolates;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	unknown
Origin of foodstuff	unknown
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

Table Verified Foodborne Outbreaks: detailed data for Salmonella

Please use CTRL for multiple selection fields

S. Enteritidis

	Value
Code	
Outbreaks	1
Human cases	85
Hospitalized	11
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	dumpling
Type of evidence	Laboratory characterization of food and human isolates;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Take-away
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	
Outbreaks	1
Human cases	16
Hospitalized	6
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff information	Bakery products implicated. Baked chicken with stuffing+desserts contained eggs
Type of evidence	Laboratory characterization of food and human isolates;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis - PT 6

	Value
Code	
Outbreaks	1
Human cases	20
Hospitalized	1
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	apple pie with royal icing
Type of evidence	Laboratory characterization of food and human isolates;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

Table Verified Foodborne Outbreaks: detailed data for Staphylococcus

Please use CTRL for multiple selection fields

S. aureus

	Value
Code	
Outbreaks	1
Human cases	17
Hospitalized	0
Deaths	0
Foodstuff implicated	Vegetables and juices and other products thereof
More Foodstuff information	potato salad with onion
Type of evidence	Laboratory characterization of food and human isolates;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Hospital or medical care facility
Place of origin of problem	Other place of origin
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	