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 2006

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: **Slovakia**
Reporting Year: **2006**
Institutions and laboratories involved in reporting and monitoring:

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

PREFACE

This report is submitted to the European Commission in accordance with Article 9 of Council Directive 2003/ 99/ EC[1]. 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 2006. 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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[1] 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:

1st April 2007

Table Susceptible animal populations

* Only if different than current reporting year

Animal species	Category of animals	Livestock numbers (live animals)	Year*	Number of slaughtered animals	Year*	Number of holdings	Year*	Number of herds or flocks	Year*
Cattle (bovine animals)	dairy cows and heifers			58054					
	meat production animals			27386					
	calves (under 1 year)			1106					
	in total	524247		85440		19904			
Ducks	breeding flocks, unspecified - in total	5000				2		2	
	in total	5000				2		2	
Gallus gallus (fowl)	broilers	4000000		47727499		129		645	
	parent breeding flocks, unspecified - in total	90000				24		28	
	breeding flocks, unspecified - in total	90000				24		28	
	breeding flocks for meat production line - in total	68000				18		22	
	laying hens	2709000		1310960		46		60	
	parent breeding flocks for egg production line	22000				6		6	
	parent breeding flocks for meat production line	68000				18		22	
	breeding flocks for egg production line - in total	22000				6		6	
	in total	6889000		49048459		223		761	
Geese	breeding flocks, unspecified - in total	2000				2		2	
	meat production flocks	1000				1		1	
	in total	3000				3		3	
Goats	in total	5507				918			
Pigs	in total	921723		1111082		6808			
Sheep	animals under 1 year (lambs)			71749					
	in total	326322		8296		4949			
Solipeds, domestic	horses - in total	11500		12		500			
Turkeys	breeding flocks, unspecified - in total	240000				7		11	
	meat production flocks	160000				9		16	
	in total	400000		24842		16		27	

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

Up to the year 1989 the serovar Salmonellla typhimurium had prevalence, after 1989 in the animal health the increasing trend has Salmonella enteritidis and this trend is maintained till now.
Out of the total number of examinated samples of animals the salmonelosis agent was isolated as follows
2000 2,8 %
2001 2,4%
2002 0,9%
2003 0,8% samples.
The highest detection in most animals has Salmonella enteritidis, except for pigs, in which dominates species-specific serovar Salmonella choleraesuis.
Out the number of the positive samples of the finding of Salmonella enteritidis and salmonella typhimurium was as following:
S.enteritidis S. typhimurium
2000 71,7% 3,3%
2001 70,7% 2,1%
2002 66,0% 2,4%
2003 62,0% 0,8%
In the poultry not only the highest number of positive samples but also the greatest number of serovars is recorded.
Number of isolated serovars
2000 2001 2002 2003
Fowl 9 7 7 4
Turkey 11 11 7 3
Ducks 3 - 1 -
Geese 2 - 2 1

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 samples of foodstuffs were taken according the direction of State Vetrinary and Food Administration of the Slovak republic. Samles were taken by competent authority (District Veterinary and Food Administrations by vetrinary inspectors) according plan taking samples work out by District Veterinary and Food Administration.

Frequency of the sampling

according to work out a plan taking of samples

Diagnostic/ analytical methods used

Bacteriological method: STN ISO 6579

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Infantis	S. Kentucky
Meat from broilers (Gallus gallus)										
fresh	SVFI	batch	25g	324	21	20				1
minced meat										
intended to be eaten cooked	SVFI	batch	25g	3	0					
meat preparation										
intended to be eaten cooked	SVFI	batch	10g	102	0					
meat products										
raw but intended to be eaten cooked	SVFI	batch	25g	52	1				1	
cooked, ready-to-eat	SVFI	batch	25g	93	0					
mechanically separated meat (MSM)	SVFI	batch	10g	3	0					
Meat from turkey										
fresh	SVFI	batch	25g	41	0					
meat preparation										
intended to be eaten cooked	SVFI	batch	10g	3	0					
meat products										
raw but intended to be eaten cooked	SVFI	batch	25g	13	0					
Meat from duck										
meat products										
raw but intended to be eaten cooked	SVFI	batch	25g	2	0					

Footnote

SVFI - State Veterinary and Food Institutes

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Milk, cows'								
raw	SVFI	batch	25g	22	0			
raw milk for manufacture								
intended for manufacture of pasteurised/ UHT products	SVFI	batch	25g	11	0			
pasteurised milk	SVFI	batch	25g	201	0			
UHT milk	SVFI	batch	25g	47	0			
Milk, goats'								
raw	SVFI	batch	25g	3	0			
Milk, sheep's								
raw	SVFI	batch	25g	8	0			
intended for direct human consumption	SVFI	batch	25g	1	0			
Cheeses made from cows' milk								
soft and semi-soft	SVFI	batch	25g	155	0			
made from raw or low heat-treated milk	SVFI	batch	25g	42	0			
made from pasteurised milk	SVFI	batch	25g	735	0			
Cheeses made from sheep's milk								
soft and semi-soft	SVFI	batch	25g	168	0			
made from raw or low heat-treated milk	SVFI	batch	25g	824	0			
made from pasteurised milk	SVFI	batch	25g	66	0			
Dairy products (excluding cheeses)								
butter	SVFI	batch	25g	140	0			
cream	SVFI	batch	25g	175	0			
milk powder and whey powder	SVFI	batch	25g	58	0			
ice-cream	SVFI	batch	25g	81	0			
dairy desserts	SVFI	batch	25g	12	0			

dairy products, not specified	SVFI	batch	25g	368	0			
yoghurt	SVFI	batch	25g	54	0			

Footnote

SVFI - State Veterinary and Food Institutes

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Bredeney	S. Derby
Meat from pig										
fresh	SVFI	batch	25g	536	2		1		1	
minced meat										
intended to be eaten cooked	SVFI	batch	10g	151	0					
meat preparation										
intended to be eaten cooked	SVFI	batch	10g	506	1				1	
meat products										
raw but intended to be eaten cooked	SVFI	batch	25g	93	1					1
cooked, ready-to-eat	SVFI	batch	25g	2678	0					
mechanically separated meat (MSM)	SVFI	batch	25g	43	0					
offal	SVFI	batch	25g	65	0					
Meat from bovine animals										
fresh	SVFI	batch	25g	236	0					
minced meat										
intended to be eaten cooked	SVFI	batch	25g	5	0					
meat preparation										
intended to be eaten cooked	SVFI	batch	25g	41	0					
meat products										
raw but intended to be eaten cooked	SVFI	batch	25g	2	0					
cooked, ready-to-eat	SVFI	batch	25g	1	0					
Meat from sheep										
fresh	SVFI	batch	25g	8	0					
Meat from bovine animals and pig										
meat preparation										
intended to be eaten cooked	SVFI	batch	10g	17	0					
meat products	SVFI	batch	25g	61	0					
Meat from rabbit										
fresh	SVFI	batch	25g	1	0					

Meat from deer (venison)										
fresh	SVFI	batch	25g	27	0					
Meat from wild boar										
fresh	SVFI	batch	25g	5	0					
Meat from wild game - birds										
fresh	SVFI	batch	25g	3	0					
Other food	SVFI	batch	25g	37	0					

Footnote

SVFI - State Veterinary and Food Institutes

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Bareilly	S. Minnesota	S. Virchow	S. Infantis	S. Schwarzengrund
Eggs													
table eggs													
- at packing centre	SVFI	batch	25g	143	2	2							
- at retail	SVFI	batch	25g	160	7	6					1		
Egg products													
liquid	SVFI	batch	25g	33	0								
dried	SVFI	batch	25g	15	1				1				
Fishery products	SVFI	batch	25g	13	0								
Crustaceans	SVFI	batch	25g	1	0								
Fruits and vegetables													
precut													
ready-to-eat	SVFI	batch	25g	8	0								
products	SVFI	batch	25g	49	0								
non-precut	SVFI	batch	25g	3	0								
Juice													

fruit juice													
pasteurised	SVFI	batch	25g	14	0								
Fish													
cooked	SVFI	batch	25g	14	0								
raw	SVFI	batch	25g	38	0								
smoked	SVFI	batch	25g	11	0								
Fishery products, unspecified													
cooked	SVFI	batch	25g	29	0								
Other processed food products and prepared dishes													
noodles	SVFI	batch	25g	23	0								
pasta	SVFI	batch	25g	146	0								
unspecified													
ready-to-eat foods	SVFI	batch	25g	37	0								
non-ready-to-eat foods	SVFI	batch	25g	180	0								
containing raw egg	SVFI	batch	25g	1	0								
Bakery products	SVFI	batch	25g	52	0								
bread	SVFI	batch	25g	48	0								
cakes	SVFI	batch	25g	126	0								
pastry	SVFI	batch	25g	97	0								
Confectionery products and pastes	SVFI	batch	25g	17	0								
Fats and oils (excluding butter)													
fats	SVFI	batch	25g	3	0								
oils	SVFI	batch	25g	7	0								
Beverages, non-alcoholic	SVFI	batch	25g	1	0								
Sweets	SVFI	batch	25g	23	0								
Spices and herbs													

dried non-irradiated	SVFI	batch	25g	27	4						2		1	1
Other food	SVFI	batch	25g	165	0									

Footnote

SVFI - State Veterinary and Food Institutes

2.1.4. Salmonella in animals

A. Salmonella spp. in Gallus gallus - breeding flocks for egg production and flocks of laying hens

Monitoring system

Sampling strategy

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

One-day-old chickens: meconium sampling from walls inside the boxes by which the chickens were sent to the holding and dead chickens at the time on their arrival at the holding;
Rearing period: at the age of four weeks and two weeks before onset of laying in young hens;
Production period: every two weeks during the laying period, every eight weeks the official sampling.
In the Slovac Republic there are not existing the elite and grandparent flocks.

Laying hens flocks

One-day-old chickens: meconium sampling from walls inside the boxes by which the chickens were sent to the holding and dead chickens;
Rearing period: at the age of four weeks and two weeks before onset of laying in young hens;
Production period: every two weeks during the laying period;
Before slaughter at farm: two weeks before slaughter;
At slaughter: monitoring is not performed;
Eggs at packing centre:(flock based approach): monitoring is not performed.

Frequency of the sampling

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

Other: meconium sampling from walls inside the boxes by which the chickens were sent to the holding and dead chickens

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

Other: the sample is composed of individual fresh excrement samples, each weighing at least one gram, it is taken from randomly selected points in house, in specified amount according to the number of birds in the flock

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

Other: 1) in hatcheries incubating eggs in a hatchery with total incubation capacity of thousand eggs and more: a)commingle samples of meconium taken from 250 chickens hatched from the eggs sent to the hatchery from each breeding/ reproductive flock; b)samples of 50 dead embryos dead in-shell, or chickens hatched from the eggs sent to the hatchery from each breeding flock; 2) in holdings incubating eggs in a hatchery with total incubation capacity less than thousand eggs; the sample is composed of individual fresh excrement samples, each weighing at least one gram, it is taken from randomly selected points in house, in specified amount according to the number of birds in the flock.

Type of specimen taken

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

Other: meconium sampling from walls inside the boxes by which the chickens were sent to the holding and dead chickens

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

Other: the sample is composed of individual fresh excrement samples, each weighing at least one gram, it is taken from randomly selected points in house, in specified amount according to the number of birds in the flock

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

Other: 1) in hatcheries incubating eggs in a hatchery with total incubation capacity of thousand eggs and more: a)commingle samples of meconium taken from 250 chickens hatched from the eggs sent to the hatchery from each breeding/ reproductive flock; b) samples of 50 dead embryos dead in-shell, or chickens hatched from the eggs sent to the hatchery from each breeding flock; 2) in holdings incubating eggs in a hatchery with total incubation capacity less than thousand eggs; the sample is composed of individual fresh excrement samples, each weighing at least one gram, it is taken from randomly selected points in house, in specified amount according to the number of birds in the flock.

Laying hens: Day-old chicks

Other: meconium sampling from walls inside the boxes by which the chickens were sent to the holding and dead chickens

Laying hens: Rearing period

Other: the sample is composed of individual fresh excrement samples, each weighing at least one gram, it is taken from randomly selected points in house, in specified amount according to the number of birds in the flock

Laying hens: Production period

Other: the sample is composed of individual fresh excrement samples, each weighing at least one gram, it is taken from randomly selected points in house, in specified amount according to the number of birds in the flock

Laying hens: Before slaughter at farm

Other: the sample is composed of individual fresh excrement sampleseach weighing at least one gram, it is taken from randomly selected points in house, in specified amount according to the number of birds in the flock

Diagnostic/ analytical methods used

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

Bacteriological method: STN EN ISO 6579

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

Bacteriological method: STN EN ISO 6579

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

Bacteriological method: STN EN ISO 6579

Laying hens: Day-old chicks

Bacteriological method: STN EN ISO 6579

Laying hens: Rearing period

Bacteriological method: STN EN ISO 6579

Laying hens: Production period

Bacteriological method: STN EN ISO 6579

Laying hens: Before slaughter at farm

Bacteriological method: STN EN ISO 6579

Vaccination policy

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

In 2005, the vaccination of poultry breeding flocks by inactivated commercial vaccines registered by the Institute for State Control of Veterinary Biologicals and Medicaments in Nitra was permitted in the Slovak Republic.

Laying hens flocks

In 2005, the vaccination of poultry breeding flocks by inactivated commercial vaccines registered by the Institute for State Control of Veterinary Biologicals and Medicaments in Nitra was permitted in the Slovak Republic.

Control program/ mechanisms

Recent actions taken to control the zoonoses

- The control programs:
Pursuant to the Ordinance of the Government of the Slovak Republic No. 297/ 2003 Coll., each poultry holding shall be registered based on the allocation of official number and it is over the control of the competent DVFA. A part of supervision executed by the competent veterinary administration authority is the control over the observation of the National Eradication Program for salmonella infections in poultry flocks.
- Measures in case of the positive findings or single cases:
A.Poultry breeding/ reproductive flocks and hatcheries
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;
c)all birds in house shall be killed in compliance with the requirements of the peculiar rule, the official veterinarian of slaughterhouse is supplied by information on decision of killing in compliance with requirements of the peculiar rule or the birds shall be killed and safely disposed of in a way that maximum decrease the risk of salmonella spreading.
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

A.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).
B.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.
C.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.

B. Salmonella spp. in Gallus gallus - breeding flocks for meat production and broiler flocks

Monitoring system

Sampling strategy

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

In the breeding flocks of meat lines, the same monitoring system is applied as in the poultry laying flocks.

C. 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)

In 2004, 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.

Meat production flocks

In 2004, 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.

Vaccination policy

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

In the Slovak Republic, the vaccination of turkeys and waterfowl has not been performed.

Meat production flocks

In the Slovak Republic, the vaccination of turkeys and waterfowl has not been performed.

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.

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

Monitoring system

Sampling strategy

Breeding flocks

In 2004, 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.

Vaccination policy

Breeding flocks

In the Slovak Republic, the vaccination of turkeys and waterfowl has not been performed.

Meat production flocks

In the Slovak Republic, the vaccination of turkeys and waterfowl has not been performed.

Measures in case of the positive findings or single cases

Breeding flocks

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

Meat Production flocks

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

administration authority. Chicken restocking shall be in compliance with the requirements of the point Monitoring 2.A.1.
3)If the hatching eggs produced by the flocks, wherein the presence of Salmonella enteritidis or Salmonella typhimurium has been confirmed, are being in the hatchery, then they should be safely disposed of or treated as a very hazardous material in compliance with the peculiar rule.

Notification system in place

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

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

Monitoring system

Sampling strategy

Breeding flocks

In 2004, 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.

Vaccination policy

Breeding flocks

In the Slovak Republic, the vaccination of turkeys and waterfowl has not been performed.

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.

F. Salmonella spp. in pigs

Monitoring system

Sampling strategy

Breeding herds

In Slovakia, the active monitoring has not been performed. In the case of suspicion of the disease occurrence, the owner or person responsible for the holding shall take the samples on his/ her own expenses. The laboratory confirms or excludes the occurrence of infection and is obliged to send the isolated strain to the NRL for salmonellas.
Sampling strategy
The rectal swabs, excrements, carcasses or organs from dead animals are sent for the investigation.

Multiplying herds

In Slovakia, the active monitoring has not been performed. In the case of suspicion of the disease occurrence, the owner or person responsible for the holding shall take the samples on his/ her own expenses. The laboratory confirms or excludes the occurrence

of infection and is obliged to send the isolated strain to the NRL for salmonellas.
Sampling strategy
The rectal swabs, excrements, carcasses or organs from dead animals are sent for the investigation.

Fattening herds

In Slovakia, the active monitoring has not been performed. In the case of suspicion of the disease occurrence, the owner or person responsible for the holding shall take the samples on his/ her own expenses. The laboratory confirms or excludes the occurrence of infection and is obliged to send the isolated strain to the NRL for salmonellas.
Sampling strategy
The rectal swabs, excrements, carcasses or organs from dead animals are sent for the investigation.

Diagnostic/ analytical methods used

Breeding herds

Bacteriological method: STN EN ISO 6579

Multiplying herds

Bacteriological method: STN EN ISO 6579

Fattening herds at farm

Bacteriological method: STN EN ISO 6579

Fattening herds at slaughterhouse (herd based approach)

Bacteriological method: STN EN ISO 6579

Notification system in place

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

G. 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.

Table Salmonella in breeding flocks of Gallus gallus

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Tennessee
Gallus gallus (fowl)								
parent breeding flocks for egg production line (1)	SVFI	flock	98	0				
day-old chicks	SVFI	flock	4	0				
during rearing period	SVFI	flock	6	0				
during production period	SVFI	flock	219	0				
parent breeding flocks for meat production line (2)	SVFI	flock	1	0				
day-old chicks	SVFI	flock	95	0				
during rearing period	SVFI	flock	60	0				
during production period	SVFI	flock	452	3	2			1
hatching eggs	SVFI	flock	136	1	1			
parent breeding flocks, unspecified	SVFI	flock	373	1	1			
day-old chicks	SVFI	flock	28	0				
during rearing period	SVFI	flock	5	0				
during production period	SVFI	flock	25	0				
hatching eggs	SVFI	flock	43	1	1			

(1) : unspecified
(2) : unspecified

Footnote

SVFI - State Veterinary and Food Institutes

Table Salmonella in other poultry (Part A)

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Lille	S. Mbandaka	S. Agona	S. Anatum	S. Bareilly	S. Blockley	S. Hadar	S. Indiana	S. Infantis	S. Kentucky	S. Montevideo	S. Orion	S. Saintpaul
Gallus gallus (fowl)																				
laying hens (1)	SVFI	flock	43	0																
day-old chicks	SVFI	flock	12	2	2															
during rearing period	SVFI	flock	93	2	2															
during production period	SVFI	flock	1150	25	22															
broilers																				
day-old chicks	SVFI	flock	2103	60	57	1												2		
during rearing period	SVFI	flock	2137	33	14											1	15	3		
sampling in the framework of the broiler baseline study (2)	SVFI	flock	238	21	15	1		1	1	1				1		1	4		1	
unspecified	SVFI	flock	190	1	1															
Ducks																				
breeding flocks	SVFI	flock	5	2							1			1						
meat production flocks	SVFI	flock	14	4		2							1							

unspecified	SVFI	flock	51	9	2	1								1	3					
Geese																				
breeding flocks	SVFI	flock	1	0																
meat production flocks	SVFI	flock	12	3	1	1														1
unspecified	SVFI	flock	6	0																
Turkeys																				
breeding flocks	SVFI	flock	30	4												2				2
meat production flocks	SVFI	flock	29	4	2							1								1
unspecified	SVFI	flock	251	4	2															2

(1) : unspecified
(2) : 26 serotypes were isolated from 21 flocks positive for Salmonella - from 1 flock were isolated four serotypes (S. Enteritidis, S. Agona, S. Mbandaka, S. Lille) and from 2 flocks were isolated per two serotypes (S. Enteritidis and S. Kentucky, S. Enteritidis and S. Lille).

Footnote

SVFI - State Veterinary and Food Institutes;
12 isolates from baseline surveys in turkeys isolated from October to December 2006 (10 isolates S. Saintpaul with resistance patterns SuT, ASuT, ASuTWCep and 2 isolates S. Kiambu with resistance pattern ACSTNxG) will be reported together with the 2007 data in the next reporting period.

Table Salmonella in other poultry (Part B)

	S. Senftenberg	S. Tennessee	S. Virchow
Gallus gallus (fowl)			
laying hens (1)			
day-old chicks			
during rearing period			
during production period		1	2
broilers			
day-old chicks			
during rearing period			
sampling in the framework of the broiler baseline study (2)			
unspecified			
Ducks			
breeding flocks			
meat production flocks	1		
unspecified	2		
Geese			
breeding flocks			
meat production flocks			
unspecified			
Turkeys			

breeding flocks			
meat production flocks			
unspecified			

(1) : unspecified
(2) : 26 serotypes were isolated from 21 flocks positive for Salmonella - from 1 flock were isolated four serotypes (S. Enteritidis, S. Agona, S. Mbandaka, S. Lille) and from 2 flocks were isolated per two serotypes (S. Enteritidis and S. Kentucky, S. Enteritidis and S. Lille).

Footnote

SVFI - State Veterinary and Food Institutes;
12 isolates from baseline surveys in turkeys isolated from October to December 2006 (10 isolates S. Saintpaul with resistance patterns SuT, ASuT, ASuTWCep and 2 isolates S. Kiambu with resistance pattern ACSTNxG) will be reported together with the 2007 data in the next reporting period.

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Pigeons	SVFI	animal	13	0			
Quails	SVFI	animal	6	0			
Pheasants							
parent flocks	SVFI	animal	13	0			
meat production flocks	SVFI	animal	32	0			
Ostriches	SVFI	animal	7	0			
Parrots	SVFI	animal	8	0			
Other animals	SVFI	animal	2	0			

Footnote

SVFI - State Veterinary and Food Institutes

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Bardo	S. Choleraesuis	S. Derby	S. Halle	S. Infantis	S. Oranienburg	S. enterica subsp. arizonae	S. enterica subsp. salamae	S. Bovismorbificans	S. Give	S. Montevideo
Cattle (bovine animals)																		
calves (under 1 year)	SVFI	animal	391	18	8	9			1									
adult cattle over 2 years	SVFI	animal	144	2	1											1		
Sheep	SVFI	animal	130	2		2												
Goats	SVFI	animal	2	0														
Pigs																		
fattening pigs	SVFI	animal	818	29	1	6			17	4							1	
Solipeds, domestic	SVFI	animal	1	0														
Dogs	SVFI	animal	111	1		1												
Cats	SVFI	animal	20	2	2													
Zoo animals, all	SVFI	animal	79	12	1	1		1			1	1	1	1	1			4
Other animals	SVFI	animal	20	0														

Footnote

SVFI - State Veterinary and Food Institutes; 11 isolates from baseline surveys in fattening pigs isolated from October to December 2006 (S. Enteritidis 1x, S.

Typhimurium 3x, S. Bovismorbificans 1x, S. Choleraesuis 1x, S. Cerro 1x, S. Derby 1x, S. Havana 1x) will be reported together with the 2007 data in the next reporting period.

2.1.5. Salmonella in feedingstuffs

Table Salmonella in feed material of animal origin

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Senftenberg	S. Agona	S. Hadar
Feed material of land animal origin											
dairy products	SVFI	batch	25g	116	0						
meat and bone meal	SVFI	batch	25g	55	1				1		
bone meal	SVFI	batch	25g	2	0						
poultry offal meal	SVFI	batch	25g	36	2					1	1
feather meal	SVFI	batch	25g	10	0						
blood meal	SVFI	batch	25g	9	0						
animal fat	SVFI	batch	25g	31	1	1					
Feed material of marine animal origin											
fish meal	SVFI	batch	25g	111	0						
fish silage	SVFI	batch	25g	23	0						
Other feed material	SVFI	batch	25g	12	0						

Footnote

SVFI - State Veterinary and Food Institutes

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Typhimurium	S. Enteritidis	Salmonella spp., unspecified	S. Agona	S. Derby
Feed material of cereal grain origin										
barley derived	SVFI	batch	25g	79	0					
wheat derived	SVFI	batch	25g	103	2				1	1
maize	SVFI	batch	25g	86	0					
derived	SVFI	batch	25g	15	1				1	
other cereal grain derived	SVFI	batch	25g	21	0					
Feed material of oil seed or fruit origin										
rape seed derived	SVFI	batch	25g	38	0					
soya (bean) derived	SVFI	batch	25g	87	0					
cotton seed derived	SVFI	batch	25g	1	0					
sunflower seed derived	SVFI	batch	25g	34	0					
other oil seeds derived	SVFI	batch	25g	3	0					
Other feed material										
tubers, roots and similar products	SVFI	batch	25g	1	0					
forages and roughages	SVFI	batch	25g	9	0					
other plants	SVFI	batch	25g	2	0					
straws	SVFI	batch	25g	11	1		1			
beet	SVFI	batch	25g	1	0					
Silage	SVFI	batch	25g	4	0					

Footnote

SVFI - State Veterinary and Food Institutes

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Typhimurium	S. Enteritidis	Salmonella spp., unspecified	S. Worthington	S. Kentucky	S. Montevideo
Compound feedingstuffs for cattle											
process control	SVFI	batch	25g	36	0						
final product	SVFI	batch	25g	37	0						
Compound feedingstuffs for pigs											
final product	SVFI	batch	25g	384	1				1		
Compound feedingstuffs for poultry (non specified)											
final product	SVFI	batch	25g	19	0						
Compound feedingstuffs for poultry -breeders											
final product	SVFI	batch	25g	251	0						
Compound feedingstuffs for poultry - laying hens											
final product	SVFI	batch	25g	1	1		1				
Compund feedingstuffs for poultry - broilers											
final product	SVFI	batch	25g	100	2					1	1
Pet food											
dog snacks (pig ears, chewing bones)	SVFI	batch	25g	325	0						
Other feed material	SVFI	batch	25g	18	0						

Footnote

SVFI - State Veterinary and Food Institutes

2.1.6. Salmonella serovars and phagetype distribution

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

Table Salmonella serovars in animals

Serovars		Zoo animals, all		Sheep		Cats		Dogs		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory (1)	N=	14	535	14	535	14	535	14	535		535	95	781	7453	31	419	
Number of isolates serotyped	N=	0	13	2	0	0	1	0	1	0	20	11	29	154	1	41	0
Number of isolates per type																	
S. Agona														1			
S. Anatum																1	
S. Bardo			1														
S. Bareilly																1	
S. Blockley																1	
S. Bovismorbificans											1	1					
S. Choleraesuis											1	1	17				
S. Derby												3	4				
S. Enteritidis			2				1				9	1	1	117	1	7	
S. Give													1				
S. Hadar														1		1	
S. Halle			1														
S. Havana												1					
S. Indiana																4	
S. Infantis			1											2		2	
S. Kentucky														19			
S. Kiambu																2	

S. Lille													1			
S. Mbandaka													1			
S. Montevideo		4											5			
S. Oranienburg		1														
S. Orion													1			
S. Saintpaul															15	
S. Senftenberg															3	
S. Tennessee													2			
S. Typhimurium		1	2					1		9	3	6	2		4	
S. Virchow													2			
S. 18:-:-											1					
S. enterica subsp. arizonae		1														
S. enterica subsp. salamae		1														

(1) : Number of isolates in the laboratory in zoo animals, sheeps, cats and dogs is common fot other animal species.

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella serovars in food

Serovars		Other food		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=	1676		1371		5807		577					
Number of isolates serotyped	N=	14	0	0	0	5	0	22	0	0	0	0	0
Number of isolates per type													
S. Bareilly		1											
S. Bredeney						2							
S. Derby						1							
S. Enteritidis		8						20					
S. Infantis		1						1					
S. Kentucky								1					
S. Minnesota		2											
S. Schwarzengrund		1											
S. Typhimurium						1							
S. enterica subsp. enterica		1				1							

Footnote

(*) M : Monitoring, C : Clinical

2.1.7. Antimicrobial resistance in Salmonella isolates

Antimicrobial resistance is the ability of certain microorganisms to survive or grow in the presence of a given concentration of antimicrobial agent that usually would kill or inhibit the microorganism species in question. Antimicrobial resistant Salmonella strains may be transferred from animals or foodstuffs to humans.

A. Antimicrobial resistance in Salmonella in cattle

Sampling strategy used in monitoring

Procedures for the selection of isolates for antimicrobial testing

Because of representative selection of isolated strains, the antibiotic resistance is detected only in one isolated strain from animals of the same origin and same flock or herd and by making provision for the season and possible treatment.

Methods used for collecting data

The evidence and statistical evaluation, planned program WHONET.
The crossresistance are counted as one resistance type.

Laboratory methodology used for identification of the microbial isolates

MIC Testing and Disc Diffusion Testing according to NCCLS.
Antimicrobials included in monitoring

Control program/ mechanisms

Recent actions taken to control the zoonoses

The detection of resistance of isolated strains was performed by NRL for salmonellas.

Notification system in place

The notification of results on antibiotic resistance to the antibiotics used in treatment towards the competent veterinarian is made immediately after isolation, additionally, by making provision for representative selection, the investigation of antibiotic resistance to broad-spectrum antibiotics is performed on account of resistance monitoring for indicator microorganisms Escherichia coli.

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

In calves, the occurrence of multiresistant isolated strains Salmonella Typhimurium (antimicrobial pattern ACSSuT + Nalidixic acid) has increased. From other serovars, polyresistant and multiresistant strains of Salmonella Choleraesuis, Derby and Heidelberg were isolated.

B. Antimicrobial resistance in Salmonella in pigs

Sampling strategy used in monitoring

Procedures for the selection of isolates for antimicrobial testing

Because of representative selection of isolated strains, the antibiotic resistance is detected only in one isolated strain from animals of the same origin and same flock or herd and by making provision for the season and possible treatment.

Methods used for collecting data

The evidence and statistical evaluation, planned program WHONET.
The crossresistance are counted as one resistance type.

Laboratory methodology used for identification of the microbial isolates

MIC Testing and Disc Diffusion Testing according to NCCLS.
Antimicrobials included in monitoring

Control program/ mechanisms

Recent actions taken to control the zoonoses

The detection of resistance of isolated strains was performed by NRL for salmonellas.

Notification system in place

The notification of results on antibiotic resistance to the antibiotics used in treatment towards the competent veterinarian is made immediately after isolation, additionally, by making provision for representative selection, the investigation of antibiotic resistance to broad-spectrum antibiotics is performed on account of resistance monitoring for indicator microorganisms Escherichia coli.

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

In calves, the occurrence of multiresistant isolated strains Salmonella Typhimurium (antimicrobial pattern ACSSuT + Nalidixic acid) has increased. In turkeys, the problems are Salmonella Saintpaul, increase of polyresistant and multiresistant isolated strains (antimicrobial pattern SSuT or ASSuT + Trimetoprim + Cephalotine). From other serovars, polyresistant and multiresistant strains of Salmonella Choleraesuis, Derby and Heidelberg were isolated.

C. Antimicrobial resistance in Salmonella in poultry

Sampling strategy used in monitoring

Procedures for the selection of isolates for antimicrobial testing

Because of representative selection of isolated strains, the antibiotic resistance is detected only in one isolated strain from animals of the same origin and same flock or herd and by making provision for the season and possible treatment.

Methods used for collecting data

The evidence and statistical evaluation, planned program WHONET.
The crossresistance are counted as one resistance type.

Laboratory methodology used for identification of the microbial isolates

MIC Testing and Disc Diffusion Testing according to NCCLS.

Control program/ mechanisms

Recent actions taken to control the zoonoses

The detection of resistance of isolated strains was performed by NRL for salmonellas.

Notification system in place

The notification of results on antibiotic resistance to the antibiotics used in treatment towards the competent veterinarian is made immediately after isolation, additionally, by making provision for representative selection, the investigation of antibiotic resistance to broad-spectrum antibiotics is performed on account of resistance monitoring for indicator microorganisms Escherichia coli.

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

In calves, the occurrence of multiresistant isolated strains Salmonella Typhimurium (antimicrobial pattern ACSSuT + Nalidixic acid) has increased. In turkeys, the problems are Salmonella Saintpaul, increase of polyresistant and multiresistant isolated strains (antimicrobial pattern SSuT or ASSuT + Trimetoprim + Cephalotine). From other serovars, polyresistant and multiresistant strains of Salmonella Choleraesuis, Derby and Heidelberg were isolated.

D. Antimicrobial resistance in Salmonella in foodstuff derived from cattle

Sampling strategy used in monitoring

Methods of sampling (description of sampling techniques)

The antibiotic resistance was only detected in one isolated strain of the same foodstuff, same origin and same production batch.
The evidence and statistical evaluation, planned program WHONET.
The crossresistance are counted as one resistance type.
Laboratory methodology used for detection of resistance:
MIC Testing and Disc Diffusion Testing according to NCCLS
Antimicrobials included in monitoring
Recent actions taken to control the antimicrobial resistance
The detection of resistance of isolated strains was performed by NRL for salmonellas.

Notification system in place

The resistance of salmonella isolated strains from foodstuffs is for the time being not detected immediately after the isolation, in contrast to isolated strains from animals (immediate testing because of possible treatment).

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

The situation in occurrence of resistant salmonella strains, isolated from foodstuffs and feedingstuffs is rather favourable, in future, the problem could originate in transmission of resistant strains from animals. The only multiresistant strain was Salmonella Virchow (antimicrobial pattern ACSSuT + Nalidixic acid + Trimetoprim), isolated from frozen turkey meat (ready-to-cook), imported from

abroad.

E. Antimicrobial resistance in Salmonella in foodstuff derived from pigs

Sampling strategy used in monitoring

Methods of sampling (description of sampling techniques)

The antibiotic resistance was only detected in one isolated strain of the same foodstuff, same origin and same production batch.
The evidence and statistical evaluation, planned program WHONET.
The crossresistance are counted as one resistance type.
Laboratory methodology used for detection of resistance:
MIC Testing and Disc Diffusion Testing according to NCCLS
Antimicrobials included in monitoring
Recent actions taken to control the antimicrobial resistance
The detection of resistance of isolated strains was performed by NRL for salmonellas.

Notification system in place

The resistance of salmonella isolated strains from foodstuffs is for the time being not detected immediately after the isolation, in contrast to isolated strains from animals (immediate testing because of possible treatment).

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

The situation in occurrence of resistant salmonella strains, isolated from foodstuffs and feedingstuffs is rather favourable, in future, the problem could originate in transmission of resistant strains from animals.

F. Antimicrobial resistance in Salmonella in foodstuff derived from poultry

Sampling strategy used in monitoring

Methods of sampling (description of sampling techniques)

The antibiotic resistance was only detected in one isolated strain of the same foodstuff, same origin and same production batch.
The evidence and statistical evaluation, planned program WHONET.
The crossresistance are counted as one resistance type.
Laboratory methodology used for detection of resistance:
MIC Testing and Disc Diffusion Testing according to NCCLS
Antimicrobials included in monitoring
Recent actions taken to control the antimicrobial resistance
The detection of resistance of isolated strains was performed by NRL for salmonellas.

Notification system in place

The resistance of salmonella isolated strains from foodstuffs is for the time being not detected immediately after the isolation, in contrast to isolated strains from animals (immediate testing because

of possible treatment).

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

The situation in occurrence of resistant salmonella strains, isolated from foodstuffs and feedingstuffs is rather favourable, in future, the problem could originate in transmission of resistant strains from animals. The only multiresistant strain was Salmonella Virchow (antimicrobial pattern ACSSuT + Nalidixic acid + Trimetoprim), isolated from frozen turkey meat (ready-to-cook), imported from abroad.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																						
	S. Choleraesuis																					
	Pigs - at farm - animal sample - Clinical investigations																					
Isolates out of a monitoring programme	no																					
Number of isolates available in the laboratory	10																					
Antimicrobials:	**N**	**n**	**<=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**
Tetracyclines																						
Tetracyclin	10	2					1	2	3	2						2						
Amphenicols																						
Chloramphenicol	10	0					3	2	5													
Florfenicol	0	0																				
Cephalosporins																						
Cephalothin	10	0				1	1	1	6	0	1											
3rd generation cephalosporins	0	0																				
Cefotaxim	10	0				10																
Ceftazidim	10	0				10																
Fluoroquinolones																						
Ciprofloxacin	10	0		10																		
Enrofloxacin	0	0																				
Quinolones																						
Nalidixic acid	0	0																				
Oxolinic acid	10	0					1	5	3	1												
Sulfonamides																						
Sulfonamide	0	0																				
Trimethoprim	0	0																				
Aminoglycosides																						
Streptomycin	10	2								2	4	2		2								
Gentamicin	10	0				8	2															
Neomycin	0	0																				
Kanamycin	0	0																				
Penicillins																						

Ampicillin	10	1							6	3	1											
Ampicillin / Sulbactum	10	1							7	2	1											
Polymyxins																						
Colistin	0	0																				
Trimethoprim + sulfonamides	0	0																				

Footnote

Results of susceptibility testing to further antimicrobials are given in paralell table – Diffusion method.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to

S. Choleraesuis

Pigs - at farm - animal sample - Clinical investigations

Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	10

Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																
Tetracyclin	0																															
Amphenicols																																
Chloramphenicol	0																															
Florfenicol	10	0																	1	0	2	3	3	1								
Cephalosporins																																
Cephalothin	0																															
3rd generation cephalosporins	0																															
Cefotaxim	0																															
Ceftazidim	0																															
Fluoroquinolones																																
Ciprofloxacin	0																															
Enrofloxacin	0																															
Quinolones																																
Nalidixic acid	10	0												1	0	0	1	4	3	0	1											
Oxolinic acid	0																															
Sulfonamides																																
Sulfonamide	10	3	3																1	2	2	2										
Trimethoprim	10	0																		1	1	3	2	3								
Aminoglycosides																																
Streptomycin	0																															
Gentamicin	0																															
Neomycin	0																															
Kanamycin	10	0															1	4	3	1	1											
Penicillins																																

Ampicillin	0																															
Ampicillin / Sulbactum	0																															
Polymyxins																																
Colistin	10	0									5	4	1																			
Trimethoprim + sulfonamides	0																															

Footnote

Results of susceptibility testing to further antimicrobials are given in paralell table – Dilution method.

Table Antimicrobial susceptibility testing of S. Choleraesuis - qualitative data

n = Number of resistant isolates	S. Choleraesuis			
	Cattle (bovine animals)		**Pigs**	
Isolates out of a monitoring programme	no		no	
Number of isolates available in the laboratory	1		10	
Antimicrobials:	**N**	**n**	**N**	**n**
Tetracyclines				
Tetracyclin	1	0	10	2
Amphenicols				
Chloramphenicol	1	0	10	0
Florfenicol	1	0	10	0
Cephalosporins				
Cephalothin	1	0	10	0
Cefotaxim	1	0	10	0
Ceftazidim	1	0	10	0
Fluoroquinolones				
Ciprofloxacin	1	0	10	0
Quinolones				
Nalidixic acid	1	0	10	0
Oxolinic acid	1	0	10	0
Sulfonamides				
Sulfonamide	1	0	10	3
Trimethoprim	1	0	10	0
Aminoglycosides				
Streptomycin	1	0	10	2
Gentamicin	1	0	10	0
Kanamycin	1	0	10	0
Penicillins				
Ampicillin	1	0	10	0
Ampicillin / Sulbactum	1	0	10	0
Polymyxins				
Colistin	1	0	10	0
Trimethoprim + sulfonamides	1	0	10	0
Fully sensitive	1	1	10	7
Resistant to 1 antimicrobial	1	0	10	1
Resistant to 2 antimicrobials	1	0	10	0
Resistant to 3 antimicrobials	1	0	10	2

Footnote

SSuT resistance 2x, Su resistance 1x.

Table Antimicrobial susceptibility testing of S. Derby in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to

S. Derby

Pigs - at farm - animal sample - Clinical investigations

Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	2

Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																
Tetracyclin	0																															
Amphenicols																																
Chloramphenicol	0																															
Florfenicol	2	0																			1		1									
Cephalosporins																																
Cephalothin	0																															
3rd generation cephalosporins	0																															
Cefotaxim	0																															
Ceftazidim	0																															
Fluoroquinolones																																
Ciprofloxacin	0																															
Enrofloxacin	0																															
Quinolones																																
Nalidixic acid	2	0																	1	1												
Oxolinic acid	0																															
Sulfonamides																																
Sulfonamide	2	0																	1	1												
Trimethoprim	2	0																			1		1									
Aminoglycosides																																
Streptomycin	0																															
Gentamicin	0																															
Neomycin	0																															
Kanamycin	2	0																	1	1												
Penicillins																																

Ampicillin	0																															
Ampicillin / Sulbactum	0																															
Polymyxins																																
Colistin	2	0								1	1																					
Trimethoprim + sulfonamides	0																															

Footnote

Results of susceptibility testing to futher antimicrobials are given in paralell table - Dilution method.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to

S. Derby

Pigs - at farm - animal sample - Clinical investigations

Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	2

Antimicrobials:	**N**	**n**	**<=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**
Tetracyclines																						
Tetracyclin	2	1							1					1								
Amphenicols																						
Chloramphenicol	2	0						1	1													
Florfenicol	0	0																				
Cephalosporins																						
Cephalothin	2	0							2													
3rd generation cephalosporins	0	0																				
Cefotaxim	2	0				2																
Ceftazidim	2	0				2																
Fluoroquinolones																						
Ciprofloxacin	2	0		2																		
Enrofloxacin	0	0																				
Quinolones																						
Nalidixic acid	0	0																				
Oxolinic acid	2	0					2															
Sulfonamides																						
Sulfonamide	0	0																				
Trimethoprim	0	0																				
Aminoglycosides																						
Streptomycin	2	0								1	1											
Gentamicin	2	0					2															
Neomycin	0	0																				
Kanamycin	0	0																				
Penicillins																						

Ampicillin	2	0						1	1													
Ampicillin / Sulbactum	2	0						2														
Polymyxins																						
Colistin	0	0																				
Trimethoprim + sulfonamides	2	0					2															

Footnote

Results of susceptibility testing to futher antimicrobials are given in paralell table - Diffusion method.

Table Antimicrobial susceptibility testing of S. Derby - qualitative data

n = Number of resistant isolates	S. Derby	
	Pigs	
Isolates out of a monitoring programme		no
Number of isolates available in the laboratory		2
Antimicrobials:	**N**	**n**
Tetracyclines		
Tetracyclin	2	1
Amphenicols		
Chloramphenicol	2	0
Florfenicol	2	0
Cephalosporins		
Cephalothin	2	0
Cefotaxim	2	0
Ceftazidim	2	0
Fluoroquinolones		
Ciprofloxacin	2	0
Quinolones		
Nalidixic acid	2	0
Oxolinic acid	2	0
Sulfonamides		
Sulfonamide	2	0
Trimethoprim	2	0
Aminoglycosides		
Streptomycin	2	0
Gentamicin	2	0
Kanamycin	2	0
Penicillins		
Ampicillin	2	0
Ampicillin / Sulbactum	2	0
Polymyxins		
Colistin	2	0
Trimethoprim + sulfonamides	2	0
Fully sensitive	2	1
Resistant to 1 antimicrobial	2	1

Table Antimicrobial susceptibility testing of S.Enteritidis in animals

n = Number of resistant isolates

S. Enteritidis

	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study		Geese	
Isolates out of a monitoring programme		no		no		yes		yes		yes		yes
Number of isolates available in the laboratory		3		1		58		2		15		1
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines												
Tetracyclin	3	0	1	0	58	0	2	0	15	0	1	0
Amphenicols												
Chloramphenicol	3	0	1	0	58	0	2	0	15	0	1	0
Florfenicol	3	0	1	0	58	0	2	0	15	0	1	0
Cephalosporins												
Cephalothin	3	0	1	0	58	0	2	0	15	0	1	0
Cefotaxim	3	0	1	0	58	0	2	0	15	0	1	0
Ceftazidim	3	0	1	0	58	0	2	0	15	0	1	0
Fluoroquinolones												
Ciprofloxacin	3	0	1	0	58	2	2	0	15	0	1	0
Quinolones												
Nalidixic acid	3	0	1	0	58	2	2	0	15	0	1	0
Oxolinic acid	3	0	1	0	58	2	2	0	15	0	1	0
Sulfonamides												
Sulfonamide	3	0	1	0	58	0	2	0	15	0	1	0
Trimethoprim	3	0	1	0	58	0	2	0	15	0	1	0
Aminoglycosides												
Streptomycin	3	0	1	0	58	0	2	0	15	0	1	0
Gentamicin	3	0	1	0	58	0	2	0	15	0	1	0
Kanamycin	3	0	1	0	58	0	2	0	15	0	1	0
Penicillins												
Ampicillin	3	0	1	0	58	0	2	1	15	0	1	0
Ampicillin / Sulbactum	3	0	1	0	58	0	2	1	15	0	1	0
Polymyxins												
Colistin	3	0	1	0	58	0	2	0	15	0	1	0
Trimethoprim + sulfonamides	3	0	1	0	58	0	2	0	15	0	1	0
Fully sensitive	3	3	1	1	58	56	2	1	15	15	1	1
Resistant to 1 antimicrobial	3	0	1	0	58	2	2	1	15	0	1	0
Resistant to 2 antimicrobials	3	0	1	0	58	0	2	0	15	0	1	0
Resistant to 3 antimicrobials	3	0	1	0	58	0	2	0	15	0	1	0
Resistant to 4 antimicrobials	3	0	1	0	58	0	2	0	15	0	1	0
Resistant to >4 antimicrobials	3	0	1	0	58	0	2	0	15	0	1	0

Footnote

Cross-resistance are counted as one resistance type, additionally tested antimicrobials are not included.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																						
	S. Enteritidis																					
	Gallus gallus (fowl) - at farm - Monitoring																					
Isolates out of a monitoring programme	yes																					
Number of isolates available in the laboratory	73																					
Antimicrobials:	**N**	**n**	**<=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**
Tetracyclines																						
Tetracyclin	73	0					3	9	61													
Amphenicols																						
Chloramphenicol	73	0					1	5	67													
Florfenicol	0	0																				
Cephalosporins																						
Cephalothin	73	0					5	3	61	4												
3rd generation cephalosporins	0	0																				
Cefotaxim	73	0				73																
Ceftazidim	73	0				71	2															
Fluoroquinolones																						
Ciprofloxacin	73	2		71		2																
Enrofloxacin	0	0																				
Quinolones																						
Nalidixic acid	0	0																				
Oxolinic acid	73	2					71					1	1									
Sulfonamides																						
Sulfonamide	0	0																				
Trimethoprim	0	0																				
Aminoglycosides																						
Streptomycin	73	0						53	19	1												
Gentamicin	73	0				57	14	1	1													
Neomycin	0	0																				
Kanamycin	0	0																				
Penicillins																						

Ampicillin	73	0					2	61	10													
Ampicillin / Sulbactum	73	0					2	63	8													
Polymyxins																						
Colistin	0	0																				
Trimethoprim + sulfonamides	73	0					68	5														

Footnote

Results of susceptibility testing to further antimicrobials are given in paralell table – Diffusion method.
Thereof 19 isolates from laying hens (Nx resistance 1x), 54 isolates from broilers (Nx resistance 1x).

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to

S. Enteritidis

Gallus gallus (fowl) - at farm - Monitoring

Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	73

Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																
Tetracyclin	0																															
Amphenicols																																
Chloramphenicol	0																															
Florfenicol	73	0																		1	6	35	25	6								
Cephalosporins																																
Cephalothin	0																															
3rd generation cephalosporins	0																															
Cefotaxim	0																															
Ceftazidim	0																															
Fluoroquinolones																																
Ciprofloxacin	0																															
Enrofloxacin	0																															
Quinolones																																
Nalidixic acid	73	2	2														4	20	33	14												
Oxolinic acid	0																															
Sulfonamides																																
Sulfonamide	73	0														1	14	15	21	13	6	2		1								
Trimethoprim	73	0																		1	12	25	20	8	6	1						
Aminoglycosides																																
Streptomycin	0																															
Gentamicin	0																															
Neomycin	0																															
Kanamycin	73	0											1		2	7	5	5	18	23	12											
Penicillins																																

Ampicillin	0																														
Ampicillin / Sulbactum	0																														
Polymyxins																															
Colistin	73	0								17	47	9																			
Trimethoprim + sulfonamides	0																														

Footnote

Results of susceptibility testing to further antimicrobials are given in paralell table – Dilution method.
Thereof 19 isolates from laying hens (Nx resistance 1x), 54 isolates from broilers (Nx resistance 1x).

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																																	
	S. Kentucky																																
	Gallus gallus (fowl) - at farm - Monitoring																																
Isolates out of a monitoring programme	yes																																
Number of isolates available in the laboratory	10																																
Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**	
Tetracyclines																																	
Tetracyclin	0																																
Amphenicols																																	
Chloramphenicol	0																																
Florfenicol	10	0																		2	1	4	3										
Cephalosporins																																	
Cephalothin	0																																
3rd generation cephalosporins	0																																
Cefotaxim	0																																
Ceftazidim	0																																
Fluoroquinolones																																	
Ciprofloxacin	0																																
Enrofloxacin	0																																
Quinolones																																	
Nalidixic acid	10	0															2	8															
Oxolinic acid	0																																
Sulfonamides																																	
Sulfonamide	10	0																1	0	4	3	2											
Trimethoprim	10	0																		1	5	0	2	2									
Aminoglycosides																																	
Streptomycin	0																																
Gentamicin	0																																
Neomycin	0																																
Kanamycin	10	0													4	0	0	5	1														
Penicillins																																	

Ampicillin	0																															
Ampicillin / Sulbactum	0																															
Polymyxins																																
Colistin	10	0								5	5																					
Trimethoprim + sulfonamides	0																															

Footnote

Results of susceptibility testing to further antimicrobials are given in paralell table – Dilution method.
Thereof all isolates from broilers.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to

S. Kentucky

Gallus gallus (fowl) - at farm - Monitoring

Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	10

Antimicrobials:	**N**	**n**	**<=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**
Tetracyclines																						
Tetracyclin	10	0							10													
Amphenicols																						
Chloramphenicol	10	0							10													
Florfenicol	0	0																				
Cephalosporins																						
Cephalothin	10	0					2	6	0	0	2											
3rd generation cephalosporins	0	0																				
Cefotaxim	10	0				10																
Ceftazidim	10	0				10																
Fluoroquinolones																						
Ciprofloxacin	10	0		10																		
Enrofloxacin	0	0																				
Quinolones																						
Nalidixic acid	0	0																				
Oxolinic acid	10	0					9	1														
Sulfonamides																						
Sulfonamide	0	0																				
Trimethoprim	0	0																				
Aminoglycosides																						
Streptomycin	10	0								2	8											
Gentamicin	10	0				3	7															
Neomycin	0	0																				
Kanamycin	0	0																				
Penicillins																						

Ampicillin	10	2						7	1						2							
Ampicillin / Sulbactum	10	2						8			2											
Polymyxins																						
Colistin	0	0																				
Trimethoprim + sulfonamides	10	0					10															

Footnote

Results of susceptibility testing to further antimicrobials are given in paralell table – Diffusion method.
Thereof all isolates from broilers.

Table Antimicrobial susceptibility testing of S. Kentucky - qualitative data

n = Number of resistant isolates	S. Kentucky			
	Gallus gallus (fowl)		**Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study**	
Isolates out of a monitoring programme	yes		yes	
Number of isolates available in the laboratory	6		4	
Antimicrobials:	**N**	**n**	**N**	**n**
Tetracyclines				
Tetracyclin	6	0	4	0
Amphenicols				
Chloramphenicol	6	0	4	0
Florfenicol	6	0	4	0
Cephalosporins				
Cephalothin	6	0	4	0
Cefotaxim	6	0	4	0
Ceftazidim	6	0	4	0
Fluoroquinolones				
Ciprofloxacin	6	0	4	0
Quinolones				
Nalidixic acid	6	0	4	0
Oxolinic acid	6	0	4	0
Sulfonamides				
Sulfonamide	6	0	4	0
Trimethoprim	6	0	4	0
Aminoglycosides				
Streptomycin	6	0	4	0
Gentamicin	6	0	4	0
Kanamycin	6	0	4	0
Penicillins				
Ampicillin	6	1	4	1
Ampicillin / Sulbactum	6	1	4	1
Polymyxins				
Colistin	6	0	4	0
Trimethoprim + sulfonamides	6	0	4	0
Fully sensitive	6	5	4	3
Resistant to 1 antimicrobial	6	1	4	1

Footnote

Cross-resistance are counted as one resistance type, additionally tested antimicrobials are not included.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to

S. Montevideo

Gallus gallus (fowl) - at farm - Monitoring

Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	4

Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																
Tetracyclin	0																															
Amphenicols																																
Chloramphenicol	0																															
Florfenicol	4	0																				3	1									
Cephalosporins																																
Cephalothin	0																															
3rd generation cephalosporins	0																															
Cefotaxim	0																															
Ceftazidim	0																															
Fluoroquinolones																																
Ciprofloxacin	0																															
Enrofloxacin	0																															
Quinolones																																
Nalidixic acid	4	0															2	0	1	1												
Oxolinic acid	0																															
Sulfonamides																																
Sulfonamide	4	1	1																1	0	1	0	0	1								
Trimethoprim	4	0																			1	0	2	1								
Aminoglycosides																																
Streptomycin	0																															
Gentamicin	0																															
Neomycin	0																															
Kanamycin	4	0															1	2	0	1												
Penicillins																																

Ampicillin	0																														
Ampicillin / Sulbactum	0																														
Polymyxins																															
Colistin	4	0								3	1																				
Trimethoprim + sulfonamides	0																														

Footnote

Results of susceptibility testing to further antimicrobials are given in paralell table – Diffusion method.
Thereof all isolates from broilers.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to	S. Montevideo																					
	Gallus gallus (fowl) - at farm - Monitoring																					
Isolates out of a monitoring programme	yes																					
Number of isolates available in the laboratory	4																					
Antimicrobials:	**N**	**n**	**<=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**
Tetracyclines																						
Tetracyclin	4	1						1	2					1								
Amphenicols																						
Chloramphenicol	4	0						1	3													
Florfenicol	0	0																				
Cephalosporins																						
Cephalothin	4	0					2			2												
3rd generation cephalosporins	0	0																				
Cefotaxim	4	0				4																
Ceftazidim	4	0				4																
Fluoroquinolones																						
Ciprofloxacin	4	0		4																		
Enrofloxacin	0	0																				
Quinolones																						
Nalidixic acid	0	0																				
Oxolinic acid	4	0					4															
Sulfonamides																						
Sulfonamide	0	0																				
Trimethoprim	0	0																				
Aminoglycosides																						
Streptomycin	4	0								2	2											
Gentamicin	4	0				2	2															
Neomycin	0	0																				
Kanamycin	0	0																				
Penicillins																						

Ampicillin	4	1					1	1	1						1							
Ampicillin / Sulbactum	4	1					1	1	1		1											
Polymyxins																						
Colistin	0	0																				
Trimethoprim + sulfonamides	4	0					1	0	3													

Footnote

Results of susceptibility testing to further antimicrobials are given in paralell table – Diffusion method.
Thereof all isolates from broilers.

Table Antimicrobial susceptibility testing of S. Montevideo - qualitative data

n = Number of resistant isolates		
	S. Montevideo	
	Gallus gallus (fowl)	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		4
Antimicrobials:	**N**	**n**
Tetracyclines		
Tetracyclin	4	1
Amphenicols		
Chloramphenicol	4	0
Florfenicol	4	0
Cephalosporins		
Cephalothin	4	0
Cefotaxim	4	0
Ceftazidim	4	0
Fluoroquinolones		
Ciprofloxacin	4	0
Quinolones		
Nalidixic acid	4	0
Oxolinic acid	4	0
Sulfonamides		
Sulfonamide	4	1
Trimethoprim	4	0
Aminoglycosides		
Streptomycin	4	0
Gentamicin	4	0
Kanamycin	4	0
Penicillins		
Ampicillin	4	1
Ampicillin / Sulbactum	4	1
Polymyxins		
Colistin	4	0
Trimethoprim + sulfonamides	4	0
Fully sensitive	4	2
Resistant to 1 antimicrobial	4	1
Resistant to 2 antimicrobials	4	1

Footnote

ASu resistance 1x, T resistence 1x.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																						
	S. Saintpaul																					
	Turkeys - at farm - Monitoring																					
Isolates out of a monitoring programme	yes																					
Number of isolates available in the laboratory	5																					
Antimicrobials:	**N**	**n**	**<=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**
Tetracyclines																						
Tetracyclin	5	5												5								
Amphenicols																						
Chloramphenicol	5	0							5													
Florfenicol	0	0																				
Cephalosporins																						
Cephalothin	5	1							4				1									
3rd generation cephalosporins	0	0																				
Cefotaxim	5	0				5																
Ceftazidim	5	0				5																
Fluoroquinolones																						
Ciprofloxacin	5	0		5																		
Enrofloxacin	0	0																				
Quinolones																						
Nalidixic acid	0	0																				
Oxolinic acid	5	0					5															
Sulfonamides																						
Sulfonamide	0	0																				
Trimethoprim	0	0																				
Aminoglycosides																						
Streptomycin	5	0										2	3									
Gentamicin	5	0				3	2															
Neomycin	0	0																				
Kanamycin	0	0																				
Penicillins																						

Ampicillin	5	1						3	1					1							
Ampicillin / Sulbactum	5	1						3	1				1								
Polymyxins																					
Colistin	0	0																			
Trimethoprim + sulfonamides	5	1						1	3					1							

Footnote

Results of susceptibility testing to further antimicrobials are given in paralell table – Diffusion method.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to

S. Saintpaul

Turkeys - at farm - Monitoring

Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	5

Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																
Tetracyclin	0																															
Amphenicols																																
Chloramphenicol	0																															
Florfenicol	5	0																			4	1										
Cephalosporins																																
Cephalothin	0																															
3rd generation cephalosporins	0																															
Cefotaxim	0																															
Ceftazidim	0																															
Fluoroquinolones																																
Ciprofloxacin	0																															
Enrofloxacin	0																															
Quinolones																																
Nalidixic acid	5	0																2	3													
Oxolinic acid	0																															
Sulfonamides																																
Sulfonamide	5	5	5																													
Trimethoprim	5	1	1																1	2	1											
Aminoglycosides																																
Streptomycin	0																															
Gentamicin	0																															
Neomycin	0																															
Kanamycin	5	0																2	3													
Penicillins																																

Ampicillin	0																															
Ampicillin / Sulbactum	0																															
Polymyxins																																
Colistin	5	0								4	1																					
Trimethoprim + sulfonamides	0																															

Footnote

Results of susceptibility testing to further antimicrobials are given in paralell table – Dilution method.

Table Antimicrobial susceptibility testing of S. Saintpaul - qualitative data

n = Number of resistant isolates	S. Saintpaul	
	Turkeys	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		5
Antimicrobials:	**N**	**n**
Tetracyclines		
Tetracyclin	5	5
Amphenicols		
Chloramphenicol	5	0
Florfenicol	5	0
Cephalosporins		
Cephalothin	5	1
Cefotaxim	5	0
Ceftazidim	5	0
Fluoroquinolones		
Ciprofloxacin	5	0
Quinolones		
Nalidixic acid	5	0
Oxolinic acid	5	0
Sulfonamides		
Sulfonamide	5	5
Trimethoprim	5	1
Aminoglycosides		
Streptomycin	5	0
Gentamicin	5	0
Kanamycin	5	0
Penicillins		
Ampicillin	5	1
Ampicillin / Sulbactum	5	1
Polymyxins		
Colistin	5	0
Trimethoprim + sulfonamides	5	1
Fully sensitive	5	0
Resistant to 1 antimicrobial	5	0
Resistant to 2 antimicrobials	5	4
Resistant to 3 antimicrobials	5	0
Resistant to 4 antimicrobials	5	1

Footnote

SuT resistance 4x, ASuTWCep resistance 1x. Cross-resistance are counted as one resistance type, additional tested antimicrobials are not included to multiresistance.
12 isolates from baseline surveys in turkeys isolated from October to December 2006 (10 isolates S. Saintpaul with resistance patterns SuT, ASuT, ASuTWCep and 2 isolates S. Kiambu with resistance pattern ACSTNxG) will be reported together with the 2007 data in the next reporting period.

Table Antimicrobial susceptibility testing of S.Typhimurium in animals

n = Number of resistant isolates

S. Typhimurium

	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Sheep		Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study		Ducks		Geese	
Isolates out of a monitoring programme	no		no		yes		yes		no		yes		yes		yes	
Number of isolates available in the laboratory	6		6		1		0		2		1		1		1	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines																
Tetracyclin	6	4	6	5	1	1			2	2	1	0	1	0	1	0
Amphenicols																
Chloramphenicol	6	4	6	0	1	1			2	2	1	0	1	0	1	0
Florfenicol	6	4	6	0	1	1			2	2	1	0	1	0	1	0
Cephalosporins																
Cephalothin	6	0	6	0	1	0			2	0	1	0	1	0	1	0
Cefotaxim	6	0	6	0	1	0			2	0	1	0	1	0	1	0
Ceftazidim	6	0	6	0	1	0			2	0	1	0	1	0	1	0
Fluoroquinolones																
Ciprofloxacin	6	3	6	0	1	1			2	0	1	0	1	0	1	0
Quinolones																
Nalidixic acid	6	3	6	0	1	1			2	0	1	0	1	0	1	0
Oxolinic acid	6	3	6	0	1	1			2	0	1	0	1	0	1	0
Sulfonamides																
Sulfonamide	6	4	6	3	1	1			2	2	1	0	1	0	1	0
Trimethoprim	6	0	6	1	1	0			2	0	1	0	1	0	1	0
Aminoglycosides																
Streptomycin	6	4	6	2	1	1			2	2	1	0	1	0	1	0
Gentamicin	6	0	6	0	1	0			2	0	1	0	1	0	1	0
Kanamycin	6	1	6	2	1	0			2	0	1	0	1	0	1	0

Penicillins																
Ampicillin	6	5	6	4	1	1			2	2	1	1	1	0	1	0
Ampicillin / Sulbactum	6	5	6	4	1	1			2	2	1	1	1	0	1	0
Polymyxins																
Colistin	6	0	6	0	1	0			2	0	1	0	1	0	1	0
Trimethoprim + sulfonamides	6	0	6	1	1	0			2	0	1	0	1	0	1	0
Fully sensitive	6	1	6	1	1	0			2	0	1	0	1	1	1	1
Resistant to 1 antimicrobial	6	0	6	0	1	0			2	0	1	1	1	0	1	0
Resistant to 2 antimicrobials	6	0	6	1	1	0			2	0	1	0	1	0	1	0
Resistant to 3 antimicrobials	6	1	6	2	1	0			2	0	1	0	1	0	1	0
Resistant to 4 antimicrobials	6	0	6	1	1	0			2	0	1	0	1	0	1	0
Resistant to >4 antimicrobials	6	4	6	1	1	1			2	2	1	0	1	0	1	0
Number of multiresistant S. Typhimurium DT104																
with penta resistance (1)	6	4	6	0	1	1			2	2	1	0	1	0	1	0
resistant to other antimicrobials	6	3	6	0	1	1			2	0	1	0	1	0	1	0

(1) : Phagetyping was not performed.

Footnote

Cross-resistance are counted as one resistance type, additional tested antimicrobials are not included to multiresistance.
Cattle: Fully sensitive 1x, ATK resistance 1x, ACSSuT resistance 1x, ACSSuTNx resistance 3x;
Pigs: Fully sensitive 1x, AT resistance 1x, ATK resistance 1x, SuTW resistance 1x, ASSuT resistance 1x, ASSuTKCep 1x;
Poultry Gallus gallus: ACSSuTNx resistance 1x;
Poultry Gallus gallus - broilers: A resistance 1x;
Sheep: ACSSuT resistance 2x;
Ducks: Fully sensitive 1x;
Geese: Fully sensitive 1x.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to

S. Typhimurium

Cattle (bovine animals) - at farm - animal sample - Clinical investigations

Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	6

Antimicrobials:	**N**	**n**	**<=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**
Tetracyclines																						
Tetracyclin	6	4							2					4								
Amphenicols																						
Chloramphenicol	6	4							2					4								
Florfenicol	0	0																				
Cephalosporins																						
Cephalothin	6	0							4	1	1											
3rd generation cephalosporins	0	0																				
Cefotaxim	6	0				6																
Ceftazidim	6	0				6																
Fluoroquinolones																						
Ciprofloxacin	6	3		3	2	1																
Enrofloxacin	0	0																				
Quinolones																						
Nalidixic acid	0	0																				
Oxolinic acid	6	3					3					3										
Sulfonamides																						
Sulfonamide	0	0																				
Trimethoprim	0	0																				
Aminoglycosides																						
Streptomycin	6	4								2				4								
Gentamicin	6	0				3	3															
Neomycin	0	0																				
Kanamycin	0	0																				
Penicillins																						

Ampicillin	6	5						1							5							
Ampicillin / Sulbactum	6	5						1				3	2									
Polymyxins																						
Colistin	0	0																				
Trimethoprim + sulfonamides	6	0					2		3	1												

Footnote

Results of susceptibility testing to futher antimicrobials are given in paralell table - Diffusion method.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																																
	S. Typhimurium																															
	Pigs - at farm - animal sample - Clinical investigations																															
Isolates out of a monitoring programme	no																															
Number of isolates available in the laboratory	6																															
Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																
Tetracyclin	0																															
Amphenicols																																
Chloramphenicol	0																															
Florfenicol	6	0																			1	4	1									
Cephalosporins																																
Cephalothin	0																															
3rd generation cephalosporins	0																															
Cefotaxim	0																															
Ceftazidim	0																															
Fluoroquinolones																																
Ciprofloxacin	0																															
Enrofloxacin	0																															
Quinolones																																
Nalidixic acid	6	0															1	3	2													
Oxolinic acid	0																															
Sulfonamides																																
Sulfonamide	6	3	3																		1	2										
Trimethoprim	6	1	1																	2	1	1	1									
Aminoglycosides																																
Streptomycin	0																															
Gentamicin	0																															
Neomycin	0																															
Kanamycin	6	2	2															2	2													
Penicillins																																

Ampicillin	0																														
Ampicillin / Sulbactum	0																														
Polymyxins																															
Colistin	6	0								3	3																				
Trimethoprim + sulfonamides	0																														

Footnote

Results of susceptibility testing to futher antimicrobials are given in paralell table - Dilution method.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to

S. Typhimurium

Pigs - at farm - animal sample - Clinical investigations

Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	6

Antimicrobials:	**N**	**n**	**<=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**
Tetracyclines																						
Tetracyclin	6	5							1					5								
Amphenicols																						
Chloramphenicol	6	0							6													
Florfenicol	0	0																				
Cephalosporins																						
Cephalothin	6	0							2	3		1										
3rd generation cephalosporins	0	0																				
Cefotaxim	6	0				6																
Ceftazidim	6	0				6																
Fluoroquinolones																						
Ciprofloxacin	6	0		6																		
Enrofloxacin	0	0																				
Quinolones																						
Nalidixic acid	0	0																				
Oxolinic acid	6	0					5	1														
Sulfonamides																						
Sulfonamide	0	0																				
Trimethoprim	0	0																				
Aminoglycosides																						
Streptomycin	6	2								3		1		2								
Gentamicin	6	0				2	4															
Neomycin	0	0																				
Kanamycin	0	0																				
Penicillins																						

Ampicillin	6	4						1	1						4						
Ampicillin / Sulbactum	6	4						1	1		3			1							
Polymyxins																					
Colistin	0	0																			
Trimethoprim + sulfonamides	6	1					3		1	1					1						

Footnote

Results of susceptibility testing to futher antimicrobials are given in paralell table - Diffusion method.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to

S. Typhimurium

Gallus gallus (fowl) - at farm - Monitoring

Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	2

Antimicrobials:	**N**	**n**	**<=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**
Tetracyclines																						
Tetracyclin	2	1							1				1									
Amphenicols																						
Chloramphenicol	2	1							1					1								
Florfenicol	0	0																				
Cephalosporins																						
Cephalothin	2	0							1	1												
3rd generation cephalosporins	0	0																				
Cefotaxim	2	0				2																
Ceftazidim	2	0				2																
Fluoroquinolones																						
Ciprofloxacin	2	1		1		1																
Enrofloxacin	0	0																				
Quinolones																						
Nalidixic acid	0	0																				
Oxolinic acid	2	1					1					1										
Sulfonamides																						
Sulfonamide	0	0																				
Trimethoprim	0	0																				
Aminoglycosides																						
Streptomycin	2	1									1			1								
Gentamicin	2	0				1	1															
Neomycin	0	0																				
Kanamycin	0	0																				
Penicillins																						

Ampicillin	2	2												2								
Ampicillin / Sulbactum	2	2									1	1										
Polymyxins																						
Colistin	0	0																				
Trimethoprim + sulfonamides	2	0					1		1													

Footnote

Results of susceptibility testing to futher antimicrobials are given in paralell table - Diffusion method.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to

S. Typhimurium

Gallus gallus (fowl) - at farm - Monitoring

Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	2

Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																
Tetracyclin	0																															
Amphenicols																																
Chloramphenicol	0																															
Florfenicol	2	1										1									1											
Cephalosporins																																
Cephalothin	0																															
3rd generation cephalosporins	0																															
Cefotaxim	0																															
Ceftazidim	0																															
Fluoroquinolones																																
Ciprofloxacin	0																															
Enrofloxacin	0																															
Quinolones																																
Nalidixic acid	2	1	1															1														
Oxolinic acid	0																															
Sulfonamides																																
Sulfonamide	2	1	1																1													
Trimethoprim	2	0																				1			1							
Aminoglycosides																																
Streptomycin	0																															
Gentamicin	0																															
Neomycin	0																															
Kanamycin	2	0													1			1														
Penicillins																																

Ampicillin	0																															
Ampicillin / Sulbactum	0																															
Polymyxins																																
Colistin	2	0								1	1																					
Trimethoprim + sulfonamides	0																															

Footnote

Results of susceptibility testing to futher antimicrobials are given in paralell table - Dilution method.

Table Antimicrobial susceptibility testing of S. Typhimurium in Cattle (bovine animals) - quantitative data [Dilution method]

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																						
	S. Typhimurium																					
	Cattle (bovine animals)																					
Isolates out of a monitoring programme																						
Number of isolates available in the laboratory																						
Antimicrobials:	**N**	**n**	**<=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**
Tetracyclines																						
Tetracyclin		0																				
Amphenicols																						
Chloramphenicol		0																				
Cephalosporins																						
Cephalothin		0																				
Cefotaxim		0																				
Ceftazidim		0																				
Fluoroquinolones																						
Ciprofloxacin		0																				
Quinolones																						
Oxolinic acid		0																				
Aminoglycosides																						
Streptomycin		0																				
Gentamicin		0																				
Penicillins																						
Ampicillin		0																				
Ampicillin / Sulbactum		0																				
Trimethoprim + sulfonamides		0																				

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																																
	S. Typhimurium																															
	Cattle (bovine animals) - at farm - animal sample - Clinical investigations																															
Isolates out of a monitoring programme	no																															
Number of isolates available in the laboratory	6																															
Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																
Tetracyclin	0																															
Amphenicols																																
Chloramphenicol	0																															
Florfenicol	6	4		1					1			1	1									2										
Cephalosporins																																
Cephalothin	0																															
3rd generation cephalosporins	0																															
Cefotaxim	0																															
Ceftazidim	0																															
Fluoroquinolones																																
Ciprofloxacin	0																															
Enrofloxacin	0																															
Quinolones																																
Nalidixic acid	6	3	3															1	1		1											
Oxolinic acid	0																															
Sulfonamides																																
Sulfonamide	6	4	4																	1	1											
Trimethoprim	6	0																		2		3	1									
Aminoglycosides																																
Streptomycin	0																															
Gentamicin	0																															
Neomycin	0																															
Kanamycin	6	1	1															4	1													
Penicillins																																

Ampicillin	0																															
Ampicillin / Sulbactum	0																															
Polymyxins																																
Colistin	6	0								5	1																					
Trimethoprim + sulfonamides	0																															

Footnote

Results of susceptibility testing to futher antimicrobials are given in paralell table - Dilution method.

Table Antimicrobial susceptibility testing of Salmonella in animals

n = Number of resistant isolates

Salmonella spp.

	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study		Ducks		Geese		Sheep	
Isolates out of a monitoring programme	no		no		yes		yes		yes		yes		yes		no	
Number of isolates available in the laboratory	10		21		74		9		26		8		2		2	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines																
Tetracyclin	10	4	21	9	74	2	9	6	26	0	8	4	2	0	2	2
Amphenicols																
Chloramphenicol	10	4	21	0	74	1	9	0	26	0	8	0	2	0	2	2
Florfenicol	10	4	21	0	74	1	9	0	26	0	8	0	2	0	2	2
Cephalosporins																
Cephalothin	10	0	21	0	74	0	9	1	26	0	8	0	2	0	2	0
Cefotaxim	10	0	21	0	74	0	9	0	26	0	8	0	2	0	2	0
Ceftazidim	10	0	21	0	74	0	9	0	26	0	8	0	2	0	2	0
Fluoroquinolones																
Ciprofloxacin	10	3	21	0	74	3	9	1	26	0	8	1	2	0	2	0
Quinolones																
Nalidixic acid	10	3	21	0	74	3	9	1	26	1	8	1	2	0	2	0
Oxolinic acid	10	3	21	0	74	3	9	1	26	0	8	1	2	0	2	0
Sulfonamides																
Sulfonamide	10	4	21	7	74	2	9	6	26	0	8	1	2	0	2	2
Trimethoprim	10	1	21	1	74	0	9	1	26	0	8	0	2	0	2	0
Aminoglycosides																
Streptomycin	10	4	21	4	74	1	9	0	26	0	8	2	2	0	2	2
Gentamicin	10	0	21	0	74	0	9	0	26	0	8	0	2	0	2	0
Kanamycin	10	1	21	3	74	0	9	0	26	0	8	1	2	0	2	0

Penicillins																
Ampicillin	10	5	21	4	74	3	9	2	26	2	8	0	2	0	2	2
Ampicillin / Sulbactum	10	5	21	4	74	3	9	2	26	2	8	0	2	0	2	2
Polymyxins																
Colistin	10	0	21	0	74	0	9	0	26	0	8	0	2	0	2	0
Trimethoprim + sulfonamides	10	0	21	1	74	0	9	1	26	0	8	0	2	0	2	0
Fully sensitive	10	5	21	11	74	69	9	2	26	23	8	4	2	2	2	0
Resistant to 1 antimicrobial	10	0	21	2	74	3	9	1	26	3	8	1	2	0	2	0
Resistant to 2 antimicrobials	10	0	21	1	74	1	9	4	26	0	8	2	2	0	2	0
Resistant to 3 antimicrobials	10	1	21	5	74	0	9	1	26	0	8	0	2	0	2	0
Resistant to 4 antimicrobials	10	0	21	2	74	0	9	1	26	0	8	1	2	0	2	0
Resistant to >4 antimicrobials	10	4	21	0	74	1	9	0	26	0	8	0	2	0	2	2

Footnote

Cross-resistance are counted as one resistance type, additionally tested antimicrobials are not included to multiresistance.
Results of antimicrobial susceptibility testing of 12 isolates from baseline surveys in turkeys and 11 isolates from baseline surveys in fattening pigs isolated from October to December 2006 will be reported together with the 2007 data in the next reporting period.

Table Antimicrobial susceptibility testing of Salmonella spp. in food

n = Number of resistant isolates

Salmonella spp.

	Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Meat from other poultry species		Egg products		Eggs	
Isolates out of a monitoring programme	yes		yes		yes		yes		yes		yes	
Number of isolates available in the laboratory	1		2		5		0		2		8	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines												
Tetracyclin	1	0	2	1	5	0			2	0	8	0
Amphenicols												
Chloramphenicol	1	0	2	0	5	0			2	0	8	0
Florfenicol	1	0	2	0	5	0			2	0	8	0
Cephalosporins												
Cephalothin	1	0	2	0	5	0			2	0	8	0
Cefotaxim	1	0	2	0	5	0			2	0	8	0
Ceftazidim	1	0	2	0	5	0			2	0	8	0
Fluoroquinolones												
Ciprofloxacin	1	0	2	0	5	0			2	0	8	0
Quinolones												
Nalidixic acid	1	0	2	0	5	0			2	0	8	0
Oxolinic acid	1	0	2	0	5	0			2	0	8	0
Sulfonamides												
Sulfonamide	1	0	2	1	5	0			2	0	8	0
Trimethoprim	1	0	2	0	5	0			2	0	8	0
Aminoglycosides												
Streptomycin	1	0	2	1	5	0			2	0	8	0
Gentamicin	1	0	2	0	5	0			2	0	8	0
Kanamycin	1	0	2	0	5	0			2	0	8	0
Penicillins												
Ampicillin	1	0	2	1	5	0			2	0	8	0
Ampicillin / Sulbactum	1	0	2	1	5	0			2	0	8	0
Polymyxins												
Colistin	1	0	2	0	5	0			2	0	8	0
Trimethoprim + sulfonamides	1	0	2	0	5	0			2	0	8	0
Fully sensitive	1	1	2	1	5	5			2	2	8	8
Resistant to 1 antimicrobial	1	0	2	0	5	0			2	0	8	0
Resistant to 2 antimicrobials	1	0	2	0	5	0			2	0	8	0
Resistant to 3 antimicrobials	1	0	2	0	5	0			2	0	8	0
Resistant to 4 antimicrobials	1	0	2	1	5	0			2	0	8	0
Resistant to >4 antimicrobials	1	0	2	0	5	0			2	0	8	0

Footnote

Meat from bovine animals: S. Bareilly;

Meat from pigs: Salmonella 4,12;i,- (ASSuT resistance), S. Derby (salted guts);
Meat from broilers: S. Enteritidis 2x, S. Bredeney, S. Infantis, S. Kentucky;
Eggs: S. Enteritidis 7x, S. Virchow;
Egg products: S. Enteritidis (egg mayonnaise),S. Bareilly (dried eggs).

Table Antimicrobial susceptibility testing of Salmonella spp. - qualitative data

n = Number of resistant isolates

	Salmonella spp.											
	Feed material of land animal origin - bone meal - Monitoring - official sampling		**Feed material of land animal origin - poultry offal meal**		**Pet food**		**Compund feedingstuffs for poultry - broilers**		**Compound feedingstuffs for pigs**		**Feed material of cereal grain origin - maize - derived**	
Isolates out of a monitoring programme	yes		yes		yes		yes		yes		no	
Number of isolates available in the laboratory	2		1		2		3		1		1	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines												
Tetracyclin	2	0	1	0	2	0	3	0	1	0	1	0
Amphenicols												
Chloramphenicol	2	0	1	0	2	0	3	0	1	0	1	0
Florfenicol	2	0	1	0	2	0	3	0	1	0	1	0
Cephalosporins												
Cephalothin	2	0	1	0	2	0	3	0	1	0	1	0
Cefotaxim	2	0	1	0	2	0	3	0	1	0	1	0
Ceftazidim	2	0	1	0	2	0	3	0	1	0	1	0
Fluoroquinolones												
Ciprofloxacin	2	0	1	0	2	0	3	0	1	0	1	0
Quinolones												
Nalidixic acid	2	0	1	1	2	0	3	0	1	0	1	0
Oxolinic acid	2	0	1	1	2	0	3	0	1	0	1	0
Sulfonamides												
Sulfonamide	2	0	1	0	2	0	3	0	1	0	1	0
Trimethoprim	2	0	1	0	2	0	3	0	1	0	1	0
Aminoglycosides												
Streptomycin	2	0	1	0	2	0	3	0	1	0	1	0
Gentamicin	2	0	1	0	2	0	3	0	1	0	1	0
Kanamycin	2	0	1	0	2	0	3	0	1	0	1	0
Penicillins												
Ampicillin	2	0	1	0	2	0	3	0	1	0	1	0
Ampicillin / Sulbactum	2	0	1	0	2	0	3	0	1	0	1	0
Polymyxins												
Colistin	2	0	1	0	2	0	3	0	1	0	1	0
Trimethoprim + sulfonamides	2	0	1	0	2	0	3	0	1	0	1	0
Fully sensitive	2	2	1	0	2	2	3	3	1	1	1	1
Resistant to 1 antimicrobial	2	0	1	1	2	0	3	0	1	0	1	0

Footnote

Bone meal: S. Senftenberg, S. Isangi;
Poultry offals: S. Hadar;
Pet food: S. Enteritidis, S. Agona;
Feedingstuffs for broilers: S. Enteritidis, S. Kentucky, S. Montevideo;

Feedingstuffs for pigs: S. Wothington;
Maize derived: S. Agona,

Table Antimicrobial susceptibility testing of Other serotypes - qualitative data

n = Number of resistant isolates

	Other serotypes									
	Pigs		**Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study**		**Turkeys**		**Gallus gallus (fowl)**		**Ducks**	
Isolates out of a monitoring programme	no		yes		yes		yes		yes	
Number of isolates available in the laboratory	2		6		2		5		7	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines										
Tetracyclin	2	1	6	0	2	1	5	0	7	4
Amphenicols										
Chloramphenicol	2	0	6	0	2	0	5	0	7	0
Florfenicol	2	0	6	0	2	0	5	0	7	0
Cephalosporins										
Cephalothin	2	0	6	0	2	0	5	0	7	0
Cefotaxim	2	0	6	0	2	0	5	0	7	0
Ceftazidim	2	0	6	0	2	0	5	0	7	0
Fluoroquinolones										
Ciprofloxacin	2	0	6	0	2	1	5	0	7	1
Quinolones										
Nalidixic acid	2	0	6	1	2	1	5	0	7	1
Oxolinic acid	2	0	6	0	2	1	5	0	7	1
Sulfonamides										
Sulfonamide	2	1	6	0	2	1	5	0	7	1
Trimethoprim	2	0	6	0	2	0	5	0	7	0
Aminoglycosides										
Streptomycin	2	0	6	0	2	0	5	0	7	2
Kanamycin	2	1	6	0	2	0	5	0	7	1
Penicillins										
Ampicillin	2	0	6	0	2	0	5	0	7	0
Ampicillin / Sulbactum	2	0	6	0	2	0	5	0	7	0
Polymyxins										
Colistin	2	0	6	0	2	0	5	0	7	0
Trimethoprim + sulfonamides	2	0	6	0	2	0	5	0	7	0
Fully sensitive	2	1	6	5	2	1	5	5	7	3
Resistant to 1 antimicrobial	2	0	6	1	2	0	5	0	7	1
Resistant to 2 antimicrobials	2	0	6	0	2	0	5	0	7	2
Resistant to 3 antimicrobials	2	1	6	0	2	1	5	0	7	0
Resistant to 4 antimicrobials	2	0	6	0	2	0	5	0	7	1

Footnote

Pigs: Fully sensitive - S . Give 1x; SuTK resistance - S. Bredeney 1x;
Poultry Gallus gallus: Fully sensitive - S. Infantis 1x, S. Tennessee 2x, S. Virchow 2x;
Broilers: Fully sensitive - S. Agona 1x, S. Infantis 1x, S. Lille 1x, S. Mbandaka 1x, S. Orion 1x; Nx resistance - S. Hadar 1x;
Turkeys: Fully sensitive - S. Infantis 1x; SuTNx resistance - S. Bareilly 1x;
Ducks: Fully sensitive - S. Indiana 1x, S. Senftenberg 2x; T resistance - S. Anatum 1x; ST resistance - S. Hadar 1x; SuT resistance - S. Indiana 1x; STNxK resistance - S. Blockley 1x.

Table Breakpoints for antibiotic resistance testing in Animals

Test Method Used

- Disc diffusion
- Agar dilution
- Broth dilution
- E-test

Standards used for testing

- NCCLS
- EUCAST

Salmonella	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Amphenicols										
Chloramphenicol	EUCAST	16		16	0.25	32				
Florfenicol	CLSI						30	20		16
Tetracyclines										
Tetracyclin	EUCAST	8		8	0.25	32				
Cephalosporins										
Cephalothin	CLSI	8		16	0.12	16				
Cefotaxim	EUCAST	0.5		0.5	0.25	32				
Ceftazidim	EUCAST	2		2	0.25	32				
3rd generation cephalosporins										
Fluoroquinolones										
Ciprofloxacin	EUCAST	0.06		0.06	0.06	4				
Enrofloxacin										
Quinolones										
Nalidixic acid	CLSI						30	19		13
Oxolinic acid	CLSI	4		4	0.5	64				
Trimethoprim	CLSI						5	16		10
Sulfonamides										
Sulfonamide	CLSI						300	17		12
Aminoglycosides										
Streptomycin	CLSI	8		32	0.25	32				
Gentamicin	EUCAST	2		2	0.25	32				
Neomycin										
Kanamycin	CLSI						30	18		13
Trimethoprim + sulfonamides (1)	CLSI	38		38	0.5	64				
Penicillins										
Ampicillin	EUCAST	4		4	0.5	64				
Ampicillin / Sulbactum (2)		4		4	0.5	64				
Polymyxins										
Colistin	FDA						10	11		8

(1) : Trimethoprim/ sulfonamide (1:19) - concentration of sulfonamide (ko-trimoxazol) is given in table.
(2) : Ampicillin/ Sulbactum (2:1)- concentration of ampicillin is given. The same breakpoint as ampicillin.

Table Breakpoints for antibiotic resistance testing in Food

Test Method Used

- Disc diffusion
- Agar dilution
- Broth dilution
- E-test

Standards used for testing

- NCCLS
- EUCAST

Salmonella	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Amphenicols										
Chloramphenicol	EUCAST	16		16	0.25	32				
Florfenicol	CLSI						30	20		16
Tetracyclines										
Tetracyclin	EUCAST	8		8	0.25	32				
Cephalosporins										
Cephalothin	CLSI	8		16	0.12	16				
Cefotaxim	EUCAST	0.5		0.5	0.25	32				
Ceftazidim	EUCAST	2		2	0.25	32				
3rd generation cephalosporins										
Fluoroquinolones										
Ciprofloxacin	EUCAST	0.06		0.06	0.06	4				
Enrofloxacin										
Quinolones										
Nalidixic acid	CLSI						30	19		13
Oxolinic acid	CLSI	4		4	0.5	64				
Trimethoprim	CLSI						5	16		10
Sulfonamides										
Sulfonamide	CLSI						300	17		12
Aminoglycosides										
Streptomycin	CLSI	8		32	0.25	32				
Gentamicin	EUCAST	2		2	0.25	32				
Neomycin										
Kanamycin	CLSI						30	18		13
Trimethoprim + sulfonamides	CLSI	38		38	0.5	64				
Penicillins										
Ampicillin	EUCAST	4		4	0.5	64				
Ampicillin / Sulbactum		4		4	0.5	64				
Polymyxins										
Colistin	FDA						10	11		8

Table Breakpoints for antibiotic resistance testing in Feedingstuff

Test Method Used

- Disc diffusion
- Agar dilution
- Broth dilution
- E-test

Standards used for testing

- NCCLS
- EUCAST

Salmonella	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Amphenicols										
Chloramphenicol	EUCAST	16		16	0.25	32				
Florfenicol	CLSI						30	20		16
Tetracyclines										
Tetracyclin	EUCAST	8		8	0.25	32				
Cephalosporins										
Cephalothin	CLSI	8		16	0.12	16				
Cefotaxim	EUCAST	0.5		0.5	0.25	32				
Ceftazidim	EUCAST	2		2	0.25	32				
3rd generation cephalosporins										
Fluoroquinolones										
Ciprofloxacin	EUCAST	0.06		0.06	0.06	4				
Enrofloxacin										
Quinolones										
Nalidixic acid	CLSI						30	19		13
Oxolinic acid	CLSI	4		4	0.5	64				
Trimethoprim	CLSI						5	16		10
Sulfonamides										
Sulfonamide	CLSI						300	17		12
Aminoglycosides										
Streptomycin	CLSI	8		32	0.25	32				
Gentamicin	EUCAST	2		2	0.25	32				
Neomycin										
Kanamycin	CLSI						30	18		13
Trimethoprim + sulfonamides	CLSI	38		38	0.5	64				
Penicillins										
Ampicillin	EUCAST	4		4	0.5	64				
Ampicillin / Sulbactum		4		4	0.5	64				
Polymyxins										
Colistin	FDA						10	11		8

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

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

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 samples of foodstuffs were taken according the direction of State Veterinary and Food Administration.

Frequency of the sampling

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

Type of specimen taken

Other: foodstuffs

Diagnostic/ analytical methods used

Methods of sampling - according the valid STN
Diagnostic/ analytical methods used STN ISO 10 272

Table Campylobacter in poultry meat

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for thermophilic Campylobacter spp.	C. coli	C. lari	C. jejuni	C. upsaliensis	thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus)										
fresh	SVFI	batch	25g	15	6	1		5		
meat products										
raw but intended to be eaten	SVFI	batch	25g	1	1			1		
cooked										
cooked, ready-to-eat	SVFI	batch	25g	4	0					
Meat from turkey										
fresh	SVFI	batch	25g	2	0					
Meat from duck (1)	SVFI	batch	25g	1	1	1		1		
Eggs	SVFI	batch	25g	11	0					

(1) : more than one subtype in one positive sample

Footnote

SVFI - State Veterinary and Food Institutes

Table Campylobacter in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for thermophilic Campylobacter spp.	C. jejuni	C. coli	C. upsaliensis	C. lari	thermophilic Campylobacter spp., unspecified	Campylobacter spp., unspecified
Meat from pig											
fresh	SVFI	single	25g	2	0						
Meat from bovine animals											
fresh	SVFI	single	25g	1	0						
Milk, cows'											
raw milk for manufacture											
intended for manufacture of pasteurised/ UHT products	SVFI	single	25g	11	0						
Milk, goats'											
raw	SVFI	batch	25ml	1	0						
Milk, sheep's	SVFI	batch	25ml	21	1						1
Cheeses made from sheep's milk	SVFI	batch	25g	98	0						

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

Other: faeces

Vaccination policy

vaccination in Slovac Republic is not performed.

Table Campylobacter in animals

	Source of information	Sampling unit	Units tested	Total units positive for thermophilic Campylobacter spp.	C. jejuni	C. coli	C. lari	C. upsaliensis	thermophilic Campylobacter spp., unspecified
Cattle (bovine animals)	SVFI	animal	434	3	3				
Sheep	SVFI	animal	24	1	1				
Pigs	SVFI	animal	39	22		22			
Solipeds, domestic	SVFI	animal	2	0					
Gallus gallus (fowl)	SVFI	flock	25	0					
Dogs	SVFI	animal	56	5	4	1			
Cats	SVFI	animal	8	0					
Zoo animals, all (1)	SVFI	animal	4	0					
Other animals (2)	SVFI	animal	4	0					

(1) : exotic birds
(2) : rabbit, pigeon, ferret

Footnote

SVFI - State Veterinary and Food Institutes

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.

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

The monitoring system for Listeria spp. in the Slovak Republic has not been adopted. The investigations in animals were performed on the basis of targeted investigations in differential diagnostics and under suspicion of infection, documented by clinical signs. All samples of foodstuffs were taken according the direction of State Veterinary and Food Administration of the Slovak Republic.

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

A. Listeria spp. in food

Monitoring system

Sampling strategy

All samples of foodstuffs were taken according the direction of State Veterinary and Food Administration.

Frequency of the sampling

At the production plant

Once a week

Methods of sampling (description of sampling techniques)

At the production plant

according to the valid STN

Diagnostic/ analytical methods used

At the production plant

Other: STN EN ISO 11290

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Listeria monocytogenes presence in x g	> detection limit but =< 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Milk, cows'								
raw	SVFI	batch	25ml	22	0			
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products	SVFI	single	25ml	2	0			
intended for manufacture of pasteurised/ UHT products	SVFI	batch	25ml	11	0			
pasteurised milk	SVFI	batch	1/ 25ml	205	0			
UHT milk	SVFI	batch	1ml	86	0			
Milk, sheep's								
raw	SVFI	single	25ml	3	0			
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products	SVFI	single	25ml	1	0			
Milk, goats'								
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products	SVFI	single	25ml	2	0			
Cheeses made from cows' milk (1)	SVFI	batch	25g	15	0			
soft and semi-soft								
made from raw or low heat-treated milk	SVFI	batch	25g	159	0			
made from pasteurised milk	SVFI	batch	25g	197	1	1	0	1
hard								
made from raw or low heat-treated milk	SVFI	batch	25g	4	0			
made from pasteurised milk	SVFI	batch	25g	630	3	3		
Cheeses made from sheep's milk								
soft and semi-soft								

made from raw or low heat-treated milk	SVFI	single	25g	682	3	3		
made from pasteurised milk	SVFI	single	25g	32	0			
hard								
made from raw or low heat-treated milk	SVFI	single	25g	91	0			
made from pasteurised milk	SVFI	single	25g	19	0			
Dairy products (excluding cheeses)								
butter								
made from pasteurised milk	SVFI	batch	25g	35	0			
cream								
made from pasteurised milk	SVFI	batch	25g	13	0			
dairy products, not specified								
made from pasteurised milk	SVFI	batch	25g/ ml	374	0			
ready-to-eat	SVFI	batch	25g	6	0			
non-ready-to-eat	SVFI	batch	25g	4	0			
dairy desserts	SVFI	batch	25g	23	0			
ice-cream	SVFI	batch	25g	6	0			
milk powder and whey powder	SVFI	batch	25g	27	0			
Cheeses, made from unspecified milk or other animal milk	SVFI	batch	25g	15	0			
Cheeses, made from mixed milk from cows, sheep and/ or goats								
soft and semi-soft								
made from raw or low heat-treated milk	SVFI	batch	25g	160	1	1		
made from pasteurised milk	SVFI	batch	25g	127	1	1	0	1

(1) : molten and mouldy cheeses

Footnote

SVFI - State Veterinary and Food Institutes

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Listeria monocytogenes presence in x g	> detection limit but =< 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Meat from broilers (Gallus gallus)								
fresh	SVFI	batch	1/ 25g	4	0			
meat products								
cooked, ready-to-eat	SVFI	batch	1/ 25g	153	3	3		
raw and intended to be eaten raw	SVFI	batch	25g	10	0			
Meat from pig								
fresh	SVFI	batch	25g	19	4	4		
Meat from bovine animals								
fresh	SVFI	batch	1/ 25g	10	1	1		
meat products	SVFI	batch	25g	1	0			
Fish								
smoked	SVFI	batch	1/ 25g	9	0			
Meat from turkey								
meat products								
cooked, ready-to-eat	SVFI	batch	25g	2	0			
Meat, mixed meat	SVFI	batch	25g	324	0			
meat products								
fermented sausages	SVFI	batch	25g	74	0			
raw but intended to be eaten cooked	SVFI	batch	25g	95	0			
cooked, ready-to-eat	SVFI	batch	1/ 25g	2427	29	29		
Fishery products, unspecified	SVFI	batch	1/ 25g	230	2	2		
Other processed food products and prepared dishes	SVFI	batch	25g	50	0			
Meat from other animal species or not specified								
minced meat	SVFI	single	25g	9	2	2		
meat products								
cooked, ready-to-eat	SVFI	single	25g	89	2	2		
Other products of animal origin	SVFI	batch	25g	2	2	2		

Fats and oils (excluding butter)								
fats	SVFI	batch	25g	1	1	1		
Juice	SVFI	batch	25ml	1	1	1		

Footnote

SVFI - State Veterinary and Food Institutes

2.3.4. Listeria in animals

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria spp.	L. monocytogenes	Listeria spp., unspecified	L. ivanovii
Cattle (bovine animals)	SVFI	animal	109	1	1		
Sheep	SVFI	animal	135	17	16		1
Goats	SVFI	animal	8	0			
Pigs	SVFI	animal	79	0			
Poultry, unspecified	SVFI	animal	79	0			
Dogs	SVFI	animal	14	0			
Cats	SVFI	animal	1	0			
Other animals	SVFI	animal	52	0			

Footnote

SVFI - State Veterinary and Food Institutes

2.4. E. COLI INFECTIONS

2.4.1. General evaluation of the national situation

A. Verotoxigenic Escherichia coli infections general evaluation

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

The monitoring system for Verotoxigenic E.coli in the Slovak republic has not been adopted. The investigations were performed on the basis of targeted investigations in differential diagnostics and under suspicoin of infection, documented by clinical signs.

2.4.2. E. Coli Infections in humans

2.4.3. Escherichia coli, pathogenic in foodstuffs

A. Verotoxigenic E. coli (VTEC) in food

Monitoring system

Sampling strategy

All samples of foodstuffs were taken according the direction of State Veterinary and Food Administration.

Frequency of the sampling

Almost in all imported samples and samples taken from market.

Methods of sampling (description of sampling techniques)

according the valid STN

Diagnostic/ analytical methods used

STN EN ISO 16654

Table VT E. coli in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Escherichia coli, pathogenic	E.coli, pathogenic, unspecified	Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified	Verotoxigenic E. coli (VTEC) - VTEC O157:H7
Meat from bovine animals										
meat products	SVFI	batch	25g	4	0					
Milk, cows'										
raw milk for manufacture										
intended for manufacture of pasteurised/ UHT products	SVFI	batch	25g	9	0					
Cheeses made from sheep's milk	SVFI	batch	25g	40	1		1			1
Other food of non-animal origin (1)	SVFI	batch	25g	4	0					

(1) : additives

Footnote

SVFI - State Veterinary and Food Institutes

2.4.4. Escherichia coli, pathogenic in animals

2.5. TUBERCULOSIS, MYCOBACTERIAL DISEASES

2.5.1. General evaluation of the national situation

A. Tuberculosis general evaluation

History of the disease and/ or infection in the country

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

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

bovine animals, pigs - no isolation of the complex M. tuberculosis

Recent actions taken to control the zoonoses

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

2.5.2. Tuberculosis, Mycobacterial Diseases in humans

2.5.3. Mycobacterium in animals

A. Mycobacterium bovis in bovine animals

Status as officially free of bovine tuberculosis during the reporting year

The entire country free

Slovakia is officially free of tuberculosis - Commission Decision 2005/ 179/ EC

Free regions

all regions

Monitoring system

Sampling strategy

maximum 1x/ in 2 years performed tuberculination of bovine animals with simle skin test with bovine tuberculine in all animals over 2 yeras of age. Positive reagents in simple 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

Other: 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 Cº, 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
. proposals towards Community ...:

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 – 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. – 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 –these animals are removed from the herd and after their slaughter, laboratory and epizootical examination is performed.
If tuberculosis is not confirmed, all animals over six weeks of age are subjected to another intradermal comparative test which is performed after at least 42 days from the removal of the positive reactor .
If the tuberculosis is confirmed, the officially tuberculosis-free status is to be withdrawn and the procedure of the Governmental ordinance 280/ 2003 Coll. on animal health problems affecting intra-Community trade in bovine animals and swine should be followed.
c) In the holdings with positive M.bovis or M.avium microbiological result and in the case of staff tuberculosis affection

Measures in case of the positive findings or single cases

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

Notification system in place

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

Table Tuberculosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Mycobacterium spp.	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified	M. avium complex	M. avium complex - M. avium subsp. avium
Pigs	SVFI	animal	76	7				1	6
Zoo animals, all	SVFI	animal	1	0					
Cattle (bovine animals)	SVFI	animal	31	0					
Dogs	SVFI	animal	1	0					

Footnote

SVFI - State Veterinary and Food Institutes

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Routine tuberculin testing		Number of tuberculin tests carried out before the introduction into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/ 432/ EEC)	Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological examinations	Number of animals detected positive in bacteriological examination
	Herds	Animals	Number of herds	%	Number of herds	%	Interval between routine tuberculin tests (*)	Number of animals tested			
SLOVENSKA REPUBLIKA	11618	526770	11618	100	0	0	1	95035	0	12	0
Total	11618	526770	11618	100	0	0		95035	0	12	0

(*) Legend:

In column "Interval between routine tuberculin tests" use the following numeric codes: (0) no routine tests; (1) tests once a year; (2) tests each two years; (3) tests each three years concerning 24 month-old animals; (4) tests each 4 years; (5) others (please give details).

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.

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

Slovakia is officially free of brucellosis (B.melitensis)

2.6.2. Brucellosis in humans

A. Brucellosis in humans

Reporting system in place for the human cases

brucellosis is reported mandatory by physician and microbiological labs

Case definition

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

Diagnostic/ analytical methods used

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

Additional information

For a probable case:
A single high titre

2.6.3. Brucella in foodstuffs

2.6.4. 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) – Commission decision 2005/ 179/ ES

Free regions

all regions

Additional information

Requirements for declaration of a bovine herd as officially brucellosis-free, requirements for retention of the officially brucellosis-free status of a bovine herd, requirements for suspension of the officially brucellosis-free status of a bovine herd, requirements for withdrawal of the officially brucellosis-free status of a bovine herd, requirements for declaration a bovine herd as brucellosis-free, requirements for retention of the brucellosis-free status of a bovine herd, requirements for suspension of the brucelosis-free status of a bovine herd, requirements for withdrawal of the brucellosis-free status of a bovine herd are the part of the Annex 2 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. By this Ordinance of the Government the Council Directive 64/ 432/ EEC was transposed in the full extend into the legal system of the Slovak Republic (text of this Ordinance of the Government is presented in Annex 1).

Monitoring system

Sampling strategy

Examination, standards for identification of the agent are presented in the Annex 4 to the above-mentioned Ordinance of the Government – it is the full transposition of the Annex C of the Council Directive 64/ 432/ EEC.
Examine blood samples
- 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.

Frequency of the sampling

Tests should be performed up to 12 months since the last examination.

Type of specimen taken

Blood

Case definition

abort case

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

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.

Other preventive measures than vaccination 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 intorduction into the herd.

Control program/ mechanisms

The control program/ strategies in place

Requirements for declaration of a bovine herd as officially brucellosis-free, requirements for retention of the officially brucellosis-free status of a bovine herd, requirements for suspension of the officially brucellosis-free status of a bovine herd, requirements for withdrawal of the officially brucellosis-free status of a bovine herd, requirements for declaration a bovine herd as brucellosis-free, requirements for retention of the brucellosis-free status of a bovine herd, requirements for suspension of the brucelosis-free status of a bovine herd, requirements for withdrawal of the brucellosis-free status of a bovine herd are the part of the Annex 2 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. By this Ordinance of the Government the Council Directive 64/ 432/ EEC was transposed in the full extend into the legal system of the Slovak Republic (text of this Ordinance of the Government is presented in Annex 1).

Recent actions taken to control the zoonoses

Examination of blood samples serologically
- in herds officially brucellosis-free – once a year all animals older than 24 months (together with EBL)
- once a year – breeding bulls at insemination stations, in a natural breeding and before the basic selection of breeding bullocks
Examinations shall be performed within 12 months from the last examination.

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 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 intorduction into the herd.

B. Brucella melitensis in sheep

Status as officially free of ovine brucellosis during the reporting year

The entire country free

Commision Decision No. 97/ 232/ ES

Free regions

all regions

Monitoring system

Frequency of the sampling

Once a year

Type of specimen taken

Blood

Methods of sampling (description of sampling techniques)

Yearly there are ivestigated 5% of animals from each herd over 6 month.
Once a year – breeding rams

Case definition

abort case

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

Recent actions taken to control the zoonoses

Examination of blood samples serologically

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.

C. Brucella melitensis in goats

Status as officially free of caprine brucellosis during the reporting year

The entire country free

Commision Decision No. 97/ 232/ ES

Free regions

all regions

Monitoring system

Frequency of the sampling

Once a year

Methods of sampling (description of sampling techniques)

Yearly there are ivestigated 5% of animals from each herd over 6 month.
Once a year – breeding rams

Case definition

abort case

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

Recent actions taken to control the zoonoses

Examination of blood samples serologically

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.

Table Brucellosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Brucella spp.	B. melitensis	B. abortus	B. suis	Brucella spp., unspecified
Pigs	SVI, SVFI	animal	9520	0				
Solipeds, domestic								
horses	SVI, SVFI	animal	195	0				

Footnote

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

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 samples			Information about abortions			Epidemiological investigation					
	Herds	Animals	Number of herds	%	Number of herds	%	Number of bovine herds tested	Number of animals tested	Number of infected herds tested	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
																		Serologically	BST		
SLOVENSKA REPUBLIKA	11618	526770	11618	100	0	0	2806	89753	0	0	0	0	2794	0	0	2628	0	0	0	473	0
Total	11618	526770	11618	100	0	0	2806	89753	0	0	0	0	2794	0	0	2628	0	0	0	473	0

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

Region	Total number of existing ovine / caprine		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
SLOVENSKA REPUBLIKA	2587	324863	2587	100	0	0	2538	16868	0	1659	0	153	0	0
Total	2587	324863	2587	100	0	0	2538	16868	0	1659	0	153	0	0

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. The investigations in animals were performed on the basis of targeted investigations in differential diagnostics and under suspicion of infection, documented by clinical signs. All samples of foodstuffs were taken according the direction of State Veterinary and Food Administration of the Slovak Republic.

2.7.2. Yersiniosis in humans

2.7.3. Yersinia in foodstuffs

Table Yersinia in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Yersinia spp.	Y. enterocolitica	Yersinia spp., unspecified	Y. enterocolitica - O:3	Y. enterocolitica - O:9	Y. enterocolitica - unspecified
Meat from pig										
fresh	SVFI	batch	1g	5	0					

Footnote

SVFI - State Veterinary and Food Institutes

2.7.4. Yersinia in animals

Table Yersinia in animals

	Source of information	Sampling unit	Units tested	Total units positive for Yersinia spp.	Y. enterocolitica	Yersinia spp., unspecified	Y. enterocolitica - O:9	Y. enterocolitica - O:3	Y. enterocolitica - unspecified
Cattle (bovine animals)	SVFI	animal	91	0					
Sheep	SVFI	animal	57	0					
Goats	SVFI	animal	2	0					
Pigs	SVFI	animal	75	0					
Solipeds, domestic									
horses	SVFI	animal	1	0					
Poultry, unspecified	SVFI	animal	74	0					
Dogs	SVFI	animal	14	0					
Cats	SVFI	animal	1	0					
Rabbits	SVFI	animal	8	0					
Guinea pigs	SVFI	animal	1	0					
Birds	SVFI	animal	13	0					
Minks	SVFI	animal	4	0					
Foxes	SVFI	animal	1	0					
Deer	SVFI	animal	6	0					
Fish	SVFI	animal	4	0					
Psittacidae	SVFI	animal	18	0					

Footnote

SVFI - State Veterinary and Food Institutes

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 was 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. Reservoir of natural cycle of trichinellosis is a red fox is which the prevalence of trichinellosis quickly increased. In the year 2000 the prevalence was 4,9% in the year 2002 already 8,1% and in the year 2004 as a whole 13,1% but in 2005 decrease on 11,7% and in 2006 increase on 13,7% again.
The risk of creation of domestic cycle of trichinellosis increase due to increasing number of foxes occurring in towns and villages. In Slovakia often brown bear is infected, whose meat is consumed, however also other carnivore, where mainly wolf for its migration for long distances represents the risk of creation of new outbreaks of trichinellosis.
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

All animals whose meat is intended for human consumption, are examined for the presence of larvae Trichinalla spp. Pigs at slaughterhouses are examined by digestion method in compliance with valid legislation and pigs slaughtered individually are examined by compression method. In the year 2006 was no case of trichinella recorded.

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. Trichinellosis in humans

2.8.3. Trichinella in animals

A. Trichinella in pigs

Monitoring system

Sampling strategy

General

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

Frequency of the sampling

General

Every slaughtered animal is sampled

Type of specimen taken

General

diaphragmatic pillar at the place of transition into tendinous part

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

Negative results
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/ 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.

Diagnostic/ analytical methods used

General

The method of magnetic mixing in digestion of pooled samples

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.

Summary results of the inspections of Trichinella-free holdings including information on farmer compliance

In 2006, out of the total number of 162 384 examined samples in pigs, all the samples revealed a negative result.

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.

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

Negative results
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/ dubious, they shall be taken from individual pigs and each shall

be examined individually by the standard reference digestion method.

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

At present no positive cases of trichinellosis in pigs 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 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 2006, out of the total number of 12 examined samples in horses, all the samples revealed a negative result.

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.

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total units positive for Trichinella spp.	T. spiralis	Trichinella spp., unspecified	T. britovi
Pigs	SVFI	animal	1111082	0			
Solipeds, domestic	SVFI	animal	12	0			
Wild boars							
wild	SVFI	animal	10106	7	4	3	
Foxes	SVFI	animal	723	99	1		98
Bears	SVFI	animal	9	0			
Wolves	SVFI	animal	1	1	1		
Mouflons	SVFI	animal	1	0			
Deer	SVFI	animal	1	0			

Footnote

SVFI - State Veterinary and Food Institutes

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

Echinococcosis is a disease caused by tapeworms belonging to the genus Echinococcus. Cystic echinococcosis is caused by tapeworm E. granulosus parazitizing in dogs and alveolar echinococcosiss is caused by E. multilocularis parazitizing in red foxes and other carnivorae. Humans became infected by oral way with eggs. Transmission is performed by contact with infected animals that excrete eggs by faeces (dog, cat), or by contaminated food. With regard to a long incubation period it is very difficult to determine the source of infection. Larval stages of tapeworm are localized mainly in liver, less in other organs and form the cysts (E. granulosus), or infiltratively inter-grow the parenchym of the organ (E. multilocularis).
Cystic echinococcosis occurs in Slovakia long-termly. In humans the occurrence, confirmed by display methods and also serologically, only sporadic (yearly 1 - 10 cases). In pigs the prevalence dropped from 4 % in the year 1971 to 0,12 % in the year 2003. In the same period in sheep and goats the prevalence was maintained at the level 0,5 – 1 % with considerable increase in some years, with maximum 12,0 % in the year 1995. In the year 2003 it was found in 1,69 % animals at slaughterhouses.
Alveolar echinococcosis in humans was diagnosed in Slovakia only in the year 2001 and up to the year 2003 totally 4 cases occurred in northern areas.
The first cases of occurrence of E. multilocularis in foxes were found coprologically (ELISA and PCR) in the year 1999. In the next years the prevalence of tapeworm was increasing in Slovakia from 24,8 % in the year 2000 to 33,9 % in the year 2002 with the subsequent decrease to 21,9 % in the year 2003. In the whole period the highest prevalence was in Žilina and Prešov region, the lowest in Bratislava and Trnava region.

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

Echinococcosis (larvocysts E. granulosus) were found in cattle, sheep, goats and also in pigs. E. granulosus in cattle increased from 1 case in the year 2003 to 45 cases in the year 2004 and decrease in 2005 to 21 cases, in sheep and goats decreased from 1951 cases in the year 2003, 26 cases in the year 2004 to 16 cases in 2005. Echinococcosis slightly decreased in pigs from 1681 cases in the year 2003 to 1313 cases in the year 2004 and 537 in 2005.
Adult tapeworm E. multilocularis was found by autopsy in 148 red foxes out of 472 examined ones in 2004, in 2005, 108 out of 289 examinated.

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

Eggs of Echinococcus are disseminated in the environment by the host of tapeworms (dogs, foxes and other carnivorae). Contaminated environment, forest fruits, vegetable and non-compliance with the hygienic principles are the main risk factors of transmission of this zoonosis. Monitoring of occurrence of adult tapeworms in carnivorae and larval forms in slaughter animals is important for detection of risk areas in the territory of the country. These knowledge serve for the proposal of

preventive measures for protection of human health.

Recent actions taken to control the zoonoses

Organs of animals slaughtered at slaughterhouse are controlled for the presence of larvocysts Echinococcus. Occurrence of E. multilocularis in red foxes and other carnivore is monitored based on agreement with the SVFA SR.

Suggestions to the Community for the actions to be taken

For each zoonosis, and also for echinococcosis, it is necessary to create EU reference laboratories and subsequently National reference laboratories and to provide their activity from the financial point of view.

2.9.2. Echinococcosis in humans

A. Echinococcus spp. in humans

Case definition

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

Diagnostic/ analytical methods used

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

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

Sporadic or rare cases.

2.9.3. Echinococcus in animals

Table Echinococcus in animals

	Source of information	Sampling unit	Units tested	Total units positive for Echinococcus spp.	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Sheep	SVFI	animal	2	0			
Dogs	SVFI	animal	920	0			
Cats	SVFI	animal	92	0			
Deer	SVFI	animal	2	0			
Other carnivores							
zoo animals (1)	SVFI	animal	7	0			
Wolves	SVFI	animal	1	0			
Ferrets	SVFI	animal	1	0			

(1) : lions - 2
tigers - 3
jaguars - 1
leopards - 1

Footnote

SVFI - State Veterinary and Food Institutes

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

Status of epidemiological situation in the Slovak Republic is demonstrated based on statistical data for the last years:
year number of sample number of animals %
1994 1646 228 13,8
1995 1992 187 9,4
1996 1173 180 15,3
1997 4033 484 12,0
1998 6737 595 8,8
1999 3575 240 6,7
2000 2912 119 4,09
2002 493 101 20,4
2003 505 48 9,5
2004 462 75 15,8
2005 302 105 34,7
2006 287 77 26,8

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

Toxoplasmosis of animals is according to the O.I.E. methodics actual manual of standards for diagnostic tests and vaccines.
6 state veterinary institutes examine blood sera of domestic animals, wildlife and farm animals. Complement fixation test is used and antibody levels against antigen Toxoplazma gondi are being found.
In the year 2006 totally 287 samples were examined in Slovakia and as a whole there were 77 positive animals.

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

In indicated cases, such as aborts, it is recommended to the animal owner the repeated examination after 21 days.

Recent actions taken to control the zoonoses

In the Slovak Republic it does not exist any official monitoring programme for diagnostics of this zoonosis and it is also not subject to obligatory notification.

2.10.2. Toxoplasmosis in humans

2.10.3. Toxoplasma in animals

Table Toxoplasma in animals

	Source of information	Sampling unit	Units tested	Total units positive for Toxoplasma gondii
Cattle (bovine animals)	SVFI	animal	9	0
Sheep	SVFI	animal	5	2
Goats	SVFI	animal	22	11
Pigs	SVFI	animal	2	2
Solipeds, domestic				
horses	SVFI	animal	3	3
Dogs	SVFI	animal	75	28
Cats	SVFI	animal	147	28
Rabbits	SVFI	animal	1	0
Mice				
laboratory animal	SVFI	animal	9	0
Mouflons	SVFI	animal	14	3

Footnote

SVFI - State Veterinary and Food Institutes
- investigated material in all animals was blood

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 50´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 fox's vaccination programme.
The first oral antirabic fox'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 population'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 – 0,57 – 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

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 – non-food animals) in the second case the animals

present the main risk to human rabies

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.

Type of specimen taken

Organs/ tissues: whole animal,head with first vertebra

Methods of sampling (description of sampling techniques)

Samples for examination are sent as soon as possible. Before sending it is necessary to store them at temperature up to 40 C, in order to be adequately cooled.
The sample of the whole animal is sent wrapped in PVC bag put into good closed, firm packing with sufficient amount of absorption material preventing leakage of the contents. 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

Diagnostic/ analytical methods used

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

Vaccination policy

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

Other preventive measures than vaccination in place

movement control system and system of shelters for stray animals

Control program/ mechanisms

The control program/ strategies in place

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

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 § 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 Košice 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 „CAUTION RABIES !"
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 § 35, para 2, letter a) of the Act No. 488/ 2002 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 animal's death or failing to allow its examination, is committed
- a natural person an offence according to the § 43, para 1, letter e) and a penalty shall be imposed according to the § 43, para 2 up to 10 000 SKK,
- a legal or natural person authorized to perform business activities an administrative infringement according to the § 44, letter g) of Act 488/ 2002 Coll.ll. and a penalty shall be imposed according to the § 45, para 1, letter d) up to 5 000 000 SKK.

Results of the investigation

Investigations of the human contacts with the positive cases_Art. 16 para (6) Act 488/ 2002 Coll. On veterinary care and on amendments of some acts as amended
(6) Owner or keeper of animal is obliged to ensure the antirabic vaccination in susceptible carnivore and to ensure, without any delay, veterinary examination of animals that caused injury to human being

Investigations of the human contacts with positive cases

Art. 16 para (6) Act 488/ 2002 Coll. On veterinary care and on amendments of some acts as amended
(6) Owner or keeper of animal is obliged to ensure the antirabic vaccination in susceptible carnivore and to ensure, without any delay, veterinary examination of animals that caused injury to human being

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

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

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

Table Rabies in animals

	Source of information	Sampling unit	Units tested	Total units positive for Lyssavirus (rabies)	unspecified Lyssavirus	European Bat Lyssavirus - unspecified	classical rabies virus (genotype 1)
Cattle (bovine animals)	SVI, SVFI	animal	6	0			
Sheep	SVI, SVFI	animal	5	0			
Goats	SVI, SVFI	animal	3	0			
Pigs	SVI, SVFI	animal	1	0			
Dogs	SVI, SVFI	animal	294	0			
Cats	SVI, SVFI	animal	191	0			
Bats							
wild	SVI, SVFI	animal	14	0			
Foxes							
wild	SVI, SVFI	animal	3630	4	4		
Badgers							
wild	SVI, SVFI	animal	4	0			
Marten							
wild	SVI, SVFI	animal	29	0			
Wild boars							
wild	SVI, SVFI	animal	10	0			
Deer							
wild							
roe deer	SVI, SVFI	animal	5	0			
red deer	SVI, SVFI	animal	4	0			
Squirrels	SVI, SVFI	animal	1	0			
Mice	SVI, SVFI	animal	6	0			
Rats	SVI, SVFI	animal	15	0			
Polecats	SVI, SVFI	animal	1	0			
Weasel	SVI, SVFI	animal	1	0			
Hedgehogs	SVI, SVFI	animal	1	0			
Lynx	SVI, SVFI	animal	2	0			
Hares	SVI, SVFI	animal	2	0			
Ferrets	SVI, SVFI	animal	2	0			
Hamsters	SVI, SVFI	animal	2	0			
Wild animals	SVI, SVFI	animal	7	0			

Other animals	SVI, SVFI	animal	2	0			
Dormice	SVI, SVFI	animal	1	0			
Moles	SVI, SVFI	animal	2	0			

Footnote

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

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 burnetii
Cattle (bovine animals)	SVFI	animal	7334	373
Sheep	SVFI	animal	3200	19
Goats	SVFI	animal	176	0
Pigs	SVFI	animal	3	0
Solipeds, domestic				
horses	SVFI	animal	8	0
Poultry, unspecified	SVFI	animal	1	0
Wild animals	SVFI	animal	2	0
Zoo animals, all	SVFI	animal	5	0
Dogs	SVFI	animal	2	0

Footnote

SVFI - State Veterinary and Food Institutes
- investigated material was blood, serological method CFT

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1. ESCHERICHIA COLI, NON-PATHOGENIC

3.1.1. General evaluation of the national situation

A. Escherichia coli general evaluation

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

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

3.1.2. Antimicrobial resistance in Escherichia coli, non-pathogenic isolates

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1. HISTAMINE

4.1.1. General evaluation of the national situation

A. Histamine General evaluation

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

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

4.1.2. Histamine in foodstuffs

A. Histamine in foodstuffs

Monitoring system

Diagnostic/ analytical methods used

HPLC

Preventive measures in place

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

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

The risk of occurrence is low, in rare cases.

Table Histamine in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units in non- conformity	<= 100 mg/ kg	>100 - <= 200 mg/ kg	>200 - <= 400 mg/ kg	> 400 mg/ kg
Fish									
Fishery products from fish species associated with a high amount of histidine - not enzyme maturated	SVFI	batch	10g	315	0	315			

4.2. ENTEROBACTER SAKAZAKII

4.2.1. General evaluation of the national situation

4.2.2. Enterobacter sakazakii in foodstuffs

A. Enterobacter sakazakii in foodstuffs

Monitoring system

Sampling strategy

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

Frequency of the sampling

- in accordance with target plan

Type of specimen taken

Other: foodstuffs for children, infant formula

Diagnostic/ analytical methods used

ISO/ DTS 22964 Detection of Enterobacter sakazakii

Results of the investigation

All investigated samples were negative for Enterobacter sakazakii.

Table Enterobacter sakazakii in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Enterobacter sakazakii
Infant formula					
dried	Public health authorities		10g	1853	0

4.3. STAPHYLOCOCCAL ENTEROTOXINS

4.3.1. General evaluation of the national situation

A. Staphylococcal enterotoxins general evaluation

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

All 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 as a targeted control, just occasionally.

Recent actions taken to control the hazard

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

4.3.2. Staphylococcal enterotoxins in foodstuffs

A. Staphylococcal enterotoxins in foodstuffs

Monitoring system

Frequency of the sampling

according to work out a plan taking of samples

Type of specimen taken

Other: according Commission Decision 2075/ 2005, cheeses

Definition of positive finding

demonstration of presence of enterotoxin

Diagnostic/ analytical methods used

ELISA

Preventive measures in place

retire of foodstuffs from market network

Notification system in place

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

National evaluation of the recent situation, the trends and sources of 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 cows' milk					
hard					
made from pasteurised milk	SVFU	single	10	4	0
Cheeses made from goats' milk					
soft and semi-soft					
made from raw or low heat-treated milk	SVFI	batch	10g	40	3
Dairy products (excluding cheeses)					
milk powder and whey powder	SVFI	single	10g	6	0

Footnote

SVFI - State Veterinary and Food Institute

5. FOODBORNE OUTBREAKS

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

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:

All types of epidemics : small epidemics included family outbreaks (2-9 cases) and general outbreaks (10 and more cases).

National evaluation of the reported outbreaks in the country:

Trends in numbers of outbreaks and numbers of human cases involved

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

mayonaisse from raw eggs, eggs products preparing by insufficient temperature, ice-cream
agent: salmonella enteritidis.

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

- mainly households (family celebrations) and canteens, less restaurants

Evaluation of the severity and clinical picture of the human cases

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

Descriptions of single outbreaks of special interest

- diagnosis, etiological agens and phagetype
- number of persons : exposed, infected, hospitalized and dead following these age groups : 0

year, 1-4, 5-9, 10-14, 15-19, 20-60, 65+
- date of illness - first and last person
- incubation time and last of illness
- source of infection and its confirmation (laboratory, epdemiologic)
- factors of transmission and its confirmation (laboratory, 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 in humans

Causative agent	General outbreak	Household outbreak	Total Number of persons			Food implicated			Type of evidence for implication of the food	Place where food was consumed	Contributing factors
			ill (in total)	died	in hospital	Food (sub)category	Suspected as a source	Confirmed as a source			
1	2	3	4	5	6	7			8	9	10
Flavivirus - tick-borne encephalitis virus (TBE)	2		13	0	13	2-raw kid milk and milk products	1	1	1-laboratory, 1-epidemiologic.	2 households	combination of breakdown of HACCP and contaminated raw produc
Salmonella - S. Enteritidis	11	7	390	0	44	several kinds of desserts, potato salad with mayonnaise (especially from domestic eggs) with fried schnitzel, eggs, ham, chicken, buns with cream, pork with sour cream and noodles, spread of yeast, sheep cheese, products of abattoir and other contaminated foodstuffs	15	3	15-epidemiolog., 3-laboratory	8-household, 4-school canteen, 2-restaurant, 2-work canteen, 1-pub, 1-retirement homes	combination of breakdown of HACCP and contaminated raw product
Salmonella - S. Enteritidis	429*		1402								combination of breakdown of HACCP and contaminated raw produc
Salmonella - S. Enteritidis - PT 13a	1	0	11	0	0	spinach soup, fish fillet, mashed potatoes	1	0	epidemiolog.	school canteen	combination of breakdown of HACCP and contaminated raw produc
Salmonella - S. Enteritidis - PT 21c	1	0	13	0	9	unknown (contaminated foodstuffs)	1	0	epidemiologic.	5 departmens in hospital	combination of breakdown of HACCP and contaminated raw produc
Salmonella - S. Enteritidis - PT 8	1	1	33	0	3	spinach soup, french potatoes, 1- dessert	1	1	1- epidemiolog. 1- laboratory	1- school canteen, 1- recreational facilities	combination of breakdown of HACCP and contaminated raw produc

Salmonella - S. Typhimurium - DT 104	0	1	10	0	0	desserts from domestic eggs	1	0	epidemilogic.	household	combination of breakdown of HACCP and contaminated raw produc
Trichinella - T. spiralis	0	1	2	0	2	grilled meat and sausages from Poland	1	0	epidemiologic.	household	combination of breakdown of HACCP and contaminated raw produc

Footnote

Data comes from public health institutes in Slovak Republic
*small outbreaks (2-9 cases)