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 2007

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: **Slovakia**
Reporting Year: **2007**
Institutions and laboratories involved in reporting and monitoring:

Laboratory name	Description	Contribution
State Veterinary and Food Administration of the Slovak Republic (SVFA)	SVFA manage, direct and control the excersize of state administration by regional and district veterinary and food administrations, Control Institute of veterinary drugs, state veterinary laboratories	reporting authority
State Veterinary Institute (Zvolen)	carry out laboratory analyses, laboratory diagnostics and testing of official samples taken at veterinary checks and controls of animal health and provide the services of laboratory diagnostics and testing	
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 2007. 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

LIST OF CONTENTS

1. ANIMAL POPULATIONS

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

A. Information on susceptible animal population

Sources of information:

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

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

31 December 2007

Table Susceptible animal populations

* Only if different than current reporting year

Animal species	Category of animals	Number of herds or flocks	Year*	Number of slaughtered animals	Year*	Livestock numbers (live animals)	Year*	Number of holdings	Year*
Cattle (bovine animals)	meat production animals			30001					
	dairy cows			45308		339579			
	heifers			6644		49937			
	calves (under 1 year)			1221		127737			
	in total	10950		83174		517249			
Ducks	breeding flocks, unspecified - in total	2	2006			5000	2006	2	2006
	in total	2	2006			5000	2006	2	2006
Gallus gallus (fowl)	breeding flocks, unspecified - in total	157				1409141		157	
	laying hens	60	2006	1078825		2709000	2006	46	2006
	broilers	645	2006	53588748		4000000	2006	129	2006
	in total	761	2006	54667573		6889000	2006	223	2006
Geese	meat production flocks	1	2006			1000	2006	1	2006
	breeding flocks, unspecified - in total	2	2006			2000	2006	2	2006
	in total	3	2006			3000	2006	3	2006
Goats	animals under 1 year					1053			
	animals over 1 year					5710			
	in total	373		84		6736			
Pigs	fattening pigs			1035454					
	breeding animals - unspecified - sows and gilts			27994					
	in total	1984		1063448		758567			
Sheep	animals under 1 year (lambs)			77475		54897			
	animals over 1 year			9118		303459			
	in total	3035		86593		358356			
Solipeds, domestic	horses - in total			11		11500	2006	500	2006
Turkeys	meat production flocks	16	2006			160000	2006	9	2006
	breeding flocks, unspecified - in total	11	2006			24000	2006	7	2006
	in total	27	2006	39094		400000	2006	16	2006

2. INFORMATION ON SPECIFIC ZOONOSES AND ZOONOTIC AGENTS

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

2.1. SALMONELLOSIS

2.1.1. General evaluation of the national situation

A. General evaluation

History of the disease and/ or infection in the country

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

Monitoring of salmonellosis in other animal species has not been conducted in Slovakia for the time being. In case of suspicion of disease, the owner or person responsible for the holding performs sampling at his/ her own expense.
There were 28 salmonella serovars isolated from animals, whereby S. Enteritidis has continued to be a dominant serovar in 2007.
Focuses of salmonellosis in animals
There were 16 focuses of salmonellosis in animals registered within Slovakia in 2007 (in 10 districts, resp. 5 regions).
A total of focuses of salmonellosis in 2007 were the same comparing the year 2006. In respect of cattle, a total of focuses of salmonellosis in 2007 were decreased by 3 comparing the year 2006, referring to poultry it was more by 3 focuses comparing 2006, pigs showed the same incidence of focuses as in the previous year, and in respect of sheep, there had not been any focus of salmonellosis.

4 focuses of salmonellosis in pigs were officially notified, resulting in mortality rate of 18,69%. This resulted in 63 PCS of dead and destroyed pigs.
7 focuses of salmonellosis in poultry flocks were officially notified, resulting in mortality rate of 5,27%. This resulted in 50 111 PCS of dead and destroyed poultry.
5 focuses of salmonellosis in cattle were officially notified (comparing the year 2006 it was less by 3 focuses), resulting in mortality rate of 54,93%. This resulted in 39 head of dead and destroyed cattle.
Geographical distribution of salmonellosis focuses in animals
Cattle: A total of 5 focuses in Bratislava Region/ Senec District; Banská Bystrica Region/ Rimavská Sobota District; Prešov Region/ Bardejov and Prešov Districts; Košice Region/ Michalovce District.
Pigs: A total of 4 focuses in Trenčín Region/ Trenčín District; Banská Bystrica Region/ Zvolen and Rimavská Sobota Districts; Prešov Region/ Prešov District.
Poultry flocks: A total of 7 focuses in Banská Bystrica Region/ Banská Bystrica (2 focuses), Rimavská Sobota and Zvolen Districts; Prešov Region/ Poprad (2 focuses) and Vranov nad Topľou Districts.
Salmonella spp. in feedingstuffs
Samples intended for bacteriological testing for salmonella presence were taken within the frame of official controls of farm animal feed manufacturing, as well as controls on animal farms and within inspections of plants approved in accordance with Regulation of the European Parliament and of the Council (EC) No 1774/ 2002 laying down health rules concerning animal by-products not intended for human consumption. The samples were tested in the State Veterinary and Food Institutes, using the method STN ISO 6579. Tabulated data from individual laboratories were sent to the SVFI Bratislava which acts as the National Reference Laboratory for Salmonellosis and which compiled the results into a summary report.

Comparing the results from the years 2004, 2005 and 2006, there has been a significant decline in amount of tested samples – a total of 5 276 in 2004, 5 787 in 2005 and 2 103 in 2006. This trend has been mainly recorded in feeds of animal origin as well as in compound feedingstuffs.
As regards the percentage of positive samples in the past years we can conclude that it rose from 0,53% in 2004, 0,76 in 2005 and 0,57 in 2006 to 1,35% in 2007.
In 2007, 11 salmonella serovars were typed without marked dominance of any serovar; S. Enteritidis was isolated from 4 samples, S. Bareilly from 3 samples. There were isolated several types in 2006, S. Enteritidis and S. Agona from 3 samples. S. Worthington dominated in 2004, and S. Infantis in 2005.

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 food and raw material samples were drawn in compliance with the methodical instruction of SVFA SR „Sampling Plan and Food Laboratory Testing in 2007“ and Commission Regulation (EC) No 2073/ 2005 on microbiological criteria for foods.
Food and raw material samples were tested within the State Veterinary and Food Institutes, using the method STN ISO 6579. Tabulated data from individual laboratories were sent to the SVFI Bratislava which acts as the National Reference Laboratory for Salmonellosis and which compiled the results into a summary report.

Frequency of the sampling

according to work out a plan taking of samples

Diagnostic/ analytical methods used

Bacteriological method: STN ISO 6579

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

As compared to the past years 2006 and 2005, in 2007 we have recorded a significant fall in a total of tested samples – a total of 11 678 samples in 2007 were tested, resp. 24 931 in 2005 and 21 248 in 2006. On the other hand a slight increase in percentage of positive samples in 2007 has been recorded (0,34%), comparing to 0,17% in 2005 and 0,22% in 2006.
A total of 11 678 samples in 2007 were tested with positive findings of salmonella in 40 samples (0,34%), thereof 9 088 samples were foods and raw materials. The percentage of positive samples was 0,15%, a finding similar to that of past years within food testing (0,08% and 0,16%).
Concerning variety of salmonella types, there is no difference compared to the past years, practically since 2003 just the same serovars have been detected through the years, with a continuing prevalence of S. Enteritidis serovar.
Be like any other year, the highest incidence of salmonella was recorded in fresh poultry meat with prevalence of S. Enteritidis (5 samples), S. Bareilly, S. Typhimurium and S. enterica susp. Enterica (6,5:-:1,5) were detected each by one sample. Concerning other types of meat, S. Typhimurium was detected in minced pork. Two samples of fermented meat products were salmonella positive – S. Derby and Salmonella I (4,5,12:i-). Milk and milk products were not found positive for salmonellas, reflecting the same situation in the last years. Other foods: 3 positive egg samples (S. Enteritidis a S. Agona) and 1 positive pasta sample (S. Bareilly).

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. Bareilly
Meat from broilers (Gallus gallus)									
fresh (1)	SVFI	single	25g	258	1			1	
meat preparation									
intended to be eaten cooked (2)	SVFI	batch	10g	24	6	5	1		1
meat products									
raw but intended to be eaten cooked	SVFI	batch	10g, 25g	63	0				
cooked, ready-to-eat	SVFI	batch	25g	54	0				
mechanically separated meat (MSM)	SVFI	batch	10g, 25g	9	0				
Meat from turkey									
meat preparation									
intended to be eaten cooked	SVFI	batch	10g	13	0				
meat products									
raw but intended to be eaten cooked	SVFI	single	25g	3	0				
cooked, ready-to-eat	SVFI	batch	25g	1	0				
Meat from geese									
fresh	SVFI	batch	25g	1	0				

(1) : positive sample - S. enterica subsp. enterica (6,5:-:1,5)
(2) : one sample positive for 2 serovars

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	single	25ml	2	0			
raw milk for manufacture								
intended for manufacture of pasteurised/ UHT products	SVFI	single	25ml	17	0			
pasteurised milk	SVFI	batch	25ml	32	0			
UHT milk	SVFI	batch	25ml	2	0			
Milk, goats'								
raw milk for manufacture								
intended for manufacture of pasteurised/ UHT products	SVFI	single	25ml	1	0			
Milk, sheep's								
raw milk for manufacture								
intended for manufacture of pasteurised/ UHT products	SVFI	single	25ml	8	0			
Cheeses made from cows' milk								
soft and semi-soft	SVFI	batch	25g	12	0			
made from raw or low heat-treated milk	SVFI	batch	25g	3	0			
made from pasteurised milk	SVFI	batch	25g	188	0			
(curd)	SVFI	batch	25g	5	0			
hard	SVFI	batch	25g	89	0			
unspecified								
(processed cheeses)	SVFI	batch	25g	9	0			
Cheeses made from goats' milk								
soft and semi-soft								
made from pasteurised milk	SVFI	batch	25g	10	0			
Cheeses made from sheep's milk								
soft and semi-soft								
made from raw or low heat-treated milk	SVFI	batch	25g	854	0			

(Slovak sheep cheese fermented (bryndza))	SVFI	batch	25g	31	0			
Dairy products (excluding cheeses)								
butter								
made from raw or low heat-treated milk	SVFI	batch	25g	12	0			
made from pasteurised milk	SVFI	batch	25g	74	0			
cream								
made from raw or low heat-treated milk	SVFI	batch	25g	15	0			
made from pasteurised milk	SVFI	batch	25g	20	0			
milk powder and whey powder	SVFI	batch	25g	53	0			
ice-cream	SVFI	batch	25g	59	0			
yoghurt	SVFI	batch	25g	64	0			
fermented dairy products	SVFI	batch	25g	33	0			
dairy products, not specified								
non-ready-to-eat								
made from pasteurised milk	SVFI	batch	25g	6	0			
ready-to-eat								
made from pasteurised milk	SVFI	batch	25g	3	0			

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Derby	S. Infantis	S. London	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Agona	S. Montevideo
Meat from pig													
meat preparation													
intended to be eaten cooked	SVFI	batch	10g	383	0								
meat products													
raw but intended to be eaten cooked	SVFI	batch	10g,25g	198	0								
cooked, ready-to-eat	SVFI	batch	25g	912	0								
fermented sausages	SVFI	batch	25g	20	2	1					1		
raw and intended to be eaten raw	SVFI	single	25g	30	0								
fresh	SVFI	single	10g,25g	2025	0								
minced meat													
intended to be eaten cooked	SVFI	single	25g	232	1					1			
carcass	SVFI	single	100cm2	125	0								
offal	SVFI	single	25g	75	0								
Meat from bovine animals													

fresh	SVFI	single	10g, 25g	1639	0								
meat preparation													
intended to be eaten cooked	SVFI	batch	10g	9	0								
Meat from horse													
fresh	SVFI	single	25g	1	0								
meat products	SVFI	single	25g	3	0								
Other products of animal origin	SVFI	single	25g	45	0								
gelatin and collagen	SVFI	single	25g	36	0								
Meat from bovine animals and pig													
meat preparation													
intended to be eaten cooked	SVFI	batch	10g	20	0								
meat products													
(fermented)	SVFI	batch	25g	24	0								
(cooked, ready-to-eat)	SVFI	batch	25g	11	0								
Meat from rabbit													
fresh	SVFI	batch	10g	6	0								
Meat from wild game - land mammals													
fresh	SVFI	single	25g	10	0								
Meat from wild boar													
fresh	SVFI	single	25g	4	0								
Meat from wild game - birds													
fresh	SVFI	single	25g	4	0								

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	Salmonella spp., unspecified	S. Enteritidis	S. Typhimurium	S. Agona	S. Bareilly
Eggs										
table eggs										
- at packing centre	SVFI	batch	25g	95	1		1			
- at retail	SVFI	batch	25g	133	2		1		1	
Fishery products, unspecified	SVFI	batch	25g	14	0					
Fruits and vegetables										
precut	SVFI	batch	25g	12	0					
ready-to-eat	SVFI	batch	25g	100	0					
products	SVFI	batch	25g	47	0					
non-precut	SVFI	batch	25g	1	0					
Juice										
fruit juice										
unpasteurised	SVFI	batch	25g	2	0					
mixed juice	SVFI	batch	25g	14	0					
Fish										
raw	SVFI	batch	25g	37	0					
smoked	SVFI	batch	25g	14	0					
Other processed food products and prepared dishes	SVFI	batch	25g	393	0					
noodles	SVFI	batch	25g	88	1					1
unspecified										
non-ready-to-eat foods	SVFI	batch	25g	32	0					
containing raw egg	SVFI	batch	25g	3	0					
Bakery products										
bread	SVFI	batch	25g	3	0					
cakes	SVFI	batch	25g	7	0					
pastry	SVFI	batch	25g	69	0					
Confectionery products and pastes	SVFI	batch	25g	129	0					
Beverages, non-alcoholic	SVFI	batch	10ml	10	0					
Spices and herbs	SVFI	batch	25g	22	0					
Cereals and meals	SVFI	single	25g	40	0					

Soups										
dehydrated	SVFI	batch	25g	29	0					
Sauce and dressings	SVFI	batch	25g	264	0					
Cocoa and cocoa preparations, coffee and tea	SVFI	batch	25g	46	0					

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)

The target for the reduction of Salmonella enteritidis, Salmonella hadar, Salmonella infantis, Salmonella typhimurium and Salmonella virchow in breeding flocks of Gallus gallus shall be a reduction of the maximum percentage of adult breeding flocks comprising at least 250 birds remaining positive to 1% or less by 31. December 2009.
Based on eradication of the flocks
- health status will be improved
- the risk of vertical transmission of germs on progeny will be removed
- trade barriers in domestic and foreign trade will be removed

The control programme is yearly evaluated.
Official checks at the level of poultry flocks are organized and carried out by the relevant District Veterinary and Food Administration, which also take measures in the case of positive results. Sampling in poultry flocks is carried out by farmers or private veterinarians. Official confirmation samples are taken and sent to the laboratory examination by official veterinarians from the relevant District Veterinary and Food Administrations.
The owner or the person responsible for hatcheries or for breeding flocks must, at his own expense, perform the sampling for analysis for the detection of salmonella either in an approved national laboratory or in a laboratory recognized by the competent authority, with the minimum levels of sampling indicated below being respected.
Monitoring for salmonella composing the target in adult breeding flocks of Gallus gallus comprising at least 250 birds.
Breeding flocks shall be sampled :
A) at the initiative of the operator
B) official sampling:
Sampling at the initiative of the operator shall take at the hatchery every 2 weeks.
Official control sampling is taken:
a. Routine sampling every 16 weeks at hatchery, which shall on that occasion replace the corresponding sampling at the initiative of the operator;
b. routine sampling at the holding on two occasions during the production cycle, the first one being within four weeks following moving to laying phase or laying unit and the second one being towards the end of the laying phase, not earlier than eight weeks before the end of the production cycle.
c. Confirmatory sampling at the holding, following detection of relevant salmonella from sampling at hatchery.

Laying hens flocks

The sampling strategy is the same as in breeding flocks.

Frequency of the sampling

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

Every every 16 weeks weeks

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

Other: routine sampling at the holding on two occasions during the production cycle, the first one being within four weeks following moving to laying phase or laying unit and the second one being towards the end of the laying phase, not earlier than eight weeks before the end of the production cycle

Laying hens: Day-old chicks

Every every 16 weeks weeks

Laying hens: Production period

Other: routine sampling at the holding on two occasions during the production cycle, the first one being within four weeks following moving to laying phase or laying unit and the second one being towards the end of the laying phase, not earlier than eight weeks before the end of the production cycle

Type of specimen taken

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

Other: sample shall consist of a minimum of one composite sample of visibly soiled complete hatcher basket liners taken a random in the incubator, to reach a total of at least 1m². If the hatching eggs from a flock occupy more than one incubator, then one such composite sample shall be taken from each incubator

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

Faeces

Laying hens: Day-old chicks

Other: sample shall consist of a minimum of one composite sample of visibly soiled complete hatcher basket liners taken a random in the incubator, to reach a total of at least 1m². If the hatching eggs from a flock occupy more than one incubator, then one such composite sample shall be taken from each incubator

Laying hens: Production period

Faeces

Methods of sampling (description of sampling techniques)

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

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

Breeding flocks: Production period

1. Either pooled faeces made up of separate samples of fresh faeces each weighing not less than 1 g taken at random from a number of sites in the building in which the birds are kept, or where the birds have free access to more than one building on a particular holding, from each group of buildings on the holding in which the birds are kept. Faeces may be pooled for analysis up to a minimum of 2 pools.
2. 5 pairs of boot swabs. The boot swabs may be pooled for analysis into a minimum of 2 pools. The surface of the boot swab shall be moistened using appropriate diluent (such as 0.8% sodium chloride, 0.1% peptone in sterile deionised water, or sterile water). Walking around shall be done in a manner which will sample representatively all parts of the sector, including littered and slatted areas when slats are safe to walk on. All separate pens within a house shall be included in the sampling. On completion of sampling in the chosen sector, boot swabs must be removed carefully so as not to dislodge adherent material.
3. In cage flocks, sampling may consist of naturally mixed faeces from dropping belts, scrapers or deep pits, depending on the type of house. 2 samples of at least 150g shall be collected to be tested individually:
- droppings belts beneath each tier of cages which are run regularly and discharged into an auger or conveyor system,
- droppings pit system in which deflectors beneath the cages are scraped into a deep pit beneath the house,
- droppings pit system in a step cage house when cages are offset and faeces fall directly into the pit,
There are normally several stacks of cages within a house. Pooled faeces from each stack shall be represented in the overall pooled sample. Two pooled samples shall be taken from each flock as described below.
In systems where there are belts or scrapers, these shall be run on the day of the sampling before sampling is carried out.
In systems where there are deflectors beneath cages and scrapers, pooled faeces which has lodged on the scraper after it has been run, shall be collected.
In step – cage systems where there is no belt or scraper system it is necessary to collect pooled faeces from the deep pit.
Droppings belt systems: pooled faecal material from the discharge ends of the belts

shall be collected.

Laying hens: Day-old chicks

The method of sampling is the same as in breeding flocks.

Laying hens: Production period

The method of sampling is the same as in breeding flocks.

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)

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

Laying hens flocks

Vaccination policy in laying hens is the same as in breeding flocks.

Other preventive measures than vaccination in place

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

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

Laying hens flocks

The sampling strategy is the same as in breeding flocks.

Control program/ mechanisms

Recent actions taken to control the zoonoses

The legal basis of the control programme is:
- Act No. 488/ 2002 Coll. on veterinary care and amendment of some acts,
- Regulation No 2160/ 2003/ EC of the European Parliament and of the Council of 17. November 2003 on the control of salmonella and other specified food-borne zoonotic agents, on the basis of which must Member States draw up national programmes for control of salmonellae.
- Decree of the Slovak Government No 626/ 2004 Coll., on the monitoring of zoonoses and zoonotic agents,
- Decree of the Slovak Government No č. 282/ 2003 Coll. on animal health requirements for the placing on the market of fresh poultry meat,
- Commission Regulation No. 1003/ 2005 implementing Regulation No 2160/ 2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in breeding flocks of Gallus gallus and amending Regulation No 2160/ 2003
- Commission Regulation No 1091/ 2005 implementing Regulation No 2160/ 2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella.
The veterinary authorities are the respective authorities responsible for the control and coordination of fulfilment of the programme.

Measures in case of the positive findings or single cases

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

The measures must comply with the following minimum requirements:

a) no bird may leave the house concerned unless the competent authority has authorized the slaughter and safe destruction under supervision or slaughter in a slaughterhouse designated by the competent authority.
b) non-incubated eggs produced by the birds in the house in question must be safely destroyed on the spot or after appropriate marking be taken under supervision to an approved egg-processing establishment to be heat treated in accordance with the requirements of the special rule.
c) all poultry in the positive flock, including one – day chicks, must be slaughtered or destroyed so as to reduce as much as possible the risk of spreading salmonella. Slaughtering must be carried out in accordance with the legislation on food hygiene. By – products not intended for human consumption must be disposed of in accordance with Regulation (EC) No. 1774/ 2002 of the European Parliament and of the Council of 3. October 2002 laying down health rules concerning animal by – products not intended for human consumption.
d) Where eggs for hatching are still present in a hatchery, they must be safely destroyed or treated as high risk material in accordance with Regulation (EC) No. 1774/ 2002 of the European Parliament and of the Council.
e) A thorough cleansing and disinfection must be carried out after slaughtering or destruction from infected flocks, including safe disposal of manure or litter, in accordance with procedure laid down by the competent veterinary administration authority.
d) Antibiotics may be used in accordance with Commission Regulation (EC) No. No. 1091/ 2005 only.

Laying hens flocks

Measures in case of the positive findings or single cases are the same as in breeding flocks.

Notification system in place

The state veterinary laboratories in the Slovak Republic notify the results of all negative examinations in rearing and adult breeding flocks and in hatcheries to the competent District Veterinary and Food Administrations. The District Veterinary and Food Administrations notify in the stated date the Monthly report on the results to the State Veterinary and Food Administration of the Slovak Republic (they send the notification for information to the Regional Veterinary and Food Administration).
Where as a result of monitoring carried out the presence of Salmonella enteritidis, Salmonella typhimurium, Salmonella hadar, Salmonella infantis and Salmonella virchow is detected in a breeding flock, the person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock notify the results to the competent District Veterinary and Food Administration.
Reporting shall include:
- detailed description of the options implemented for the sampling scheme and the type of samples taken, as appropriate
- number of existing breeding flocks and those tested
- results of the testing
- explanations on the results, in particular concerning exceptional cases.

Holder of animals, operator of the hatchery is obliged to notify the presence without any delay, according
to § 35of the Act No. 488/ 2002 Coll. on veterinary care.

In case of breaking the law an owner, holder committed an offence according to § 43 of the Act No. 488/ 2002 Coll. on veterinary care and administrative infringement according to the § 44.

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

The investigation of Gallus gallus flocks has continued in 2007 under The National Eradication Program for Salmonella Infections in Poultry Flocks in the Slovak Republic that was adopted upon Act No 488/ 2002 Coll.
In 2007, the above-mentioned program was directed towards monitoring Salmonella Enteritidis and Salmonella Typhimurium and in case of positive findings there had been ordered applicable measures in breeding flocks (rearing flocks of breeding poultry, adult breeding flocks) and in flocks of productive poultry (rearing flocks of laying hens, egg production flocks, meat production flocks).

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.

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

The investigation of Gallus gallus flocks has continued in 2007 under The National Eradication Program for Salmonella Infections in Poultry Flocks in the Slovak Republic that was adopted upon Act No 488/ 2002 Coll.
In 2007, the above-mentioned program was directed towards monitoring Salmonella Enteritidis and Salmonella Typhimurium and in case of positive findings there had been ordered applicable measures in breeding flocks (rearing flocks of breeding poultry, adult breeding flocks) and in flocks of productive poultry (rearing flocks of laying hens, egg production flocks, meat production flocks).

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)

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

Meat production flocks

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

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.

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

Based on Commission Decision No 2006/ 662/ EC of 29 September 2006, a study from October 1, 2006 to September 30, 2007 on salmonella prevalence in turkey flocks had been conducted. This study had been directed towards turkey breeding flocks and productive flocks (fattening). A total of 44 turkey flocks were examined with salmonella detection in 23 flocks (52,2 %). There were 2 serovars isolated (S. Saintpaul, S. Kiambu). In two flocks both salmonella serovars were determined.

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

Monitoring system

Sampling strategy

Breeding flocks

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

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

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

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.

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

Based on Commission Decision No 2006/ 668/ EC of 29 September 2006, a baseline survey within the Member States from October 1, 2006 to September 30, 2007 on salmonella prevalence in slaughter pigs had been conducted.
A total of 385 samples were examined with a positive salmonella finding in 30 samples (7,79%). There were 12 serovars determined (S. Enteritidis, S. Typhimurium, S. Abony, S. Agona, S. Bovismorbificans, S. Cero, S. Derby, S. Havana, S. Choleraesuis, S. Infantis, S. Momtevideo, S.I.(6,7 : - : 1,5))

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. Agona	S. Enteritidis	S. Typhimurium	S. Hadar	S. Infantis	S. Virchow	Salmonella spp., unspecified
Gallus gallus (fowl)											
parent breeding flocks for egg production line											
day-old chicks	SVFI	flock	24	0							
during rearing period	SVFI	flock	23	0							
during production period	SVFI	flock	47	0							
- at hatchery	SVFI	flock	19	0							
parent breeding flocks for meat production line											
day-old chicks	SVFI	flock	56	0							
during rearing period	SVFI	flock	78	0							
during production period	SVFI	flock	528	5	1	4					
- at hatchery	SVFI	flock	85	0							
parent breeding flocks, unspecified											
during rearing period	SVFI	flock	5	0							
during production period	SVFI	flock	22	2		2					
- at hatchery	SVFI	flock	32	2		2					

Table Salmonella in other poultry (Part A)

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Senftenberg	S. Kiambu	S. Montevideo	S. Abony	S. Agona	S. Bareilly	S. Blockley	S. Hadar	S. Indiana	S. Lille	S. Saintpaul	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Bredeney	S. Derby
Gallus gallus (fowl)																				
laying hens																				
day-old chicks	SVFI	flock	28	0																
during rearing period	SVFI	flock	112	9												8				
during production period	SVFI	flock	1032	28					5	2						18				1
broilers																				
day-old chicks	SVFI	flock	2026	69			2			2				9		52	1			
during rearing period	SVFI	flock	2513	113	1		3	1		20				5		52	12		3	
unspecified	SVFI	flock	9	0																
Ducks																				
breeding flocks (1)	SVFI	flock	3	2							1						1			
meat production flocks	SVFI	flock	17	7	1								1				2			
unspecified	SVFI	flock	29	1								1								
- at hatchery	SVFI	flock	10	3												1				
Geese																				

breeding flocks	SVFI	flock	3	0																
meat production flocks	SVFI	flock	11	1												1				
Turkeys																				
breeding flocks	SVFI	flock	370	9											9					
meat production flocks	SVFI	flock	151	7		1									6					
unspecified	SVFI	flock	4	0																
(baseline study) (2)	SVFI	flock	44	23		2									23					

(1) : one flock positive for 2 serovars
(2) : one flock positive for 2 serovars

Table Salmonella in other poultry (Part B)

	S. Infantis	S. Kapemba	S. Kentucky	S. Kottbus	S. 6,8:e,h:-	S. 6,7:-:1,5
Gallus gallus (fowl)						
laying hens						
day-old chicks						
during rearing period	1					
during production period	1		1			
broilers						
day-old chicks	1		1			1
during rearing period	10		6			
unspecified						
Ducks						
breeding flocks (1)				1		
meat production flocks		1		1	1	
unspecified						
- at hatchery				2		
Geese						
breeding flocks						
meat production flocks						
Turkeys						
breeding flocks						
meat production flocks						
unspecified						

(1) : one flock positive for 2 serovars
(2) : one flock positive for 2 serovars

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Infantis	S. Bareilly	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Pigeons	SVFI	animal	86	5			2	3	
Quails	SVFI	flock	4	0					
Pheasants									
parent flocks	SVFI	flock	14	0					
meat production flocks	SVFI	flock	49	2	1	1			
Ostriches	SVFI	flock	12	0					
Swans	SVFI	animal	2	0					
Wild ducks	SVFI	animal	3	0					
Peafowl	SVFI	animal	2	0					
Parrots	SVFI	animal	30	0					

Table Salmonella in other animals (Part A)

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Montevideo	S. Senftenberg	Other serotypes	S. Indiana	S. Infantis	S. Pomona	S. enterica subsp. diarizonae	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. enterica subsp. salamae	S. Abony	S. Agona	S. Bovismorbificans	S. Cerro	S. Corvallis
Cattle (bovine animals)																				
calves (under 1 year)	SVFI	animal	506	15								6	6							1
adult cattle over 2 years	SVFI	animal	269	6								1	5							
Sheep	SVFI	animal	97	0																
Goats	SVFI	animal	10	0																
Pigs																				
breeding animals	SVFI	animal	65	0																
fattening pigs	SVFI	animal	517	16			1						8				1			
(baseline study) (1)	SVFI	animal	385	30	2		4		1			3	4			3	1	2	1	
Solipeds, domestic	SVFI	animal	10	1									1							
Dogs	SVFI	animal	279	4				1	1			1	1							
Cats	SVFI	animal	31	2								1	1							
Zoo animals, all	SVFI	animal	16	3						1					1					1
All animals																				
pet animals																				

(exotic animals)	SVFI	animal	64	4		2					1				1					
Wild boars	SVFI	animal	1	1									1							

(1) : 4 other serovars - S. I(6,7:-:1,5)

Table Salmonella in other animals (Part B)

	S. Derby	S. Choleraesuis	S. Dublin	S. Havana
Cattle (bovine animals)				
calves (under 1 year)			3	
adult cattle over 2 years				
Sheep				
Goats				
Pigs				
breeding animals				
fattening pigs		6		
(baseline study) (1)	5	3		1
Solipeds, domestic				
Dogs				
Cats				
Zoo animals, all				
All animals				
pet animals				
(exotic animals)				
Wild boars				

(1) : 4 other serovars - S. I(6,7:-:1,5)

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. Bareilly	S. Lille	S. Montevideo	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Livingstone
Feed material of land animal origin												
dairy products	SVFI	single	25g	57	0							
meat and bone meal	SVFI	single	25g	28	2			1				1
poultry offal meal	SVFI	single	25g	20	5	3	1		1			
blood meal	SVFI	single	25g	6	0							
animal fat	SVFI	single	25g	14	0							
protein meal												
(pork)	SVFI	single	25g	6	0							
Feed material of marine animal origin												
fish meal	SVFI	single	25g	62	0							
other fish products												
(dried anchovy)	SVFI	batch	25g	3	0							
Pet food												
final product												

pelleted (for dogs)	SVFI	single	25g	7	0							
canned products (salami for dogs)	SVFI	single	25g	7	0							

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Agona	S. Lille
Feed material of cereal grain origin										
barley derived	SVFI	single	25g	25	1					1
wheat derived	SVFI	single	25g	28	0					
maize	SVFI	single	25g	32	0					
derived	SVFI	single	25g	13	2				2	
other cereal grain derived	SVFI	single	25g	4	0					
oat derived	SVFI	single	25g	17	0					
Feed material of oil seed or fruit origin										
rape seed derived	SVFI	single	25g	21	0					
soya (bean) derived	SVFI	single	25g	95	0					
sunflower seed derived	SVFI	single	25g	15	0					
other oil seeds derived	SVFI	single	25g	5	0					
Other feed material										
forages and roughages	SVFI	single	25g	191	0					
other plants	SVFI	single	25g	1	0					
minerals	SVFI	single	25g	3	0					
straws	SVFI	single	25g	25	2	1	1			
(lupinus)	SVFI	single	25g	1	0					
(beet cuttings)	SVFI	single	25g	5	0					
Silage	SVFI	single	25g	13	0					
All feedingstuffs										
- at farm (sample from manger)	SVFI	single	25g	7	0					

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Agona	S. Derby	S. Infantis	S. Tennessee	Salmonella spp.	S. Typhimurium	S. Enteritidis	Salmonella spp., unspecified
Compound feedingstuffs for cattle													
final product	SVFI	batch	25g	65	0								
Compound feedingstuffs for pigs													
final product	SVFI	batch	25g	173	0								
Compound feedingstuffs for poultry (non specified)													
final product	SVFI	batch	25g	19	0								
Compound feedingstuffs for poultry -breeders													
final product	SVFI	batch	25g	12	0								
Compound feedingstuffs for poultry - laying hens													
final product	SVFI	batch	25g	70	2	1						1	
Compund feedingstuffs for poultry - broilers													
final product	SVFI	batch	25g	298	3			1	1			1	

Pet food													
dog snacks (pig ears, chewing bones)	SVFI	batch	25g	37	2		1				1		
Compound feedingstuffs for fish	SVFI	batch	25g	15	0								

2.1.6. Salmonella serovars and phagetype distribution

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

Table Salmonella serovars in animals

Serovars		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Other animals	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=		21	30	16	269		15			22
Number of isolates serotyped	N=	0	21	30	16	269	0	15	0	0	22
Number of isolates per type											
S. Abony				3		1					
S. Agona				1	1	6					
S. Bareilly						24					1
S. Blockley								1			
S. Bovismorbificans				2							
S. Bredeney						3					
S. Cerro				1							
S. Choleraesuis				3	6						
S. Corvallis											1
S. Derby				5		1					
S. Dublin			3								
S. Enteritidis			7	3		138		2			4
S. Hadar								1			
S. Havana				1							
S. Indiana								1			1
S. Infantis				1		13					2
S. Kapemba								1			

S. Kentucky					8					
S. Kiambu					3					
S. Kottbus							4			
S. Lille					14					
S. Montevideo			2		5					
S. Pomona										1
S. Saintpaul					38					
S. Senftenberg					1		1			2
S. Typhimurium		11	4	8	13		3			7
S. 6,7:-:1,5			4	1	1					
S. 6,8:e,h:-							1			
S. enterica subsp. diarizonae										1
S. enterica subsp. salamae										2

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella serovars in food

Serovars		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin		Other food	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=	8		8		13						2	
Number of isolates serotyped	N=	8	0	4	0	13	0	3	0	0	0	2	0
Number of isolates per type													
S. Agona						2						1	
S. Bareilly								3					
S. Derby				1									
S. Enteritidis		4				8						1	
S. Infantis		2											
S. Kentucky						1							
S. London				1									
S. Montevideo		2		1									
S. Typhimurium						2							
Other serotypes (1)				1									

(1) : S. I (4,5,12:-i:-)

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella serovars in feed

Serovars		Compound feedingstuffs, not specified		Feed material of cereal grain origin		Pet food		Feed material of land animal origin	
Sources of isolates (*)		M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=	5		5		2		7	
Number of isolates serotyped	N=	5	0	5	0	2	0	7	0
Number of isolates per type									
S. Agona		1		2					
S. Bareilly								3	
S. Derby						1			
S. Enteritidis		2		1				1	
S. Infantis		1							
S. Lille				1				1	
S. Livingstone								1	
S. Montevideo								1	
S. Tennessee		1							
S. Typhimurium				1					
Salmonella spp.						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.

B. Antimicrobial resistance in Salmonella in pigs

Laboratory methodology used for identification of the microbial isolates

MIC Testing and Disc Diffusion Testing according to NCCLS.
Antimicrobials are 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.

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.

D. Antimicrobial resistance in Salmonella in foodstuff derived from cattle

Notification system in place

Table Antimicrobial susceptibility testing in S. Agona

n = Number of resistant isolates	S. Agona			
	Pigs		**Gallus gallus (fowl) - laying hens**	
Isolates out of a monitoring programme	no		yes	
Number of isolates available in the laboratory	3		5	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Gentamicin	3	0	5	0
Kanamycin	3	0	5	0
Streptomycin	3	0	5	0
Amphenicols				
Chloramphenicol	3	1	5	0
Florfenicol	3	1	5	0
Cephalosporins				
Cefotaxim	3	0	5	0
Ceftazidim	3	0	5	0
Fluoroquinolones				
Ciprofloxacin	3	0	5	0
Fully sensitive	3	2	5	5
Penicillins				
Ampicillin	3	0	5	0
Polymyxins				
Colistin	3	0	5	0
Quinolones				
Nalidixic acid	3	0	5	0
Resistant to 1 antimicrobial	3	0	5	0
Resistant to 2 antimicrobials	3	0	5	0
Resistant to 3 antimicrobials	3	1	5	0
Sulfonamides				
Sulfonamide	3	1	5	0
Tetracyclines				
Tetracyclin	3	0	5	0
Trimethoprim	3	0	5	0

Footnote

Pigs: Fully sensitive - 2 x; CSuF resistance - 1 x; Gallus gallus (fowl) – laying hens: Fully sensitive - 5 x;

Table Antimicrobial susceptibility testing in S. Agona

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

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

	S. Bareilly
	Pheasants - meat production flocks - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	**Break point**	**N**	**n**	**Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to**																	**lowest**	**highest**
				<=0.03	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	
Aminoglycosides																						
Gentamicin	2	1	0					1													0.25	32
Kanamycin	16	1	0								1										4	128
Streptomycin	32	1	0											1							2	128
Amphenicols																						
Chloramphenicol	16	1	0								1										2	64
Florfenicol	16	1	0								1										2	64
Cephalosporins																						
Cefotaxim	0.5	1	0			1															0.06	4
Ceftazidim	2	1	0				1														0.25	16
Fluoroquinolones																						
Ciprofloxacin	0.06	1	0	1																	0.008	8
Penicillins																						
Ampicillin	4	1	0							1											0.5	32
Polymyxins	0																					
Quinolones																						
Nalidixic acid	16	1	0									1									4	64
Sulfonamides																						
Sulfonamide	256	1	0										1								8	1024
Tetracyclines																						
Tetracyclin	8	1	0							1											1	64
Trimethoprim	2	1	0					1													0.5	32

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

	S. Bareilly
	Gallus gallus (fowl) - broilers - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	7

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	7	0				6	1														0.25	32
Kanamycin	16	7	0								7											4	128
Streptomycin	32	7	1										4	2			1					2	128
Amphenicols																							
Chloramphenicol	16	7	0							1	3	3										2	64
Florfenicol	16	7	0							1	4	2										2	64
Cephalosporins																							
Cefotaxim	0.5	7	0		1	6																0.06	4
Ceftazidim	2	7	0				1	6														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	7	6	1				6														0.008	8
Penicillins																							
Ampicillin	4	7	1							6					1							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	7	6								1					6						4	64
Sulfonamides																							
Sulfonamide	256	7	7																	7		8	1024
Tetracyclines																							
Tetracyclin	8	7	7													7						1	64
Trimethoprim	2	7	1					6							1							0.5	32

Table Antimicrobial susceptibility testing in S. Bareilly

n = Number of resistant isolates	S. Bareilly			
	Pheasants		**Gallus gallus (fowl) - broilers**	
Isolates out of a monitoring programme	yes		yes	
Number of isolates available in the laboratory	1		7	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Gentamicin	1	0	7	0
Kanamycin	1	0	7	0
Streptomycin	1	0	7	1
Amphenicols				
Chloramphenicol	1	0	7	0
Florfenicol	1	0	7	0
Cephalosporins				
Cefotaxim	1	0	7	0
Ceftazidim	1	0	7	0
Fluoroquinolones				
Ciprofloxacin	1	0	7	6
Fully sensitive	1	1	7	0
Penicillins				
Ampicillin	1	0	7	1
Polymyxins				
Colistin	1	0	7	0
Quinolones				
Nalidixic acid	1	0	7	6
Resistant to 1 antimicrobial	1	0	7	0
Resistant to 2 antimicrobials	1	0	7	0
Resistant to 3 antimicrobials	1	0	7	0
Resistant to 4 antimicrobials	1	0	7	6
Resistant to >4 antimicrobials	1	0	7	1
Sulfonamides				
Sulfonamide	1	0	7	7
Tetracyclines				
Tetracyclin	1	0	7	7
Trimethoprim	1	0	7	1

Footnote

Pheasants: Fully sensitive - 1 x; Gallus gallus (fowl) – broilers: SuTNxCip resistance - 6 x; ASSuTW resistance - 1 x.

Table Antimicrobial susceptibility testing in S. Bareilly

n = Number of resistant isolates	S. Bareilly			
	Meat from broilers (Gallus gallus)		**Other processed food products and prepared dishes - noodles**	
Isolates out of a monitoring programme	yes		yes	
Number of isolates available in the laboratory	3		1	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Gentamicin	3	0	1	0
Kanamycin	3	0	1	0
Streptomycin	3	0	1	0
Amphenicols				
Chloramphenicol	3	0	1	0
Florfenicol	3	0	1	0
Cephalosporins				
Cefotaxim	3	0	1	0
Ceftazidim	3	0	1	0
Fluoroquinolones				
Ciprofloxacin	3	3	1	0
Fully sensitive	3	0	1	1
Penicillins				
Ampicillin	3	0	1	0
Polymyxins				
Colistin	3	0	1	0
Quinolones				
Nalidixic acid	3	3	1	0
Resistant to 1 antimicrobial	3	0	1	0
Resistant to 2 antimicrobials	3	0	1	0
Resistant to 3 antimicrobials	3	0	1	0
Resistant to 4 antimicrobials	3	3	1	0
Resistant to >4 antimicrobials	3	0	1	0
Sulfonamides				
Sulfonamide	3	3	1	0
Tetracyclines				
Tetracyclin	3	3	1	0
Trimethoprim	3	0	1	0

Table Antimicrobial susceptibility testing of S. Bareilly in Other processed food products and prepared dishes - noodles - quantitative data [Dilution method]

	S. Bareilly
	Other processed food products and prepared dishes - noodles
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	1	0					1														0.25	32
Kanamycin	16	1	0								1											4	128
Streptomycin	32	1	0									1										2	128
Amphenicols																							
Chloramphenicol	16	1	0								1											2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	0.06	4
Ceftazidim	2	1	0				1															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		0.008	8
Penicillins																							
Ampicillin	4	1	0						1													0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	0												1							8	1024
Tetracyclines																							
Tetracyclin	8	1	0						1													1	64
Trimethoprim	2	1	0					1														0.5	32

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

	S. Bareilly
	Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - Monitoring - monitoring survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	3

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	3	0				3															0.25	32
Kanamycin	16	3	0								3											4	128
Streptomycin	32	3	0											3								2	128
Amphenicols																							
Chloramphenicol	16	3	0								2	1										2	64
Florfenicol	16	3	0								3											2	64
Cephalosporins																							
Cefotaxim	0.5	2	0			2																0.06	4
Ceftazidim	2	2	0					2														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	3	3					3														0.008	8
Penicillins																							
Ampicillin	4	3	0							3												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	3	3													3						4	64
Sulfonamides																							
Sulfonamide	256	3	3																	3		8	1024
Tetracyclines																							
Tetracyclin	8	3	3													3						1	64


Trimethoprim
2
3
0
3
0.5
32

Table Antimicrobial susceptibility testing of S. Bareilly in Feed material of land animal origin - poultry offal meal - at slaughterhouse - Monitoring - monitoring survey - quantitative data [Dilution method]

	S. Bareilly
	Feed material of land animal origin - poultry offal meal - at slaughterhouse - Monitoring - monitoring survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	3

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	3	0				3															0.25	32
Kanamycin	16	3	0								3											4	128
Streptomycin	32	3	0									1	1	1								2	128
Amphenicols																							
Chloramphenicol	16	3	0								2	1										2	64
Florfenicol	16	3	0								3											2	64
Cephalosporins																							
Cefotaxim	0.5	3	0			3																0.06	4
Ceftazidim	2	3	0					3														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	3	2	1				2														0.008	8
Penicillins																							
Ampicillin	4	3	1							2					1							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	2	2													2						4	64
Sulfonamides																							
Sulfonamide	256	3	2											1						2		8	1024
Tetracyclines																							
Tetracyclin	8	3	2						1							2						1	64
Trimethoprim	2	3	0					3														0.5	32

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

	S. Bredeney
	Gallus gallus (fowl) - broilers - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	1	0				1															0.25	32
Kanamycin	16	1	1														1					4	128
Streptomycin	32	1	0											1								2	128
Amphenicols																							
Chloramphenicol	16	1	0									1										2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0			1																0.06	4
Ceftazidim	2	1	0					1														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	1								1											0.008	8
Penicillins																							
Ampicillin	4	1	0							1												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	1													1						4	64
Sulfonamides																							
Sulfonamide	256	1	1																	1		8	1024
Tetracyclines																							
Tetracyclin	8	1	1													1						1	64
Trimethoprim	2	1	0					1														0.5	32

Table Antimicrobial susceptibility testing in S. Bredeney

n = Number of resistant isolates	S. Bredeney							
	Cattle (bovine animals)		**Pigs**		**Turkeys**		**Gallus gallus (fowl) - broilers**	
Isolates out of a monitoring programme	no		no		yes		yes	
Number of isolates available in the laboratory	1		1		1		1	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides								
Gentamicin	1	0	1	0	1	0	1	0
Kanamycin	1	1	1	1	1	1	1	1
Streptomycin	1	0	1	1	1	1	1	0
Amphenicols								
Chloramphenicol	1	0	1	0	1	0	1	0
Florfenicol	1	0	1	0	1	0	1	0
Cephalosporins								
Cefotaxim	1	0	1	0	1	0	1	0
Ceftazidim	1	0	1	0	1	0	1	0
Fluoroquinolones								
Ciprofloxacin	1	0	1	0	1	0	1	1
Fully sensitive	1	0	1	0	1	0	1	0
Penicillins								
Ampicillin	1	0	1	0	1	0	1	0
Polymyxins								
Colistin	1	0	1	0	1	0	1	0
Quinolones								
Nalidixic acid	1	0	1	0	1	0	1	1
Resistant to 1 antimicrobial	1	0	1	0	1	0	1	0
Resistant to 2 antimicrobials	1	1	1	0	1	0	1	0
Resistant to 3 antimicrobials	1	0	1	1	1	0	1	0
Resistant to 4 antimicrobials	1	0	1	0	1	1	1	0
Resistant to >4 antimicrobials	1	0	1	0	1	0	1	1
Sulfonamides								
Sulfonamide	1	0	1	0	1	1	1	1
Tetracyclines								
Tetracyclin	1	1	1	1	1	1	1	1
Trimethoprim	1	0	1	0	1	0	1	0

Footnote

Cattle (bovine animals): TK resistance 1 x; Pigs: STK resistance 1 x; Turkeys: SSuTK resistance 1 x; Gallus gallus (fowl) – broilers: SuTKNxCip resistance 1 x.

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

	S. Bredeney
	Cattle (bovine animals) - unspecified - at slaughterhouse - animal sample - Surveillance
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	1	0					1														0.25	32
Kanamycin	16	1	1														1					4	128
Streptomycin	32	1	0									1										2	128
Amphenicols																							
Chloramphenicol	16	1	0								1											2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	0.06	4
Ceftazidim	2	1	0				1															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		0.008	8
Penicillins																							
Ampicillin	4	1	0						1													0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	0											1								8	1024
Tetracyclines																							
Tetracyclin	8	1	1													1						1	64
Trimethoprim	2	1	0					1														0.5	32

Footnote

TK resistance 1 x. Ciprofloxacin: = 0,03 µg/ ml – 0 x; = 0,015 µg/ ml – 1 x; <= 0,008 µg/ ml – 0 x.

Table Antimicrobial susceptibility testing of S. Choleraesuis in fattening pigs - Pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey - quantitative data [Dilution method]

S. Choleraesuis

Pigs - fattening pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey

Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	3

Antimicrobials:	**Break point**	**N**	**n**	**Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to**																		**lowest**	**highest**
				<=0.03	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**		
Aminoglycosides																							
Gentamicin	2	3	0					3														0.25	32
Kanamycin	16	3	0								3											4	128
Streptomycin	32	3	1										1	1			1					2	128
Amphenicols																							
Chloramphenicol	16	3	0							1	2											2	64
Florfenicol	16	3	0							2	1											2	64
Cephalosporins																							
Cefotaxim	0.5	3	0		2	1																0.06	4
Ceftazidim	2	3	0				3															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	3	0	3																		0.008	8
Penicillins																							
Ampicillin	4	3	0						2	1												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	3	0								2	1										4	64
Sulfonamides																							
Sulfonamide	256	3	1											2						1		8	1024
Tetracyclines																							
Tetracyclin	8	3	1							2						1						1	64


Trimethoprim
2
3
0
3
0.5
32

Table Antimicrobial susceptibility testing in S. Choleraesuis

n = Number of resistant isolates	S. Choleraesuis			
	Pigs		**Pigs - fattening pigs - baseline survey**	
Isolates out of a monitoring programme	no		yes	
Number of isolates available in the laboratory	6		3	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Gentamicin	6	0	3	0
Kanamycin	6	0	3	0
Streptomycin	6	0	3	1
Amphenicols				
Chloramphenicol	6	0	3	0
Florfenicol	6	0	3	0
Cephalosporins				
Cefotaxim	6	0	3	0
Ceftazidim	6	0	3	0
Fluoroquinolones				
Ciprofloxacin	6	1	3	0
Fully sensitive	6	5	3	2
Penicillins				
Ampicillin	6	0	3	0
Polymyxins				
Colistin	6	0	3	0
Quinolones				
Nalidixic acid	6	0	3	0
Resistant to 1 antimicrobial	6	1	3	0
Resistant to 2 antimicrobials	6	0	3	0
Resistant to 3 antimicrobials	6	0	3	1
Sulfonamides				
Sulfonamide	6	0	3	1
Tetracyclines				
Tetracyclin	6	0	3	1
Trimethoprim	6	0	3	0

Footnote

Pigs: Fully sensitive - 5 x; Cip resistance - 1 x; Pigs – fattening pigs – baseline survey: Fully sensitive - 2 x; SSuT resistance -1 x.

Table Antimicrobial susceptibility testing in S. Derby

n = Number of resistant isolates	S. Derby			
	Pigs - fattening pigs - baseline survey		**Gallus gallus (fowl) - laying hens**	
Isolates out of a monitoring programme	yes		yes	
Number of isolates available in the laboratory	5		1	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Gentamicin	5	0	1	0
Kanamycin	5	0	1	0
Streptomycin	5	0	1	0
Amphenicols				
Chloramphenicol	5	0	1	0
Florfenicol	5	0	1	0
Cephalosporins				
Cefotaxim	5	0	1	0
Ceftazidim	5	0	1	0
Fluoroquinolones				
Ciprofloxacin	5	0	1	0
Fully sensitive	5	5	1	1
Penicillins				
Ampicillin	5	0	1	0
Polymyxins				
Colistin	5	0	1	0
Quinolones				
Nalidixic acid	5	0	1	0
Sulfonamides				
Sulfonamide	5	0	1	0
Tetracyclines				
Tetracyclin	5	0	1	0
Trimethoprim	5	0	1	0

Table Antimicrobial susceptibility testing of S. Derby in fattening pigs - Pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey - quantitative data [Dilution method]

S. Derby

Pigs - fattening pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey

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

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	5	0				5															0.25	32
Kanamycin	16	5	0								5											4	128
Streptomycin	32	5	0								1	4										2	128
Amphenicols																							
Chloramphenicol	16	5	0								3	2										2	64
Florfenicol	16	5	0								3	2										2	64
Cephalosporins																							
Cefotaxim	0.5	5	0		3	2																0.06	4
Ceftazidim	2	5	0				3	2														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	5	0	5																		0.008	8
Penicillins																							
Ampicillin	4	5	0						3	2												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	5	0								5											4	64
Sulfonamides																							
Sulfonamide	256	5	0											1	4							8	1024
Tetracyclines																							
Tetracyclin	8	5	0							5												1	64


Trimethoprim
2
5
0
5
0.5
32

Table Antimicrobial susceptibility testing of S. Derby in meat products - Meat from pig - fermented sausages - at retail - imported - Monitoring - monitoring survey - quantitative data [Dilution method]

	S. Derby
	Meat from pig - meat products - fermented sausages - at retail - imported - Monitoring - monitoring survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	1	1												1							0.25	32
Kanamycin	16	1	0									1										4	128
Streptomycin	32	1	1														1					2	128
Amphenicols																							
Chloramphenicol	16	1	0								1											2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	0.06	4
Ceftazidim	2	1	0				1															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		0.008	8
Penicillins																							
Ampicillin	4	1	1												1							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	0												1							8	1024
Tetracyclines																							
Tetracyclin	8	1	1													1						1	64
Trimethoprim	2	1	0					1														0.5	32

Table Antimicrobial susceptibility testing in S. Derby

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

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

	S. Dublin
	Cattle (bovine animals) - unspecified - at farm - animal sample - Clinical investigations
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	4

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	4	0				3	1														0.25	32
Kanamycin	16	4	0								4											4	128
Streptomycin	32	4	0								1	3										2	128
Amphenicols																							
Chloramphenicol	16	4	0							2	1	1										2	64
Florfenicol	16	4	0							2	2											2	64
Cephalosporins																							
Cefotaxim	0.5	4	0		3		1															0.06	4
Ceftazidim	2	4	0				3	1														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	4	0	4																		0.008	8
Penicillins																							
Ampicillin	4	4	0						2	2												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	4	0								4											4	64
Sulfonamides																							
Sulfonamide	256	4	0											4								8	1024
Tetracyclines																							
Tetracyclin	8	4	0						4													1	64
Trimethoprim	2	4	0					4														0.5	32

Footnote

Ciprofloxacin: = 0,03 µg/ ml – 2 x; = 0,015 µg/ ml – 2 x; <= 0,008 µg/ ml – 0 x.

Table Antimicrobial susceptibility testing in S. Dublin

n = Number of resistant isolates	S. Dublin			
	Cattle (bovine animals)		**Cattle (bovine animals) - unspecified - at farm - Clinical investigations**	
Isolates out of a monitoring programme	no			
Number of isolates available in the laboratory	4			
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Gentamicin	4	0		
Kanamycin	4	0		
Streptomycin	4	0		
Amphenicols				
Chloramphenicol	4	0		
Florfenicol	4	0		
Cephalosporins				
Cefotaxim	4	0		
Ceftazidim	4	0		
Fluoroquinolones				
Ciprofloxacin	4	0		
Fully sensitive	4	4		
Penicillins				
Ampicillin	4	0		
Polymyxins	4	0		
Quinolones				
Nalidixic acid	4	0		
Sulfonamides				
Sulfonamide	4	0		
Tetracyclines				
Tetracyclin	4	0		
Trimethoprim	4	0		

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

	S. Enteritidis
	Gallus gallus (fowl) - laying hens - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	23

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	23	0				23															0.25	32
Kanamycin	16	23	0								23											4	128
Streptomycin	32	23	0							18	5											2	128
Amphenicols																							
Chloramphenicol	16	23	0							2	21											2	64
Florfenicol	16	23	0							3	20											2	64
Cephalosporins																							
Cefotaxim	0.5	23	0		14	9																0.06	4
Ceftazidim	2	23	0				23															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	23	0	23																		0.008	8
Penicillins																							
Ampicillin	4	23	0					1	5	17												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	23	0								22	1										4	64
Sulfonamides																							
Sulfonamide	256	23	0										1	22								8	1024
Tetracyclines																							
Tetracyclin	8	23	0						22	1												1	64
Trimethoprim	2	23	0					23														0.5	32

Footnote

Ciprofloxacin: = 0,03 µg/ ml – 19 x; = 0,015 µg/ ml – 4 x; <= 0,008 µg/ ml – 0 x.

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

	S. Enteritidis
	Pigs - fattening pigs - at slaughterhouse - animal sample - Surveillance
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	1	0				1															0.25	32
Kanamycin	16	1	0								1											4	128
Streptomycin	32	1	0							1												2	128
Amphenicols																							
Chloramphenicol	16	1	0								1											2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	0.06	4
Ceftazidim	2	1	0				1															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		0.008	8
Penicillins																							
Ampicillin	4	1	0							1												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	0												1							8	1024
Tetracyclines																							
Tetracyclin	8	1	0						1													1	64
Trimethoprim	2	1	0					1														0.5	32

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

	S. Enteritidis
	Geese - breeding flocks, unspecified - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	1	0				1															0.25	32
Kanamycin	16	1	0								1											4	128
Streptomycin	32	1	0											1								2	128
Amphenicols																							
Chloramphenicol	16	1	0								1											2	64
Florfenicol	16	1	0							1												2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	0.06	4
Ceftazidim	2	1	0				1															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		0.008	8
Penicillins																							
Ampicillin	4	1	0						1													0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	0									1										4	64
Sulfonamides																							
Sulfonamide	256	1	0											1								8	1024
Tetracyclines																							
Tetracyclin	8	1	0						1													1	64
Trimethoprim	2	1	0					1														0.5	32

Table Antimicrobial susceptibility testing of S. Enteritidis in fattening pigs - Pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey - quantitative data [Dilution method]

	S. Enteritidis
	Pigs - fattening pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	2

	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
Antimicrobials:	**Break point**	**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**
Aminoglycosides																							
Gentamicin	2	2	0				2															0.25	32
Kanamycin	16	2	0								2											4	128
Streptomycin	32	2	0							2												2	128
Amphenicols																							
Chloramphenicol	16	2	0							1	1											2	64
Florfenicol	16	2	0							1	1											2	64
Cephalosporins																							
Cefotaxim	0.5	2	0		2																	0.06	4
Ceftazidim	2	2	0				2															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	2	0	1	1																	0.008	8
Penicillins																							
Ampicillin	4	2	0						1	1												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	2	0								2											4	64
Sulfonamides																							
Sulfonamide	256	2	0												2							8	1024
Tetracyclines																							
Tetracyclin	8	2	0						1	1												1	64


Trimethoprim
2
2
0
2
0.5
32

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

	S. Enteritidis
	Cattle (bovine animals) - unspecified - at farm - animal sample - Clinical investigations
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	5

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	5	0				5															0.25	32
Kanamycin	16	5	0								5											4	128
Streptomycin	32	5	0							4	1											2	128
Amphenicols																							
Chloramphenicol	16	5	0								5											2	64
Florfenicol	16	5	0								5											2	64
Cephalosporins																							
Cefotaxim	0.5	5	0		3	2																0.06	4
Ceftazidim	2	5	0				5															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	5	0	5																		0.008	8
Penicillins																							
Ampicillin	4	5	0						4	1												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	5	0								5											4	64
Sulfonamides																							
Sulfonamide	256	5	0											5								8	1024
Tetracyclines																							
Tetracyclin	8	5	0						4	1												1	64
Trimethoprim	2	5	0					5														0.5	32

Footnote

Ciprofloxacin: = 0,03 µg/ ml – 2 x; = 0,015 µg/ ml – 3 x; <= 0,008 µg/ ml – 0 x.

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

S. Enteritidis

Ducks - breeding flocks, unspecified - hatching eggs - at purification centre - Monitoring

Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	1	0						1													0.25	32
Kanamycin	16	1	0								1											4	128
Streptomycin	32	1	0								1											2	128
Amphenicols																							
Chloramphenicol	16	1	0							1												2	64
Florfenicol	16	1	0							1												2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	0.06	4
Ceftazidim	2	1	0				1															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		0.008	8
Penicillins																							
Ampicillin	4	1	0						1													0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	0												1							8	1024
Tetracyclines																							
Tetracyclin	8	1	0						1													1	64
Trimethoprim	2	1	0					1														0.5	32

Table Antimicrobial susceptibility testing of S.Enteritidis in animals

n = Number of resistant isolates

S. Enteritidis

	Pigs - fattening pigs - baseline survey		Ducks		Geese		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers	
Isolates out of a monitoring programme	yes		yes		yes		no		no						yes		yes	
Number of isolates available in the laboratory	2		1		1		5		1						23		56	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides																		
Gentamicin	2	0	1	0	1	0	5	0	1	0					23	0	56	0
Kanamycin	2	0	5	0	1	0	5	0	1	0					23	0	56	0
Streptomycin	2	0	5	0	1	0	5	0	1	0					23	0	56	0
Amphenicols																		
Chloramphenicol	2	0	5	0	1	0	5	0	1	0					23	0	56	0
Florfenicol	2	0	5	0	1	0	5	0	1	0					23	0	56	0
Cephalosporins																		
Cefotaxim	2	0	1	0	1	0	5	0	1	0					23	0	56	0
Ceftazidim	2	0	1	0	1	0	5	0	1	0					23	0	56	0
Fluoroquinolones																		
Ciprofloxacin	2	0	1	0	1	0	5	0	1	0					23	0	56	1
Fully sensitive	2	2	1	1	1	1	5	5	1	1					23	23	56	55
Number of multiresistant isolates	2	0	1	0	1	0	5	0	1	0					23	0	56	0
Penicillins																		
Ampicillin	2	0	1	0	1	0	5	0	1	0					23	0	56	0
Polymyxins																		
Quinolones																		
Nalidixic acid	2	0	1	0	1	0	5	0	1	0					23	0	56	1
Resistant to 1 antimicrobial	2	0	1	0	1	0	5	0	1	0					23	0	56	0

Resistant to 2 antimicrobials	2	0	1	0	1	0	5	0	1	0					23	0	56	1
Resistant to 3 antimicrobials	2	0	1	0	1	0	5	0	1	0					23	0	56	0
Resistant to 4 antimicrobials	2	0	1	0	1	0	5	0	1	0					23	0	56	0
Resistant to >4 antimicrobials	2	0	1	0	1	0	5	0	1	0					23	0	56	0
Sulfonamides																		
Sulfonamide	2	0	1	0	1	0	5	0	1	0					23	0	56	0
Tetracyclines																		
Tetracyclin	2	0	1	0	1	0	5	0	1	0					23	0	56	0
Trimethoprim	2	0	1	0	1	0	5	0	1	0					23	0	56	0

Footnote

Broilers: Fully sensitive - 55 x; NxCip resistance - 1 x; Other categories: Fully sensitive - All isolates.

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

	S. Enteritidis
	Gallus gallus (fowl) - broilers - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	56

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	56	0				56															0.25	32
Kanamycin	16	56	0								56											4	128
Streptomycin	32	56	0							45	11											2	128
Amphenicols																							
Chloramphenicol	16	56	0							5	51											2	64
Florfenicol	16	56	0							5	51											2	64
Cephalosporins																							
Cefotaxim	0.5	56	0		47	9																0.06	4
Ceftazidim	2	56	0				54	2														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	56	1	54	1	1																0.008	8
Penicillins																							
Ampicillin	4	56	0						18	38												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	56	1								55					1						4	64
Sulfonamides																							
Sulfonamide	256	56	0										3	50	3							8	1024
Tetracyclines																							
Tetracyclin	8	56	0						53	3												1	64
Trimethoprim	2	56	0					56														0.5	32

Footnote

Ciprofloxacin: = 0,03 µg/ ml – 44 x; = 0,015 µg/ ml – 10 x; <= 0,008 µg/ ml – 0 x.

Table Antimicrobial susceptibility testing of S. Enteritidis in fresh - Meat from bovine animals - chilled - at slaughterhouse - animal sample - Surveillance - surveillance survey - quantitative data [Dilution method]

	S. Enteritidis
	Meat from bovine animals - fresh - chilled - at slaughterhouse - animal sample - Surveillance - surveillance survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	4

Antimicrobials:	**Break point**	**N**	**n**	**Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to**																		**lowest**	**highest**
				<=0.03	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**		
Aminoglycosides																							
Gentamicin	2	4	0				4															0.25	32
Kanamycin	16	4	0								4											4	128
Streptomycin	32	4	0								4											2	128
Amphenicols																							
Chloramphenicol	16	4	0								4											2	64
Florfenicol	16	4	0								4											2	64
Cephalosporins																							
Cefotaxim	0.5	4	0			3	1															0.06	4
Ceftazidim	2	4	0				4															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	4	0	4																		0.008	8
Penicillins																							
Ampicillin	4	4	0							4												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	4	0								4											4	64
Sulfonamides																							
Sulfonamide	256	4	0											4								8	1024
Tetracyclines																							
Tetracyclin	8	4	0						2	2												1	64
Trimethoprim	2	4	0					4														0.5	32

Table Antimicrobial susceptibility testing of S. Enteritidis in table eggs - Eggs - shell - at packing centre - Monitoring - monitoring survey - quantitative data [Dilution method]

S. Enteritidis

Eggs - table eggs - shell - at packing centre - Monitoring - monitoring survey

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

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	2	0				2															0.25	32
Kanamycin	16	2	0								2											4	128
Streptomycin	32	2	0							2												2	128
Amphenicols																							
Chloramphenicol	16	2	0								2											2	64
Florfenicol	16	2	0								2											2	64
Cephalosporins																							
Cefotaxim	0.5	2	0		2																	0.06	4
Ceftazidim	2	2	0				2															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	2	0	2																		0.008	8
Penicillins																							
Ampicillin	4	2	0						1	1												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	2	0								2											4	64
Sulfonamides																							
Sulfonamide	256	2	0												2							8	1024
Tetracyclines																							
Tetracyclin	8	2	0						2													1	64
Trimethoprim	2	2	0					2														0.5	32

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

	S. Enteritidis
	Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - in total - Surveillance - surveillance survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	7

Antimicrobials:	**Break point**	**N**	**n**	**Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to**																		**lowest**	**highest**
				<=0.03	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**		
Aminoglycosides																							
Gentamicin	2	7	0				6	1														0.25	32
Kanamycin	16	7	0								7											4	128
Streptomycin	32	7	0							3	4											2	128
Amphenicols																							
Chloramphenicol	16	7	0								7											2	64
Florfenicol	16	7	0								7											2	64
Cephalosporins																							
Cefotaxim	0.5	7	0		6	1																0.06	4
Ceftazidim	2	7	0				7															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	7	1	5	1		1															0.008	8
Penicillins																							
Ampicillin	4	7	0						5	2												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	7	1								6					1						4	64
Sulfonamides																							
Sulfonamide	256	7	0										1	6								8	1024
Tetracyclines																							
Tetracyclin	8	7	0						6	1												1	64


Trimethoprim
2
7
0
7
0.5
32

Table Antimicrobial susceptibility testing in S. Enteritidis

n = Number of resistant isolates	S. Enteritidis					
	Eggs		**Meat from broilers (Gallus gallus)**		**Meat from bovine animals**	
Isolates out of a monitoring programme	yes		yes		yes	
Number of isolates available in the laboratory	2		7		4	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides						
Gentamicin	2	0	7	0	4	0
Kanamycin	2	0	7	0	4	0
Streptomycin	2	0	7	0	4	0
Amphenicols						
Chloramphenicol	2	0	7	0	4	0
Florfenicol	2	0	7	0	4	0
Cephalosporins						
Cefotaxim	2	0	7	0	4	0
Ceftazidim	2	0	7	0	4	0
Fluoroquinolones						
Ciprofloxacin	2	0	7	1	4	0
Fully sensitive	2	2	7	6	4	4
Penicillins						
Ampicillin	2	0	7	0	4	0
Polymyxins						
Colistin	2	0	7	0	4	0
Quinolones						
Nalidixic acid	2	0	7	1	4	0
Resistant to 1 antimicrobial	2	0	7	0	4	0
Resistant to 2 antimicrobials	2	0	7	1	4	0
Resistant to 3 antimicrobials	2	0	7	0	4	0
Resistant to 4 antimicrobials	2	0	7	0	4	0
Resistant to >4 antimicrobials	2	0	7	0	4	0
Sulfonamides						
Sulfonamide	2	0	7	0	4	0
Tetracyclines						
Tetracyclin	2	0	7	0	4	0
Trimethoprim	2	0	7	0	4	0

Table Antimicrobial susceptibility testing of S. Enteritidis - qualitative data

n = Number of resistant isolates

S. Enteritidis

	Compound feedingstuffs for poultry - laying hens		Compund feedingstuffs for poultry - broilers		Other feed material - straws		Feed material of land animal origin - poultry offal meal		Compound feedingstuffs for cattle		Compound feedingstuffs for pigs		Compound feedingstuffs for poultry (non specified)	
Isolates out of a monitoring programme	yes		yes		no		yes							
Number of isolates available in the laboratory	1		1		1		1							
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides														
Gentamicin	1	0	1	0	1	0	1	0						
Kanamycin	1	0	1	0	1	0	1	0						
Streptomycin	1	0	1	0	1	0	1	0						
Amphenicols														
Chloramphenicol	1	0	1	0	1	0	1	0						
Florfenicol	1	0	1	0	1	0	1	0						
Cephalosporins														
Cefotaxim	1	0	1	0	1	0	1	0						
Ceftazidim	1	0	1	0	1	0	1	0						
Fluoroquinolones														
Ciprofloxacin	1	0	1	0	1	0	1	0						
Penicillins														
Ampicillin	1	0	1	0	1	0	1	0						
Polymyxins														
Quinolones														
Nalidixic acid	1	0	1	0	1	0	1	0						
Sulfonamides														
Sulfonamide	1	0	1	0	1	0	1	0						
Tetracyclines														
Tetracyclin	1	0	1	0	1	0	1	0						
Trimethoprim	1	0	1	0	1	0	1	0						

Table Antimicrobial susceptibility testing of S. Enteritidis in Compound feedingstuffs for poultry (non specified) - at farm - feed sample - Monitoring - quantitative data [Dilution method]

	S. Enteritidis
	Compound feedingstuffs for poultry (non specified) - at farm - feed sample - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	2

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	2	0				2															0.25	32
Kanamycin	16	4	0							4												4	128
Streptomycin	32	2	0							2												2	128
Amphenicols																							
Chloramphenicol	16	2	0								2											2	64
Florfenicol	16	2	0								2											2	64
Cephalosporins																							
Cefotaxim	0.5	2	0		2																	0.06	4
Ceftazidim	2	2	0				2															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	2	0	2																		0.008	8
Penicillins																							
Ampicillin	4	2	0						1	1												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	2	0								2											4	64
Sulfonamides																							
Sulfonamide	256	2	0											1	1							8	1024
Tetracyclines																							
Tetracyclin	8	2	0						1	1												1	64
Trimethoprim	2	2	0					2														0.5	32

Table Antimicrobial susceptibility testing in S. Hadar

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

Footnote

Ducks: ST resistance - 1 x.

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

	S. Hadar
	Ducks - unspecified - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	1	0						1													0.25	32
Kanamycin	16	1	0								1											4	128
Streptomycin	32	1	1												1							2	128
Amphenicols																							
Chloramphenicol	16	1	0							1												2	64
Florfenicol	16	1	0							1												2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	0.06	4
Ceftazidim	2	1	0				1															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		0.008	8
Penicillins																							
Ampicillin	4	1	0						1													0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	0												1							8	1024
Tetracyclines																							
Tetracyclin	8	1	1												1							1	64
Trimethoprim	2	1	0					1														0.5	32

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

	S. Indiana
	Ducks - unspecified - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	2

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	2	0				1		1													0.25	32
Kanamycin	16	2	0								2											4	128
Streptomycin	32	2	1											1	1							2	128
Amphenicols																							
Chloramphenicol	16	2	0								2											2	64
Florfenicol	16	2	0							2												2	64
Cephalosporins																							
Cefotaxim	0.5	2	0		2																	0.06	4
Ceftazidim	2	2	0				2															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	2	0	2																		0.008	8
Penicillins																							
Ampicillin	4	2	0					2														0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	2	0								2											4	64
Sulfonamides																							
Sulfonamide	256	2	1										1							1		8	1024
Tetracyclines																							
Tetracyclin	8	2	1						1							1						1	64
Trimethoprim	2	2	0					2														0.5	32

Footnote

SuT resistance 1 x, Fully sensitive 1 x.
Ciprofloxacin: = 0,03 µg/ ml – 1 x; = 0,015 µg/ ml – 1 x; <= 0,008 µg/ ml – 0 x.

Table Antimicrobial susceptibility testing in S. Indiana

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

Footnote

Ducks: Fully sensitive - 1 x; SuT resistance 1 x; Turkeys: SuTK resistance - 1 x.

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

	S. Infantis
	Pheasants - meat production flocks - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	1	0				1															0.25	32
Kanamycin	16	1	0								1											4	128
Streptomycin	32	1	0										1									2	128
Amphenicols																							
Chloramphenicol	16	1	0									1										2	64
Florfenicol	16	1	0									1										2	64
Cephalosporins																							
Cefotaxim	0.5	1	0				1															0.06	4
Ceftazidim	2	1	0						1													0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	1									1										0.008	8
Penicillins																							
Ampicillin	4	1	0							1												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	1													1						4	64
Sulfonamides																							
Sulfonamide	256	1	1																	1		8	1024
Tetracyclines																							
Tetracyclin	8	1	1													1						1	64
Trimethoprim	2	1	0					1														0.5	32

Table Antimicrobial susceptibility testing of S. Infantis in fattening pigs - Pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey - quantitative data [Dilution method]

S. Infantis

Pigs - fattening pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey

Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	**Break point**	**N**	**n**	**Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to**																			
				<=0.03	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	1	0				1															0.25	32
Kanamycin	16	1	0								1											4	128
Streptomycin	32	1	0								1											2	128
Amphenicols																							
Chloramphenicol	16	1	0								1											2	64
Florfenicol	16	1	0							1												2	64
Cephalosporins																							
Cefotaxim	0.5	1	0				1															0.06	4
Ceftazidim	2	1	0					1														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		0.008	8
Penicillins																							
Ampicillin	4	1	0							1												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	0									1										4	64
Sulfonamides																							
Sulfonamide	256	1	0												1							8	1024
Tetracyclines																							
Tetracyclin	8	1	1													1						1	64


Trimethoprim
2
1
0
1
0.5
32

Table Antimicrobial susceptibility testing in S. Infantis

n = Number of resistant isolates	S. Infantis							
	Pheasants		**Pigs - fattening pigs - baseline survey**		**Gallus gallus (fowl) - broilers**		**Gallus gallus (fowl) - laying hens**	
Isolates out of a monitoring programme	yes		yes		yes		yes	
Number of isolates available in the laboratory	1		1		10		1	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides								
Gentamicin	1	0	1	0	10	0	1	0
Kanamycin	1	0	1	0	10	0	1	0
Streptomycin	1	0	1	0	10	0	1	0
Amphenicols								
Chloramphenicol	1	0	1	0	10	0	1	0
Florfenicol	1	0	1	0	10	0	1	0
Cephalosporins								
Cefotaxim	1	0	1	0	10	0	1	0
Ceftazidim	1	0	1	0	10	0	1	0
Fluoroquinolones								
Ciprofloxacin	1	1	1	0	10	8	1	0
Fully sensitive	1	0	1	0	10	2	1	1
Penicillins								
Ampicillin	1	0	1	0	10	0	1	0
Polymyxins								
Colistin	1	0	1	0	10	0	1	0
Quinolones								
Nalidixic acid	1	1	1	0	10	8	1	0
Resistant to 1 antimicrobial	1	0	1	1	10	0	1	0
Resistant to 2 antimicrobials	1	0	1	0	10	2	1	0
Resistant to 3 antimicrobials	1	0	1	0	10	0	1	0
Resistant to 4 antimicrobials	1	1	1	0	10	6	1	0
Sulfonamides								
Sulfonamide	1	1	1	0	10	6	1	0
Tetracyclines								
Tetracyclin	1	1	1	1	10	6	1	0
Trimethoprim	1	0	1	0	10	0	1	0

Footnote

Gallus gallus (fowl) - broilers: Fully sensitive 2 x, NxCip resistance 2 x, SuTNxCip resistance 6 x; Gallus gallus (fowl) - laying hens: Fully sensitive 1 x; Pheasants: SuTNxCip resistance 1 x; Pigs - fattening pigs - baseline survey: T resistance 1 x.

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

	S. Infantis
	Gallus gallus (fowl) - broilers - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	10

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	10	0				10															0.25	32
Kanamycin	16	10	0								10											4	128
Streptomycin	32	10	0									3	1	6								2	128
Amphenicols																							
Chloramphenicol	16	10	0								7	3										2	64
Florfenicol	16	10	0								8	2										2	64
Cephalosporins																							
Cefotaxim	0.5	10	0			10																0.06	4
Ceftazidim	2	10	0				1	9														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	10	8	2				8														0.008	8
Penicillins																							
Ampicillin	4	10	0						4	6												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	10	8								2					8						4	64
Sulfonamides																							
Sulfonamide	256	10	6						1	1	2									6		8	1024
Tetracyclines																							
Tetracyclin	8	10	6						2	2						6						1	64
Trimethoprim	2	10	0					10														0.5	32

Footnote

Fully sensitive 2 x, NxCip resistance 2 x, SuTNxCip resistance 6 x;
Ciprofloxacin: = 0,03 µg/ ml – 0 x; = 0,015 µg/ ml – 2 x; <= 0,008 µg/ ml – 0 x.

Table Antimicrobial susceptibility testing of S. Infantis in meat preparation - Meat from poultry, unspecified - intended to be eaten cooked - at retail - imported - Monitoring - monitoring survey - quantitative data [Dilution method]

	S. Infantis
	Meat from poultry, unspecified - meat preparation - intended to be eaten cooked - at retail - imported - Monitoring - monitoring survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	**Break point**	**N**	**n**	**Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to**																	**lowest**	**highest**
				<=0.03	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	
Aminoglycosides																						
Gentamicin	2	1	0				1														0.25	32
Kanamycin	16	1	0								1										4	128
Streptomycin	32	1	0								1										2	128
Amphenicols																						
Chloramphenicol	16	1	0								1										2	64
Florfenicol	16	1	0								1										2	64
Cephalosporins																						
Cefotaxim	0.5	1	0			1															0.06	4
Ceftazidim	2	1	0					1													0.25	16
Fluoroquinolones																						
Ciprofloxacin	0.06	1	1						1												0.008	8
Penicillins																						
Ampicillin	4	1	0							1											0.5	32
Polymyxins	0																					
Quinolones																						
Nalidixic acid	16	1	1													1					4	64
Sulfonamides																						
Sulfonamide	256	1	0											1							8	1024
Tetracyclines																						
Tetracyclin	8	1	0							1											1	64


Trimethoprim
2
1
0
1
0.5
32

Table Antimicrobial susceptibility testing in S. Infantis

n = Number of resistant isolates	S. Infantis			
	Meat from broilers (Gallus gallus)		**Meat from bovine animals**	
Isolates out of a monitoring programme	yes		yes	
Number of isolates available in the laboratory	1		2	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Gentamicin	1	0	2	0
Kanamycin	1	0	2	0
Streptomycin	1	0	2	0
Amphenicols				
Chloramphenicol	1	0	2	0
Florfenicol	1	0	2	0
Cephalosporins				
Cefotaxim	1	0	2	0
Ceftazidim	1	0	2	0
Fluoroquinolones				
Ciprofloxacin	1	1	2	2
Fully sensitive	1	0	2	0
Penicillins				
Ampicillin	1	0	2	0
Polymyxins				
Colistin	1	0	2	0
Quinolones				
Nalidixic acid	1	1	2	2
Resistant to 1 antimicrobial	1	0	2	0
Resistant to 2 antimicrobials	1	1	2	0
Resistant to 3 antimicrobials	1	0	2	0
Resistant to 4 antimicrobials	1	0	2	2
Resistant to >4 antimicrobials	1	0	2	0
Sulfonamides				
Sulfonamide	1	0	2	2
Tetracyclines				
Tetracyclin	1	0	2	2
Trimethoprim	1	0	2	0

Table Antimicrobial susceptibility testing in S. Kiambu

n = Number of resistant isolates	S. Kiambu			
	Turkeys - meat production flocks - baseline survey		**Turkeys**	
Isolates out of a monitoring programme	yes		yes	
Number of isolates available in the laboratory	2		1	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Gentamicin	2	2	1	1
Kanamycin	2	0	1	0
Streptomycin	2	2	1	1
Amphenicols				
Chloramphenicol	2	2	1	1
Florfenicol	2	0	1	0
Cephalosporins				
Cefotaxim	2	0	1	0
Ceftazidim	2	0	1	0
Fluoroquinolones				
Ciprofloxacin	2	2	1	1
Fully sensitive	2	0	1	0
Penicillins				
Ampicillin	2	2	1	1
Polymyxins				
Colistin	2	0	1	0
Quinolones				
Nalidixic acid	2	2	1	1
Resistant to 1 antimicrobial	2	0	1	0
Resistant to 2 antimicrobials	2	0	1	0
Resistant to 3 antimicrobials	2	0	1	0
Resistant to 4 antimicrobials	2	0	1	0
Resistant to >4 antimicrobials	2	2	1	1
Sulfonamides				
Sulfonamide	2	0	1	0
Tetracyclines				
Tetracyclin	2	2	1	1
Trimethoprim	2	2	1	1

Footnote

Turkeys - meat production flocks - baseline survey: ACSTGNxCip resistance - 2 x; Turkeys: ACSTGNxCip resistance - 1 x.

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

S. Kiambu

Turkeys - meat production flocks - baseline survey - at farm - Monitoring - monitoring survey

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

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	2	2											2								0.25	32
Kanamycin	16	2	0									2										4	128
Streptomycin	32	2	2													2						2	128
Amphenicols																							
Chloramphenicol	16	2	2													2						2	64
Florfenicol	16	2	0								2											2	64
Cephalosporins																							
Cefotaxim	4	2	0			2																0.06	4
Ceftazidim	2	2	0					2														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	2	2							2												0.008	8
Penicillins																							
Ampicillin	4	2	2												2							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	2	2													2						4	64
Sulfonamides																							
Sulfonamide	256	2	0											2								8	1024
Tetracyclines																							
Tetracyclin	8	2	2												1	1						1	64
Trimethoprim	2	2	0					2														0.5	32

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

	S. Kottbus
	Ducks - unspecified - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	3

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	3	0				3															0.25	32
Kanamycin	16	3	0								3											4	128
Streptomycin	32	3	0								3											2	128
Amphenicols																							
Chloramphenicol	16	3	0							3												2	64
Florfenicol	16	3	0							3												2	64
Cephalosporins																							
Cefotaxim	0.5	3	0		3																	0.06	4
Ceftazidim	2	3	0				3															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	3	2	1		1	1															0.008	8
Penicillins																							
Ampicillin	4	3	1						2						1							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	3	2								1					2						4	64
Sulfonamides																							
Sulfonamide	256	3	0										1	2								8	1024
Tetracyclines																							
Tetracyclin	8	3	0						3													1	64
Trimethoprim	2	3	0					3														0.5	32

Footnote

NxCip resistance 2 x, A resistance 1 x.
Ciprofloxacin: = 0,03 µg/ ml – 0 x; = 0,015 µg/ ml – 1 x; <= 0,008 µg/ ml – 0 x.

Table Antimicrobial susceptibility testing in S. Kottbus

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

Footnote

Ducks: A resistance 1 x; NxCip resistance - 2 x.

Table Antimicrobial susceptibility testing in S. Montevideo

n = Number of resistant isolates	S. Montevideo			
	Meat from pig		**Meat from bovine animals**	
Isolates out of a monitoring programme	yes		yes	
Number of isolates available in the laboratory	1		1	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Gentamicin	1	0	1	0
Kanamycin	1	0	1	0
Streptomycin	1	0	1	0
Amphenicols				
Chloramphenicol	1	0	1	0
Florfenicol	1	0	1	0
Cephalosporins				
Cefotaxim	1	0	1	0
Ceftazidim	1	0	1	0
Fluoroquinolones				
Ciprofloxacin	1	0	1	0
Fully sensitive	1	1	1	1
Penicillins				
Ampicillin	1	0	1	0
Polymyxins				
Colistin	1	0	1	0
Quinolones				
Nalidixic acid	1	0	1	0
Resistant to 1 antimicrobial	1	0	1	0
Resistant to 2 antimicrobials	1	0	1	0
Resistant to 3 antimicrobials	1	0	1	0
Resistant to 4 antimicrobials	1	0	1	0
Resistant to >4 antimicrobials	1	0	1	0
Sulfonamides				
Sulfonamide	1	0	1	0
Tetracyclines				
Tetracyclin	1	0	1	0
Trimethoprim	1	0	1	0

Table Antimicrobial susceptibility testing of S. Saintpaul in breeding flocks, unspecified - Turkeys - baseline survey - at farm - Monitoring - monitoring survey - quantitative data [Dilution method]

	S. Saintpaul
	Turkeys - breeding flocks, unspecified - baseline survey - at farm - Monitoring - monitoring survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	17

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	17	0				15	2														0.25	32
Kanamycin	16	17	0								17											4	128
Streptomycin	32	17	1							1	1		5	9			1					2	128
Amphenicols																							
Chloramphenicol	16	17	0								9	8										2	64
Florfenicol	16	17	0								16	1										2	64
Cephalosporins																							
Cefotaxim	0.5	17	0		9	8																0.06	4
Ceftazidim	2	17	0				14	3														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	17	2	15			2															0.008	8
Penicillins																							
Ampicillin	4	17	13						4						13							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	17	2								14	1				2						4	64
Sulfonamides																							
Sulfonamide	256	17	15										2							15		8	1024
Tetracyclines																							
Tetracyclin	8	17	15						1	1						15						1	64
Trimethoprim	2	17	8					9							8							0.5	32

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

	S. Saintpaul
	Turkeys - meat production flocks - baseline survey - at farm - Monitoring - monitoring survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	4

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	4	0				4															0.25	32
Kanamycin	16	4	0								4											4	128
Streptomycin	32	4	0										3	1								2	128
Amphenicols																							
Chloramphenicol	16	4	0								3	1										2	64
Florfenicol	16	4	0								4											2	64
Cephalosporins																							
Cefotaxim	0.5	4	0		4																	0.06	4
Ceftazidim	2	4	0				4															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	4	0	4																		0.008	8
Penicillins																							
Ampicillin	4	4	0						3	1												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	4	0								4											4	64
Sulfonamides																							
Sulfonamide	256	4	4																	4		8	1024
Tetracyclines																							
Tetracyclin	8	4	4													4						1	64
Trimethoprim	2	4	0					4														0.5	32

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

	S. Saintpaul
	Turkeys - unspecified - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	13

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	13	0				12	1														0.25	32
Kanamycin	16	13	0								13											4	128
Streptomycin	32	13	0								2	1	8	2								2	128
Amphenicols																							
Chloramphenicol	16	13	0								13											2	64
Florfenicol	16	13	0								13											2	64
Cephalosporins																							
Cefotaxim	0.5	13	0		5	8																0.06	4
Ceftazidim	2	13	0				10	3														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	13	3	10			2	1														0.008	8
Penicillins																							
Ampicillin	4	13	3						2	8					3							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	13	3								10					3						4	64
Sulfonamides																							
Sulfonamide	256	13	10										3							10		8	1024
Tetracyclines																							
Tetracyclin	8	13	10						2	1						10						1	64
Trimethoprim	2	13	3					9	1						3							0.5	32

Footnote

SuT resistance - 7 x, NxCip resistance - 3 x, ASuTW resistance - 3 x.
Ciprofloxacin: = 0,03 µg/ ml – 10 x; = 0,015 µg/ ml – 0 x; <= 0,008 µg/ ml – 0 x.

Table Antimicrobial susceptibility testing in S. Saintpaul

n = Number of resistant isolates	S. Saintpaul					
	Turkeys - breeding flocks, unspecified - baseline survey		**Turkeys - meat production flocks - baseline survey**		**Turkeys**	
Isolates out of a monitoring programme	yes		yes		yes	
Number of isolates available in the laboratory	17		4		13	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides						
Gentamicin	18	0	3	0	13	0
Kanamycin	18	0	3	0	13	0
Streptomycin	18	1	3	0	13	0
Amphenicols						
Chloramphenicol	17	0	4	0	13	0
Florfenicol	17	0	4	0	13	0
Cephalosporins						
Cefotaxim	17	0	4	0	13	0
Ceftazidim	17	0	4	0	13	0
Fluoroquinolones						
Ciprofloxacin	17	2	4	0	13	3
Fully sensitive	17	0	4	0	13	0
Penicillins						
Ampicillin	17	13	4	0	13	3
Polymyxins						
Colistin	17	0	4	0	13	0
Quinolones						
Nalidixic acid	17	2	4	0	13	3
Resistant to 1 antimicrobial	17	0	4	0	13	0
Resistant to 2 antimicrobials	17	4	4	4	13	10
Resistant to 3 antimicrobials	17	4	4	0	13	0
Resistant to 4 antimicrobials	17	9	4	0	13	3
Resistant to >4 antimicrobials	17	0	4	0	13	0
Sulfonamides						
Sulfonamide	17	15	4	4	13	10
Tetracyclines						
Tetracyclin	17	15	4	4	13	10
Trimethoprim	17	8	4	0	13	3

Footnote

Turkeys - breeding flocks - baseline survey: NxCip resistance - 2 x; SuT resistance - 2 x; ASuT resistance - 4 x; ASSuT resistance - 1 x; ASuTW resistance - 8 x; Turkeys - meat production flocks - baseline survey: SuT resistance - 4 x; Turkeys - unspecified - monitoring: NxCip resistance - 3 x; SuT resistance - 7 x; ASuTW resistance 3 x.

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

	S. Typhimurium
	Ducks - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	3

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	3	0				1		2													0.25	32
Kanamycin	16	3	0								3											4	128
Streptomycin	32	3	1										2		1							2	128
Amphenicols																							
Chloramphenicol	16	3	1							2						1						2	64
Florfenicol	16	3	1							2						1						2	64
Cephalosporins																							
Cefotaxim	0.5	3	0		3																	0.06	4
Ceftazidim	2	3	0				3															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	3	0	3																		0.008	8
Penicillins																							
Ampicillin	4	3	1						2						1							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	3	0								3											4	64
Sulfonamides																							
Sulfonamide	256	3	1								2									1		8	1024
Tetracyclines																							
Tetracyclin	8	3	1						2					1								1	64
Trimethoprim	2	3	0					3														0.5	32

Table Antimicrobial susceptibility testing of S.Typhimurium in animals

n = Number of resistant isolates

S. Typhimurium

	Pigs - fattening pigs - baseline survey		Ducks		Solipeds, domestic - horses		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers		Turkeys - breeding flocks, unspecified - baseline survey	
Isolates out of a monitoring programme	yes		yes		no		no		no								yes			
Number of isolates available in the laboratory	4		3		1		7		7								9			
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides																				
Gentamicin	4	0	3	0	1	0	7	0	7	0							9	0		
Kanamycin	4	0	3	0	1	0	7	1	7	0							9	0		
Streptomycin	4	0	3	1	1	0	7	2	7	3							9	0		
Amphenicols																				
Chloramphenicol	4	0	3	1	1	0	7	2	7	1							9	0		
Florfenicol	4	0	3	1	1	0	7	2	7	1							9	0		
Cephalosporins																				
Cefotaxim	4	0	3	0	1	0	7	0	7	0							9	0		
Ceftazidim	4	0	3	0	1	0	7	0	7	0							9	0		
Fluoroquinolones																				
Ciprofloxacin	4	0	3	0	1	0	7	1	7	0							9	0		
Fully sensitive	4	4	3	2	1	0	7	1	7	2							9	8		
Number of multiresistant S. Typhimurium DT104																				
resistant to other antimicrobials	4	0	3	1	1	0	7	2	7	1							9	0		
with penta resistance	4	0	3	1	1	0	7	1	7	1							9	0		
Number of multiresistant isolates	4	0	3	1	1	0	7	2	7	1							9	0		

Penicillins																				
Ampicillin	4	0	3	1	1	1	7	4	7	4							9	1		
Polymyxins																				
Quinolones																				
Nalidixic acid	4	0	3	0	1	0	7	1	7	0							9	0		
Resistant to 1 antimicrobial	4	0	3	0	1	0	7	2	7	0							9	1		
Resistant to 2 antimicrobials	4	0	3	0	1	0	7	1	7	2							9	0		
Resistant to 3 antimicrobials	4	0	3	0	1	0	7	1	7	0							9	0		
Resistant to 4 antimicrobials	4	0	3	0	1	1	7	0	7	2							9	0		
Resistant to >4 antimicrobials	4	0	3	1	1	0	7	2	7	1							9	0		
Sulfonamides																				
Sulfonamide	4	0	3	1	1	1	7	2	7	4							9	0		
Tetracyclines																				
Tetracyclin	4	0	3	1	1	1	7	5	7	5							9	0		
Trimethoprim	4	0	3	0	1	1	7	0	7	0							9	0		

Footnote

Cattle: Fully sensitive 1x, A resistance 1x, T resistance 1x, ST resistance 1x, ATK resistance 1x, ACSSuTF resistance 1x, ACSuTFNxCip resistance 1x; Pigs: Fully sensitive 2x, AT resistance 1x, SuT resistance 1x, ASSuT resistance 2x, ACSSuTF resistance 1x; Pigs - fattening pigs - baseline survey: Fully sensitive 4x; Gallus gallus (fowl) - broilers: Fully sensitive 8x, A resistance 1x; Ducks: Fully sensitive 2x, ACSSuTF resistance 1x; Solipeds, domestic - horses: ASuTW resistance 1x. Phagetyping of multiresistant strains was not performed.

Table Antimicrobial susceptibility testing of S. Typhimurium in fattening pigs - Pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey - quantitative data [Dilution method]

	S. Typhimurium
	Pigs - fattening pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	4

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	4	0				1	3														0.25	32
Kanamycin	16	4	0								4											4	128
Streptomycin	32	4	0									4										2	128
Amphenicols																							
Chloramphenicol	16	4	0							3	1											2	64
Florfenicol	16	4	0							3	1											2	64
Cephalosporins																							
Cefotaxim	0.5	4	0		3	1																0.06	4
Ceftazidim	2	4	0				4															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	4	0	3	1																	0.008	8
Penicillins																							
Ampicillin	4	4	0						4													0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	4	0								3	1										4	64
Sulfonamides																							
Sulfonamide	256	4	0									3	1									8	1024
Tetracyclines																							
Tetracyclin	8	4	0						2	2												1	64


Trimethoprim
2
4
0
4
0.5
32

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

	S. Typhimurium
	Gallus gallus (fowl) - broilers - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	9

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	9	0				1	7	1													0.25	32
Kanamycin	16	9	0								9											4	128
Streptomycin	32	9	0									9										2	128
Amphenicols																							
Chloramphenicol	16	9	0								9											2	64
Florfenicol	16	9	0								9											2	64
Cephalosporins																							
Cefotaxim	0.5	9	0		3	6																0.06	4
Ceftazidim	2	9	0				9															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	9	0	9																		0.008	8
Penicillins																							
Ampicillin	4	9	1						2	6					1							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	9	0								8	1										4	64
Sulfonamides																							
Sulfonamide	256	9	0										1	7	1							8	1024
Tetracyclines																							
Tetracyclin	8	9	0						7	2												1	64
Trimethoprim	2	9	0					9														0.5	32

Footnote

Ciprofloxacin: = 0,03 µg/ ml – 3 x; = 0,015 µg/ ml – 6 x; <= 0,008 µg/ ml – 0 x.

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

	S. Typhimurium
	Cattle (bovine animals) - unspecified - at farm - animal sample - Clinical investigations
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	7

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	7	0				3	4														0.25	32
Kanamycin	16	7	1								6						1					4	128
Streptomycin	32	7	2									3	1	1	2							2	128
Amphenicols																							
Chloramphenicol	16	7	2								5					2						2	64
Florfenicol	16	7	2								5			1		1						2	64
Cephalosporins																							
Cefotaxim	0.5	7	0		7																	0.06	4
Ceftazidim	2	7	0				7															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	7	1	6			1															0.008	8
Penicillins																							
Ampicillin	4	3	0						1	2												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	7	1								6					1						4	64
Sulfonamides																							
Sulfonamide	256	7	2											3	2					2		8	1024
Tetracyclines																							
Tetracyclin	8	7	5						2					3		2						1	64
Trimethoprim	2	7	0					7														0.5	32

Footnote

Ciprofloxacin: = 0,03 µg/ ml – 4 x; = 0,015 µg/ ml – 2 x; <= 0,008 µg/ ml – 0 x.

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

S. Typhimurium

Pigs - mixed herds - at farm - animal sample - Clinical investigations

Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	7

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	7	0				4	2	1													0.25	32
Kanamycin	16	7	0								7											4	128
Streptomycin	32	7	3									3	1		1		2					2	128
Amphenicols																							
Chloramphenicol	16	7	1								6					1						2	64
Florfenicol	16	7	1								6			1								2	64
Cephalosporins																							
Cefotaxim	0.5	7	0		6	1																0.06	4
Ceftazidim	2	7	0				7															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	7	0	7																		0.008	8
Penicillins																							
Ampicillin	4	7	4							3					4							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	7	0								7											4	64
Sulfonamides																							
Sulfonamide	256	7	4											1	2					4		8	1024
Tetracyclines																							
Tetracyclin	8	7	5						2						1	4						1	64
Trimethoprim	2	7	0					7														0.5	32

Footnote

Ciprofloxacin: = 0,03 µg/ ml – 5 x; = 0,015 µg/ ml – 2 x; <= 0,008 µg/ ml – 0 x.

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

	S. Typhimurium
	Solipeds, domestic - horses - at farm - animal sample - Clinical investigations
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	1	0				1															0.25	32
Kanamycin	16	1	0								1											4	128
Streptomycin	32	1	0									1										2	128
Amphenicols																							
Chloramphenicol	16	1	0								1											2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0			1																0.06	4
Ceftazidim	2	1	0				1															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		0.008	8
Penicillins																							
Ampicillin	4	1	1												1							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	1																	1		8	1024
Tetracyclines																							
Tetracyclin	8	1	1													1						1	64
Trimethoprim	2	1	1												1							0.5	32

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

	S. Typhimurium
	Meat from pig - minced meat - intended to be eaten cooked - in total - Surveillance - surveillance survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	2

Antimicrobials:	**Break point**	**N**	**n**	**Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to**																		**lowest**	**highest**
				<=0.03	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**		
Aminoglycosides																							
Gentamicin	2	2	0				1	1														0.25	32
Kanamycin	16	2	0								2											4	128
Streptomycin	32	2	0									1	1									2	128
Amphenicols																							
Chloramphenicol	16	2	0							1	1											2	64
Florfenicol	16	2	0							1	1											2	64
Cephalosporins																							
Cefotaxim	0.5	2	0		2																	0.06	4
Ceftazidim	2	2	0				2															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	2	0	2																		0.008	8
Penicillins																							
Ampicillin	4	2	1						1						1							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	2	0								2											4	64
Sulfonamides																							
Sulfonamide	256	2	0									1		1								8	1024
Tetracyclines																							
Tetracyclin	8	2	1							1						1						1	64
Trimethoprim	2	2	0					2														0.5	32

Footnote

Ciprofloxacin: 0,03 µg/ ml – 1x; 0,015 µg/ ml – 1x.

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

S. Typhimurium

Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - Monitoring - monitoring survey

Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	**Break point**	**N**	**n**	**Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to**																	**lowest**	**highest**
				<=0.03	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	
Aminoglycosides																						
Gentamicin	2	1	0				1														0.25	32
Kanamycin	16	1	0								1										4	128
Streptomycin	32	1	0										1								2	128
Amphenicols																						
Chloramphenicol	16	1	0								1										2	64
Florfenicol	16	1	0								1										2	64
Cephalosporins																						
Cefotaxim	0.5	1	0		1																0.06	4
Ceftazidim	2	1	0				1														0.25	16
Fluoroquinolones																						
Ciprofloxacin	0.06	1	0	1																	0.008	8
Penicillins																						
Ampicillin	4	1	1												1						0.5	32
Polymyxins	0																					
Quinolones																						
Nalidixic acid	16	1	0								1										4	64
Sulfonamides																						
Sulfonamide	256	1	0											1							8	1028
Tetracyclines																						
Tetracyclin	8	1	0							1											1	64


Trimethoprim
2
1
0
1
0.5
32

Table Antimicrobial susceptibility testing in S. Typhimurium

n = Number of resistant isolates	S. Typhimurium			
	Meat from pig		**Meat from broilers (Gallus gallus)**	
Isolates out of a monitoring programme	yes		yes	
Number of isolates available in the laboratory	2		1	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Gentamicin	2	0	1	0
Kanamycin	2	0	1	0
Streptomycin	2	0	1	0
Amphenicols				
Chloramphenicol	2	0	1	0
Florfenicol	2	0	1	0
Cephalosporins				
Cefotaxim	2	0	1	0
Ceftazidim	2	0	1	0
Fluoroquinolones				
Ciprofloxacin	2	0	1	0
Fully sensitive	2	1	1	0
Penicillins				
Ampicillin	2	1	1	1
Polymyxins				
Colistin	2	0	1	0
Quinolones				
Nalidixic acid	2	0	1	0
Resistant to 1 antimicrobial	2	0	1	1
Resistant to 2 antimicrobials	2	1	1	0
Resistant to 3 antimicrobials	2	0	1	0
Resistant to 4 antimicrobials	2	0	1	0
Resistant to >4 antimicrobials	2	0	1	0
Sulfonamides				
Sulfonamide	2	0	1	0
Tetracyclines				
Tetracyclin	2	0	1	0
Trimethoprim	2	0	1	0

Table Antimicrobial susceptibility testing of S. Typhimurium - qualitative data

n = Number of resistant isolates

S. Typhimurium

	Other feed material - straws		Compound feedingstuffs for cattle		Compound feedingstuffs for pigs		Compound feedingstuffs for poultry (non specified)	
Isolates out of a monitoring programme	no							
Number of isolates available in the laboratory	1							
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides								
Gentamicin	1	0						
Kanamycin	1	1						
Streptomycin	1	0						
Amphenicols								
Chloramphenicol	1	0						
Florfenicol	1	0						
Cephalosporins								
Cefotaxim	1	0						
Ceftazidim	1	0						
Fluoroquinolones								
Ciprofloxacin	1	0						
Penicillins								
Ampicillin	1	1						
Polymyxins								
Quinolones								
Nalidixic acid	1	0						
Sulfonamides								
Sulfonamide	1	0						
Tetracyclines								
Tetracyclin	1	1						
Trimethoprim	1	0						

Table Antimicrobial susceptibility testing of S. 4,5,12:i:- in meat products - Meat from pig - fermented sausages - at retail - domestic production - Monitoring - monitoring survey - quantitative data [Dilution method]

	S. 4,5,12:i:-
	Meat from pig - meat products - fermented sausages - at retail - domestic production - Monitoring - monitoring survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	1	0				1															0.25	32
Kanamycin	16	1	0								1											4	128
Streptomycin	32	1	1														1					2	128
Amphenicols																							
Chloramphenicol	16	1	0								1											2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0			1																0.06	4
Ceftazidim	2	1	0				1															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		0.008	8
Penicillins																							
Ampicillin	4	1	1												1							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	1																	1		8	1024
Tetracyclines																							
Tetracyclin	8	1	1													1						1	64
Trimethoprim	2	1	0					1														0.5	32

Table Antimicrobial susceptibility testing in S. 4,5,12:i:-

n = Number of resistant isolates		
	S. 4,5,12:i:-	
	Meat from pig	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		1
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	1	0
Kanamycin	1	0
Streptomycin	1	1
Amphenicols		
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Ceftazidim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Fully sensitive	1	0
Penicillins		
Ampicillin	1	1
Polymyxins		
Colistin	1	0
Quinolones		
Nalidixic acid	1	0
Resistant to 1 antimicrobial	1	0
Resistant to 2 antimicrobials	1	0
Resistant to 3 antimicrobials	1	0
Resistant to 4 antimicrobials	1	1
Resistant to >4 antimicrobials	1	0
Sulfonamides		
Sulfonamide	1	1
Tetracyclines		
Tetracyclin	1	1
Trimethoprim	1	0

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in fattening pigs - Pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey - quantitative data [Dilution method]

S. 6,7:-:1,5

Pigs - fattening pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey

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

Antimicrobials:	**Break point**	**N**	**n**	**Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to**																		**lowest**	**highest**
				<=0.03	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**		
Aminoglycosides																							
Gentamicin	2	4	0					3	1													0.25	32
Kanamycin	16	4	0								4											4	128
Streptomycin	32	4	3										1				3					2	128
Amphenicols																							
Chloramphenicol	16	4	0							1	2	1										2	64
Florfenicol	16	4	0							3		1										2	64
Cephalosporins																							
Cefotaxim	0.5	4	0		2	1	1															0.06	4
Ceftazidim	2	4	0				3	1														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	4	1	2	1	1																0.008	8
Penicillins																							
Ampicillin	4	4	2						1		1				2							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	4	0								3		1									4	64
Sulfonamides																							
Sulfonamide	256	4	3											1						3		8	1024
Tetracyclines																							
Tetracyclin	8	4	3								1					3						1	64


Trimethoprim
2
4
2
2
2
2
0.5
32

Table Antimicrobial susceptibility testing in S. 6,7:-:1,5

n = Number of resistant isolates	S. 6,7:-:1,5			
	Pigs		**Pigs - fattening pigs - baseline survey**	
Isolates out of a monitoring programme	no		yes	
Number of isolates available in the laboratory	1		4	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Gentamicin	1	0	4	0
Kanamycin	1	0	4	0
Streptomycin	1	1	4	3
Amphenicols				
Chloramphenicol	1	0	4	0
Florfenicol	1	0	4	0
Cephalosporins				
Cefotaxim	1	0	4	0
Ceftazidim	1	0	4	0
Fluoroquinolones				
Ciprofloxacin	1	0	4	1
Fully sensitive	1	0	4	0
Penicillins				
Ampicillin	1	1	4	2
Polymyxins				
Colistin	1	0	4	0
Quinolones				
Nalidixic acid	1	0	4	0
Resistant to 1 antimicrobial	1	0	4	1
Resistant to 2 antimicrobials	1	0	4	0
Resistant to 3 antimicrobials	1	0	4	1
Resistant to 4 antimicrobials	1	0	4	0
Resistant to >4 antimicrobials	1	1	4	2
Sulfonamides				
Sulfonamide	1	1	4	3
Tetracyclines				
Tetracyclin	1	1	4	3
Trimethoprim	1	1	4	2

Footnote

Pigs: ASSuTW resistance - 1 x; Pigs – fattening pigs – baseline survey: Cip resistance - 1 x; SSuT resistance - 1 x ; ASSuTW resistance - 2 x.

Table Antimicrobial susceptibility testing of Salmonella spp. in fattening pigs - Pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey - quantitative data [Dilution method]

	Salmonella spp.
	Pigs - fattening pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	28

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	28	0				14	13	1													0.25	32
Kanamycin	16	28	0								28											4	128
Streptomycin	32	28	4							2	6	12	3	1			4					2	128
Amphenicols																							
Chloramphenicol	16	28	0							9	15	3	1									2	64
Florfenicol	16	28	0							12	12	4										2	64
Cephalosporins																							
Cefotaxim	0.5	28	0		21	5	2															0.06	4
Ceftazidim	2	28	0		24	4																0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	28	1	24	3	1																0.008	8
Penicillins																							
Ampicillin	4	28	0								28											0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	28	0								23	4	1									4	64
Sulfonamides																							
Sulfonamide	256	28	4									3	1	9	11					4		8	1024
Tetracyclines																							
Tetracyclin	8	28	5						10	12	1					5						1	64

Trimethoprim	2		28	2					26							2					0.5	32

Footnote

Serotypes: S. Derby - Fully sensitive 5 x; S. Enteritidis - Fully sensitive 2 x; S. Typhimurium - Fully sensitive 4 x; S. Choleraesuis - Fully sensitive 2 x, SSuT resistabce - 1 x; S. 6,7;-;1,5 - Cip resistance 1 x, SSuT resistance 1 x, ASSuTW resistance 2 x ; S. Infantis - T resistance 1 x; S. Abony - Fully sensitive 3 x; S. Bovismorbificans - Fully sensitive 2 x; S. Cerro - Fully sensitive 1 x; S. Havana - Fully sensitive 1 x; S. Montevideo - Fully sensitive 2 x.
Ciprofloxacin: = 0,03 µg/ ml – 22 x; = 0,015 µg/ ml – 2 x (S. Montevideo); <= 0,008 µg/ ml – 0 x.

Table Antimicrobial susceptibility testing of Salmonella in animals (Part A)

n = Number of resistant isolates

Salmonella spp.

	Pigs - fattening pigs - baseline survey		Ducks		Solipeds, domestic - horses		Turkeys - breeding flocks, unspecified - baseline survey		Turkeys - meat production flocks - baseline survey		Pheasants		Geese		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)	
Isolates out of a monitoring programme	yes		yes		no		yes		yes		yes		yes		no		no			
Number of isolates available in the laboratory	28		13		1		18		6		2		1		17		21			
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides																				
Gentamicin	28	0	13	0	1	0	18	0	6	2	2	0	1	0	17	0	21	0		
Kanamycin	28	0	13	0	1	0	18	0	6	0	2	0	1	0	17	2	21	1		
Streptomycin	28	4	13	2	1	0	18	1	6	2	2	0	1	0	17	2	21	4		
Amphenicols																				
Chloramphenicol	28	0	13	1	1	0	18	2	6	2	2	0	1	0	17	2	21	2		
Florfenicol	28	0	13	1	1	0	18	0	6	0	2	0	1	0	17	2	21	2		
Cephalosporins																				
Cefotaxim	28	0	13	0	1	0	18	0	6	0	2	0	1	0	17	0	21	0		
Ceftazidim	28	0	13	0	1	0	18	0	6	0	2	0	1	0	17	0	21	0		
Fluoroquinolones																				
Ciprofloxacin	28	1	13	2	1	0	18	2	6	2	2	1	1	0	17	1	21	1		
Fully sensitive	28	22	13	7	1	0	18	1	6	0	2	1	1	1	17	10	21	12		
Penicillins																				
Ampicillin	28	2	13	2	1	1	18	13	6	2	2	0	1	0	17	4	21	5		
Polymyxins																				
Quinolones																				
Nalidixic acid	28	0	13	2	1	0	18	2	6	2	2	1	1	0	17	1	21	0		
Resistant to 1 antimicrobial	28	2	13	1	1	0	18	0	6	0	2	0	1	0	17	2	21	1		

Resistant to 2 antimicrobials	28	0	13	4	1	0	18	4	6	4	2	1	1	0	17	2	21	2				
Resistant to 3 antimicrobials	28	2	13	0	1	0	18	4	6	0	2	0	1	0	17	1	21	2				
Resistant to 4 antimicrobials	28	0	13	0	1	1	18	9	6	0	2	0	1	0	17	0	21	2				
Resistant to >4 antimicrobials	28	2	13	1	1	0	18	0	6	2	2	0	1	0	17	2	21	2				
Sulfonamides																						
Sulfonamide	28	4	13	2	1	1	18	15	6	4	2	1	1	0	17	2	21	7				
Tetracyclines																						
Tetracyclin	28	5	13	3	1	1	18	15	6	6	2	1	1	0	17	6	21	7				
Trimethoprim	28	2	13	0	1	1	18	8	6	2	2	0	1	0	17	0	21	1				

Table Antimicrobial susceptibility testing of Salmonella in animals (Part B)

n = Number of resistant isolates

Salmonella spp.

	Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers	
Isolates out of a monitoring programme	yes		yes		yes	
Number of isolates available in the laboratory	16		31		106	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides						
Gentamicin	16	1	31	0	106	0
Kanamycin	16	2	31	0	106	1
Streptomycin	16	2	31	0	106	1
Amphenicols						
Chloramphenicol	16	1	31	0	106	0
Florfenicol	16	0	31	0	106	0
Cephalosporins						
Cefotaxim	16	0	31	0	106	0
Ceftazidim	16	0	31	0	106	0
Fluoroquinolones						
Ciprofloxacin	16	4	31	0	106	15
Fully sensitive	16	0	31	31	106	88
Penicillins						
Ampicillin	16	4	31	0	106	2
Polymyxins						
Quinolones						
Nalidixic acid	16	4	31	0	106	15
Resistant to 1 antimicrobial	16	0	31	0	106	1
Resistant to 2 antimicrobials	16	10	31	0	106	3
Resistant to 3 antimicrobials	16	1	31	0	106	0

Resistant to 4 antimicrobials	16	4	31	0	106	12
Resistant to >4 antimicrobials	16	1	31	0	106	2
Sulfonamides						
Sulfonamide	16	12	31	0	106	14
Tetracyclines						
Tetracyclin	16	13	31	0	106	14
Trimethoprim	16	4	31	0	106	1

Table Antimicrobial susceptibility testing of Salmonella spp. in food

n = Number of resistant isolates

Salmonella spp.

	Eggs		Other processed food products and prepared dishes - noodles		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Meat from other poultry species	
Isolates out of a monitoring programme	yes		yes		yes		yes		yes			
Number of isolates available in the laboratory	3		1		7		5		12			
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides												
Gentamicin	3	0	1	0	7	0	5	1	12	0		
Kanamycin	3	0	1	0	7	0	5	0	12	0		
Streptomycin	3	0	1	0	7	0	5	2	12	0		
Amphenicols												
Chloramphenicol	3	0	1	0	7	0	5	0	12	0		
Florfenicol	3	0	1	0	7	0	5	0	12	0		
Cephalosporins												
Cefotaxim	3	0	1	0	7	0	5	0	12	0		
Ceftazidim	3	0	1	0	7	0	5	0	12	0		
Fluoroquinolones												
Ciprofloxacin	3	0	1	0	7	2	5	0	12	5		
Fully sensitive	3	3	1	1	7	5	5	2	12	6		
Penicillins												
Ampicillin	3	0	1	0	7	0	5	3	12	1		
Polymyxins												
Quinolones												
Nalidixic acid	3	0	1	0	7	2	5	0	12	5		
Resistant to 1 antimicrobial	3	0	1	0	7	0	5	0	12	1		
Resistant to 2 antimicrobials	3	0	1	0	7	0	5	1	12	2		
Resistant to 3 antimicrobials	3	0	1	0	7	0	5	0	12	0		
Resistant to 4 antimicrobials	3	0	1	0	7	2	5	2	12	3		
Resistant to >4 antimicrobials	3	0	1	0	7	0	5	0	12	0		
Sulfonamides												
Sulfonamide	3	0	1	0	7	2	5	1	12	3		
Tetracyclines												
Tetracyclin	3	0	1	0	7	2	5	3	12	3		
Trimethoprim	3	0	1	0	7	0	5	0	12	0		

Footnote

Serotypes: Meat from bovine animals: S. Enteritidis - Fully sensitive 4 x; S. Montevideo - Fully sensitive 1 x; S. Infantis - SuTNxCip resistance 2 x; Meat from pig: S. Montevideo - Fully sensitive 1 x; S. Typhimurium - Fully sensitive 1 x; AT resistance 1 x; S. (4,5,12;i;-) - ASSuT resistance - 1 x; S. Derby - ASTG resistance 1 x; Meat from broilers (Gallus gallus): S. Enteritidis - Fully sensitive 6 x; NxCip resistance 1 x; S. Typhimurium - A resistance 1 x; S. Infantis - NxCip

resistance 1 x; S. Bareilly - SuTNxCip resistance 3 x; Eggs - shell: S. Enteritidis - Fully sensitive 2 x; S. Agona - Fully sensitive 1 x; Other food - noodles: S. Bareilly - Fully sensitive 1 x.

Table Antimicrobial susceptibility testing in Salmonella spp.

n = Number of resistant isolates

Salmonella spp.

	Compound feedingstuffs for poultry - laying hens		Compund feedingstuffs for poultry - broilers		Other feed material - straws		Feed material of cereal grain origin - maize		Feed material of land animal origin - meat and bone meal		Feed material of land animal origin - poultry offal meal		Pet food - dog snacks (pig ears, chewing bones)		Feed material of cereal grain origin - barley derived	
Isolates out of a monitoring programme	yes		yes		no		yes		yes		yes		no		yes	
Number of isolates available in the laboratory	2		3		2		1		2		5		2		1	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides																
Gentamicin	2	0	3	0	2	0	1	0	2	0	5	0	2	0	1	0
Kanamycin	2	0	3	0	2	1	1	0	2	0	5	0	2	0	1	0
Streptomycin	2	0	3	0	2	0	1	0	2	0	5	0	2	1	1	0
Amphenicols																
Chloramphenicol	2	0	3	0	2	0	1	0	2	0	5	0	2	0	1	0
Florfenicol	2	0	3	0	2	0	1	0	2	0	5	0	2	0	1	0
Cephalosporins																
Cefotaxim	2	0	3	0	2	0	1	0	2	0	5	0	2	0	1	0
Ceftazidim	2	0	3	0	2	0	1	0	2	0	5	0	2	0	1	0
Fluoroquinolones																
Ciprofloxacin	2	0	3	1	2	0	1	0	2	0	5	2	2	0	1	0
Penicillins																
Ampicillin	2	0	3	0	2	1	1	0	2	1	5	1	2	1	1	0
Polymyxins																
Colistin	2	0	3	0	2	0	1	0	2	0	5	0	2	0	1	0
Quinolones																
Nalidixic acid	2	0	3	1	2	0	1	0	2	0	5	2	2	0	1	0
Sulfonamides																
Sulfonamide	2	0	3	1	2	0	1	0	2	0	5	2	2	1	1	0
Tetracyclines																
Tetracyclin	2	0	3	1	2	1	1	0	2	1	5	2	2	1	1	0
Trimethoprim	2	0	3	0	2	0	1	0	2	0	5	0	2	1	1	0

Footnote

Pet food - dog snacks: Fully sensitive - S. Derby 1x, ASSuTW resistance - S. 6,7;-;1,5 1x; Barley derived : Fully sensitive - S. Lille 1x; Maize derived - Fully sensitive - S. Agona 1x; Meat and bone meal: Fully sensitive - S. Montevideo 1x, AT resistance - S. Livingstone 1x; Poultry offal: Fully sensitive - S. Enteritidis 1x, S. Lille 1x, A resistance - S. Bareilly 1x, SuTNxCip resistance - S. Bareilly 2x; Compound feedingstuffs for poultry - laying hens: Fully sensitive - S. Enteritidis 1x, S. Agona 1x; Compound feedingstuffs for poultry - broilers: Fully sensitive - S.Enteritidis 1x, S. Tennessee 1x, SuTNxCip resistance - S. Infantis 1x; Other feed materials - straws: Fully sensitive - S. Enteritidis 1x, ATK resistance - S. Typhimurium 1x.

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

	Other serotypes
	Pigs - mixed herds - at farm - animal sample - Clinical investigations
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	13

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	13	0				4	8	1													0.25	32
Kanamycin	16	13	1								12						1					4	128
Streptomycin	32	13	2								1	3		7	1		1					2	128
Amphenicols																							
Chloramphenicol	16	13	1								10	2				1						2	64
Florfenicol	16	13	1							5	6	1				1						2	64
Cephalosporins																							
Cefotaxim	0.5	13	0		8	4	1															0.06	4
Ceftazidim	2	13	0				9	4														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	13	1	12		1																0.008	8
Penicillins																							
Ampicillin	4	13	1						6	5	1				1							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	13	0								9	3	1									4	64
Sulfonamides																							
Sulfonamide	256	13	2											6	5					2		8	1024
Tetracyclines																							
Tetracyclin	8	13	2						5	5	1					2						1	64
Trimethoprim	2	13	1					12							1							0.5	32

Footnote

Serotypes: S. Choleraesuis - Fully sensitive 5 x, Cip resistance 1 x; S. 6,7:-:1,5 - ASSuTW resistance 1 x; S Agona - Fully sensitive 2 x, SuCF resistance 1 x; S. Bovismorbificans - Fully sensitive 1 x; S. Bredeney - STK resistance 1 x; S. London - Fully sensitive 1 x.
Ciprofloxacin: = 0,03 µg/ ml – 7 x; = 0,015 µg/ ml – 5 x; <= 0,008 µg/ ml – 0 x.

Table Antimicrobial susceptibility testing of Other serotypes in Ducks - unspecified - at farm - Monitoring - quantitative data [Dilution method]

	Other serotypes
	Ducks - unspecified - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	3

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	3	0				3															0.25	32
Kanamycin	16	3	0								3											4	128
Streptomycin	32	3	0									3										2	128
Amphenicols																							
Chloramphenicol	16	3	0								3											2	64
Florfenicol	16	3	0							1	2											2	64
Cephalosporins																							
Cefotaxim	0.5	3	0		1	2																0.06	4
Ceftazidim	2	3	0				2	1														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	3	0	3																		0.008	8
Penicillins																							
Ampicillin	4	3	0						3													0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	3	0								3											4	64
Sulfonamides																							
Sulfonamide	256	3	0										2	1								8	1024
Tetracyclines																							
Tetracyclin	8	3	0						3													1	64
Trimethoprim	2	3	0					3														0.5	32

Footnote

Serotypes: S. Blockley 1 x, S. Kapemba 1 x, S. Senftenberg 1 x.
Ciprofloxacin: = 0,03 µg/ ml – 2 x; = 0,015 µg/ ml – 1 x; <= 0,008 µg/ ml – 0 x.

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

	Other serotypes
	Gallus gallus (fowl) - laying hens - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	8

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	8	0				8															0.25	32
Kanamycin	16	8	0								7	1										4	128
Streptomycin	32	8	0								6	2										2	128
Amphenicols																							
Chloramphenicol	16	8	0								8											2	64
Florfenicol	16	8	0								8											2	64
Cephalosporins																							
Cefotaxim	0.5	8	0			8																0.06	4
Ceftazidim	2	8	0					8														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	8	0	8																		0.008	8
Penicillins																							
Ampicillin	4	8	0						5	3												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	8	0								8											4	64
Sulfonamides																							
Sulfonamide	256	8	0										1	3	4							8	1024
Tetracyclines																							
Tetracyclin	8	8	0						5	3												1	64
Trimethoprim	2	8	0					8														0.5	32

Footnote

Serotypes: S. Agona 5 x, S. Derby 1 x, S. Infantis 1 x, S. Kentucky 1 x.
Ciprofloxacin: = 0,03 µg/ ml – 4 x; = 0,015 µg/ ml – 4 x; <= 0,008 µg/ ml – 0 x.

Table Antimicrobial susceptibility testing in Other serotypes

n = Number of resistant isolates

Other serotypes

	Ducks		Turkeys - breeding flocks, unspecified - baseline survey		Pigs		Pigs - fattening pigs - baseline survey		Gallus gallus (fowl) - broilers		Gallus gallus (fowl) - laying hens	
Isolates out of a monitoring programme	yes		yes		no		yes		yes		yes	
Number of isolates available in the laboratory	3		1		2		9		23		1	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides												
Gentamicin	3	0	1	0	2	0	9	0	23	0	1	0
Kanamycin	3	0	1	0	2	0	9	0	23	0	1	0
Streptomycin	3	0	1	0	2	0	9	0	23	0	1	0
Amphenicols												
Chloramphenicol	3	0	1	0	2	0	9	0	23	0	1	0
Florfenicol	3	0	1	0	2	0	9	0	23	0	1	0
Cephalosporins												
Cefotaxim	3	0	1	0	2	0	9	0	23	0	1	0
Ceftazidim	3	0	1	0	2	0	9	0	23	0	1	0
Fluoroquinolones												
Ciprofloxacin	3	0	1	0	2	0	9	0	23	0	1	0
Fully sensitive	3	0	1	1	2	2	9	9	23	23	1	1
Penicillins												
Ampicillin	3	0	1	0	2	0	9	0	23	0	1	0
Polymyxins												
Colistin	3	0	1	0	2	0	9	0	23	0	1	0
Quinolones												
Nalidixic acid	3	0	1	0	2	0	9	0	23	0	1	0
Sulfonamides												
Sulfonamide	3	0	1	0	2	0	9	0	23	0	1	0
Tetracyclines												
Tetracyclin	3	0	1	0	2	0	9	0	23	0	1	0
Trimethoprim	3	0	1	0	2	0	9	0	23	0	1	0

Footnote

Pigs - fattening pigs - baseline survey: S. Abony 3x, S. Bovismorbificans 2x , S Montevideo 2x, S. Cerro 1x, S. Havana 1x; Pigs: S Bovismorbificans 1x, S. London 1x; Gallus gallus (fowl) - broilers: S. Montevideo 6x, S. Kentucky 6x, S. Lille 8x, S. Abony 1x, S. Mbandaka 1x, S. Senftenberg 1x; Gallus gallus (fowlň - laying hens: S. Kentucky 1x; Turkeys breeding flocks, unspecified - baseline survey: S. Senftenberg 1x; Ducks: S. Blockley 1x, S. Kapemba 1x, s. Senftenberg 1x. These isolates were fully sensitive.

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

	Other serotypes
	Gallus gallus (fowl) - broilers - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	23

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	23	0				13	9	1													0.25	32
Kanamycin	16	23	0								23											4	128
Streptomycin	32	23	0								11	12										2	128
Amphenicols																							
Chloramphenicol	16	23	0								22	1										2	64
Florfenicol	16	23	0								23											2	64
Cephalosporins																							
Cefotaxim	0.5	23	0		6	17																0.06	4
Ceftazidim	2	23	0				8	15														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	23	0	23																		0.008	8
Penicillins																							
Ampicillin	4	23	0						18	5												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	23	0								23											4	64
Sulfonamides																							
Sulfonamide	256	23	0											19	4							8	1024
Tetracyclines																							
Tetracyclin	8	23	0						14	9												1	64
Trimethoprim	2	23	0					23														0.5	32

Footnote

Serotypes: S. Lille 8 x, S. Kentucky 6 x, S. Montevideo 6 x, S. Abony 1 x, S. Mbandaka 1 x, S. Senftenberg 1 x.
Ciprofloxacin: = 0,03 µg/ ml – 9 x; = 0,015 µg/ ml – 14 x; <= 0,008 µg/ ml – 0 x.

Table Antimicrobial susceptibility testing of Other serotypes in Turkeys - unspecified - at farm - Monitoring - quantitative data [Dilution method]

	Other serotypes
	Turkeys - unspecified - at farm - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	4

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	4	1				3								1							0.25	32
Kanamycin	16	4	2								1	1					2					4	128
Streptomycin	32	4	2									1		1	1		1					2	128
Amphenicols																							
Chloramphenicol	16	4	1							1		1	1			1						2	64
Florfenicol	16	4	0							1	2	1										2	64
Cephalosporins																							
Cefotaxim	0.5	4	0			3	1															0.06	4
Ceftazidim	2	4	0				2	2														0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	4	1	2	1		1															0.008	8
Penicillins																							
Ampicillin	4	4	1						2		1				1							0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	4	1								2	1				1						4	64
Sulfonamides																							
Sulfonamide	256	4	2											1	1					2		8	1024
Tetracyclines																							
Tetracyclin	8	4	3							1						3						1	64
Trimethoprim	2	4	0					4														0.5	32

Footnote

Serotypes: S. Bredeney - SSuTK resistance; S. Indiana - SuTK resistance; S. Kiambu - ACSTGNxCip resistance 1 x; S. Senftenberg - Fully sensitive 1 x.

Table Antimicrobial susceptibility testing of Other serotypes in fattening pigs - Pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey - quantitative data [Dilution method]

	Other serotypes
	Pigs - fattening pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes - Monitoring - monitoring survey
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	9

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**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**
Aminoglycosides																							
Gentamicin	2	9	0				5	4														0.25	32
Kanamycin	16	9	0								9											4	128
Streptomycin	32	9	0								4	4	1									2	128
Amphenicols																							
Chloramphenicol	16	9	0							3	6											2	64
Florfenicol	16	9	0							3	6											2	64
Cephalosporins																							
Cefotaxim	0.5	9	0		9																	0.06	4
Ceftazidim	2	9	0				9															0.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	9	0	9																		0.008	8
Penicillins																							
Ampicillin	4	9	0						8	1												0.5	32
Polymyxins	0																						
Quinolones																							
Nalidixic acid	16	9	0								9											4	64
Sulfonamides																							
Sulfonamide	256	9	0											5	4							8	1024
Tetracyclines																							
Tetracyclin	8	9	0						7	2												1	64


Trimethoprim
2
9
0
9
0.5
32

Table Breakpoints for antibiotic resistance testing in Animals

Test Method Used

Broth dilution

Standards used for testing

NCCLS

EUCAST

WHO/ GSS

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	2	64				
Florfenicol	EUCAST	16		16	2	64				
Tetracyclines										
Tetracyclin	EUCAST	8		8	1	64				
Fluoroquinolones										
Ciprofloxacin	EUCAST	0.06		0.06	0.008	8				
Enrofloxacin										
Quinolones										
Nalidixic acid	EUCAST	16		16	1	64				
Trimethoprim	EUCAST	2		2	0.5	32				
Sulfonamides										
Sulfonamide	EUCAST/ ARBAO II	256		256	8	1024				
Aminoglycosides										
Streptomycin	EUCAST/ CLSI	32		32	2	128				
Gentamicin	EUCAST	2		2	0.25	32				
Neomycin										
Kanamycin		16		16	4	128				
Polymyxins										
Colistin		8		8	8	16				
Trimethoprim + sulfonamides										
Cephalosporins										
Cefotaxim	EUCAST	0.5		0.5	0.06	4				
Ceftazidim	EUCAST	2		2	0.25	16				
3rd generation cephalosporins										
Penicillins										
Ampicillin	EUCAST	4		4	0.5	32				

Table Breakpoints for antibiotic resistance testing in Food

Test Method Used

Broth dilution

Standards used for testing

NCCLS

EUCAST

WHO/ GSS

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	2	64				
Florfenicol	EUCAST	16		16	2	64				
Tetracyclines										
Tetracyclin	EUCAST	8		8	1	64				
Fluoroquinolones										
Ciprofloxacin	EUCAST	0.06		0.06	0.008	8				
Enrofloxacin										
Quinolones										
Nalidixic acid	EUCAST	16		16	1	64				
Trimethoprim	EUCAST	2		2	0.5	32				
Sulfonamides										
Sulfonamide	EUCAST/ ARBAO II	256		256	8	1024				
Aminoglycosides										
Streptomycin	EUCAST/ CLSI	32		32	2	128				
Gentamicin	EUCAST	2		2	0.25	32				
Neomycin										
Kanamycin		16		16	4	128				
Polymyxins										
Colistin		8		8	8	16				
Trimethoprim + sulfonamides										
Cephalosporins										
Cefotaxim	EUCAST	0.5		0.5	0.06	4				
Ceftazidim	EUCAST	2		2	0.25	16				
3rd generation cephalosporins										
Penicillins										
Ampicillin	EUCAST	4		4	0.5	32				

Table Breakpoints for antibiotic resistance testing in Feedingstuff

Test Method Used

Broth dilution

Standards used for testing

NCCLS

EUCAST

WHO/ GSS

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	2	64				
Florfenicol	EUCAST	16		16	2	64				
Tetracyclines										
Tetracyclin	EUCAST	8		8	1	64				
Fluoroquinolones										
Ciprofloxacin	EUCAST	0.06		0.06	0.008	8				
Enrofloxacin										
Quinolones										
Nalidixic acid	EUCAST	16		16	1	64				
Trimethoprim	EUCAST	2		2	0.5	32				
Sulfonamides										
Sulfonamide	EUCAST/ ARBAO II	256		256	8	1024				
Aminoglycosides										
Streptomycin	EUCAST/ CLSI	32		32	2	128				
Gentamicin	EUCAST	2		2	0.25	32				
Neomycin										
Kanamycin		16		16	4	128				
Polymyxins										
Colistin		8		8	8	16				
Trimethoprim + sulfonamides										
Cephalosporins										
Cefotaxim	EUCAST	0.5		0.5	0.06	4				
Ceftazidim	EUCAST	2		2	0.25	16				
3rd generation cephalosporins										
Penicillins										
Ampicillin	EUCAST	4		4	0.5	32				

2.2. CAMPYLOBACTERIOSIS

2.2.1. General evaluation of the national situation

A. Thermophilic Campylobacter general evaluation

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

The monitoring system for Thermophilic Campylobacter in the Slovak republic has not been adopted.
Sampling strategy
All obtained data were collected from the State Veterinary and Food Institutes and from the State Veterinary Institute in Slovakia. The statistical survey was elaborated by the National Reference Laboratory for Campylobacter in Dolný Kubín.
Campylobacter spp. in poultry meat and other food had been exclusively tested by the SVFI Dolný Kubín within the frame of targeted controls under RVFA Žilina. One sample was tested by SVFI Bratislava.
The samples of poultry meat were tested in accordance with a standardized international method for Campylobacter presence (STN EN ISO 10272-1). In case of a positive finding the isolates were species-identified by methods of molecular biology.
Campylobacter spp. presence in animals had been tested by all Institutes. The samples comprised of preputial lavage fluid collected from cattle, abortion material, faeces, rectal and cloacal swabs.
Testing results
A total of 887 animals in 2007 were examined for Campylobacter spp., with positive findings in 40 animals which makes 4,51% (1 head of cattle, 1 sheep, 29 PCS of pigs, 4 PCS of Gallus gallus, 4 dogs, 1 zoo animal). The positive character of incidence comparing the past years has an increasing tendency what has shown a good correlation with a high worldwide incidence of Campylobacter.
A total of 151 food samples other than poultry meat in 2007 were tested for Campylobacter spp., with positive findings for 20 food samples which makes 13,24%. The detection was mainly recorded in sheep milk and products thereof. Besides that, 16 poultry meat samples had been analyzed with a total of positive findings 16 what makes 100%. All referred samples originated in targeted controls.
Generally speaking, not enough attention to the incidence and prevalence of Campylobacter in animals, but especially in food has been paid over the past years. In 2007, no methodical instruction for Campylobacter spp. monitoring in food had been issued. That is why the assessment of bacterium incidence in various types of food cannot be supposed as a mirror of existing incidence of Campylobacter.

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. upsaliensis	C. jejuni	Thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus) (1)	SVFI	batch	25g	18	18	1			17	6

(1) : all investigated samples were positive, in some of them found more then one serovar

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
Milk, sheep's										
raw (1)	SVFI	single	25ml	62	11	3				10
Cheeses made from cows' milk	SVFI	batch	25g	5	1		1			
Cheeses made from sheep's milk	SVFI	batch	25g	69	6					6
Eggs	SVFI	batch	25g	15	0					

(1) : more than one serovar in one sample

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	Thermophilic Campylobacter spp., unspecified
Cattle (bovine animals)	SVFI, SVI	animal	635	1	1		
Sheep	SVFI	animal	20	1			1
Pigs	SVFI, SVI	animal	148	29		28	1
Solipeds, domestic	SVFI	animal	2	0			
Gallus gallus (fowl)	SVFI	animal	10	4	3	1	
Dogs	SVFI	animal	55	4	1	1	2
Cats	SVFI	animal	8	0			
Zoo animals, all	SVFI	animal	9	1			1

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

Sampling strategy

All obtained data were collected from the State Veterinary and Food Institutes and from the State Veterinary Institute in Slovakia. The statistical survey was elaborated by the National Reference Laboratory for Listeria monocytogenes in Dolný Kubín. The samples comprised of official samples taken by inspectors of the Veterinary and Food Administrations according to valid rules for 2007 and private samples delivered for testing within own controls. All samples were tested in accordance with standardized international methods for Listeria presence (STN EN ISO 11290-1) or Listeria counts (STN EN ISO 11290-2) by single or batch system according to applicant's requirements and amount of a taken sample. Generally, the samples from production sector were tested by single system and the samples from commercial network by batch system. Listeria quantification was routinely done in each positive finding. The sample weight was 25g, resp. 10g.

Regarding animals, it is mostly a matter of brain-tissue samples or abortion material that is tested for L. monocytogenes presence.

Early in 2007 there had been a targeted control aimed at Listeria in smoked fish and blue cheese Niva as a consequence of that time existing epidemiological situation in the Czech Republic. Other samples were tested continuously through the whole year.

Testing results

A total of 1 055 animals in 2007 were examined for Listeria with positive findings in 11 animals which makes 1,04% (2 head of cattle, 5 PCS of sheep, 3 PCS of goats and one horse). Comparing the past years (2003-2006) there is a slight increase in the number of positive findings.

Regarding milk testing and products thereof, the types of samples are specified in Regulation (EC) No 2073/ 2005 as amended by Regulation (EC) No 1441/ 2007. The samples according to their character and predisposition to Listeria (aw, pH, shelf-life) were tested for Listeria presence or enumeration analysis, nevertheless on applicant's request such types of samples were tested that need not be tested (UHT milk, raw materials for production of milk products, etc.).

Milk and products thereof

A total of 2 069 samples in 2007 were tested for LM presence with positive findings in 32 samples (1,55%) and for LM enumeration analysis it was 1 528 samples thereof only one sample of blue cheese Niva was beyond 100 CFU/ g limit (0,07%). Comparing 2006 there is a significant increase in the number of positive findings in dairy products.

Other food

In respect of other food, mainly meat and meat products were under inspection, testing swab samples from premises, fruit and vegetable testing (fresh or frozen), ready-to-eat meals and ready-to-cook foods, mayonnaise and other food. A total of 4 274 samples were tested for LM presence (thereof 65 positive samples – 1,4%) and for LM enumeration analysis it was 1 176 samples thereof 2 samples were beyond 100 CFU/ g limit (smoked fish) and 2 samples with LM counts below the limit.

The samples exceeding the LM counts limit and evaluated as non-compliant had been taken in commercial network under a targeted control ordered by the State Veterinary and Food Administration as a consequence of existing epidemiological situation in the Czech Republic.

Comparing 2006 there was a significant increase in detection, mainly in mixture cheeses (cow's/ sheep milk), eventually cow's cheeses in spite of the fact that the samples were submitted to pasteurization (we are of opinion that for the most part it was a matter of secondary contamination, resp. inadequate pasteurization temperature) and in -eat meals. Other commodities showed about the same situation as in the year 2006.

2.3.2. Listeriosis in humans

A. Listeriosis in humans

Reporting system in place for the human cases

Disease is reported mandatory by physicians on microbiological labs.

Case definition

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

Diagnostic/ analytical methods used

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

Results of the investigation

Sporadic cases are reported in Slovakia

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

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

2.3.3. Listeria in foodstuffs

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Milk, cows'										
raw	SVFI	batch	25ml	31	0	29	0	2		
pasteurised milk	SVFI	batch	25ml	207	0	59	0	148		
UHT milk	SVFI	batch	25ml	29	0	0	0	29		
Milk, sheep's										
raw	SVFI	single	10ml	9	0	5	0	4		
raw milk for manufacture										
intended for manufacture of raw or low heat-treated products	SVFI	single	10ml	11	0	6	0	5		
Milk, goats'										
raw	SVFI	single	10ml	7	1	6	1	1		
Cheeses made from cows' milk										
soft and semi-soft										
made from raw or low heat-treated milk	SVFI	batch	25g	69	0	17	0	52		
made from pasteurised milk	SVFI	batch	25g	889	24	686	23	213		1
hard										
made from pasteurised milk	SVFI	batch	25g	250	0	194	0	56		
Cheeses made from sheep's milk										
soft and semi-soft										
made from raw or low heat-treated milk	SVFI	batch	25g	748	2	479	2	269		
made from pasteurised milk	SVFI	batch	25g	50	0	17	0	33		
hard										
made from pasteurised milk	SVFI	batch	25g	2	0	2	0	0		
Dairy products (excluding cheeses)										
butter	SVFI	batch	25g	165	0	89	0	76		

cream	SVFI	batch	25g	125	0	54	0	71		
fermented dairy products	SVFI	batch	25g	390	1	149	1	241		
dairy products, not specified										
(frozen)	SVFI	batch	25g	44	0	4	0	40		
(condensed milk)	SVFI	batch	25g	3	0	3	0	0		
milk powder and whey powder	SVFI	batch	25g	44	0	4	0	40		
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	5	1	2	1	3		
made from pasteurised milk	SVFI	batch	25g	492	4	259	4	233		
hard										
made from pasteurised milk	SVFI	batch	25g	17	0	5	0	12		

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Meat from broilers (Gallus gallus)										
fresh	SVFI	batch	25g	3	1	3	1	0		
meat products	SVFI	batch	25g	7	0	4	0	3		
cooked, ready-to-eat	SVFI	batch	25g	95	0	62	0	33		
(fermented)	SVFI	batch	25g	7	0	4	0	3		
Meat from pig										
fresh	SVFI	batch	25g	27	2	22	2	5		
meat products	SVFI	batch	25g	96	4	61	4	35		
cooked, ready-to-eat	SVFI	batch	25g	854	3	671	3	183		
(pork sausages)	SVFI	batch	25g	98	4	87	4	11		
Meat from bovine animals										
fresh	SVFI	batch	25g	2	0	0	0	2		
meat products	SVFI	batch	25g	110	0	91	0	19		
cooked, ready-to-eat	SVFI	batch	25g	10	0	0	0	10		
fermented sausages	SVFI	batch	25g	1	0	0	0	1		
Fish										
smoked	SVFI	batch	25g	109	4	19	2	90		2
raw	SVFI	batch	25g	26	0	20	0	6		
Meat from bovine animals and pig										
meat products	SVFI	batch	25g	1340	18	872	18	468		
Fishery products, unspecified	SVFI	batch	25g	221	2	105	2	116		
Fruits and vegetables	SVFI	batch	25g	39	0	29	0	10		
Egg products										
(mayonnaise)	SVFI	batch	25g	174	0	85	0	89		
Other processed food products and prepared dishes	SVFI	batch	25g	150	7	110	7	40		
Fats and oils (excluding butter)										
fats	SVFI	batch	25g	20	0	10	0	10		
Other food										

(dehydrated)	SVFI	batch	25g	21	0	15	0	6		

2.3.4. Listeria in animals

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria spp.	L. monocytogenes	Listeria spp., unspecified
Cattle (bovine animals)	SVFI	animal	93	2	2	
Sheep	SVFI	animal	56	5	5	
Goats	SVFI, SVI	animal	14	3	3	
Pigs	SVFI	animal	59	0		
Solipeds, domestic						
horses	SVFI	animal	2	1	1	
Poultry, unspecified	SVFI	animal	785	0		
Dogs	SVFI	animal	24	0		
Cats	SVFI	animal	1	0		
Deer						
wild						
roe deer	SVFI	animal	1	0		
fallow deer	SVFI, SVI	animal	5	0		
Hamsters	SVFI	animal	2	0		
Rabbits	SVFI	animal	5	0		
Chinchillas	SVFI	animal	1	0		
Birds						
pet animals (1)	SVFI	animal	5	0		
Foxes						
wild						
artic fox	SVFI	animal	1	0		

(1) : exotic birds

2.4. E. COLI INFECTIONS

2.4.1. General evaluation of the national situation

A. Verotoxigenic Escherichia coli infections general evaluation

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

The monitoring system for Verotoxigenic E.coli in the Slovak republic has not been adopted. The investigations were performed on the basis of targeted investigations in differential diagnostics and under suspicoin of infection, documented by clinical signs.
In 2007, no samples were planned under the official sampling plan for examination of the presence of verotoxigenic E.coli in food of plant and animal origin. Despite it, under the monitoring the targeted control was performed at the beginning of a sheep season in the region Orava, Liptov, where the typical Slovak products are produced from a raw sheep milk. The part of this targeted control was also the examination for E.coli O157 and at the same time also for the evidence of the presence of genes responsible for the production of verotoxines.
The samples were taken directly in special sheep farm establishments “salaš”. It involved the examination of sheep cheese and milk. The samples were subject to examination by molecular methods for determination of the presence of DNA O157 and genes VT1 and VT2. Totally 35 samples were examined, out of them 7 contained the afore-said genes (20%). The samples in question were not examined culturally.
During a year, based on indications (digestion problems) also 4 samples of frozen creams and 4 ready-to-eat meals (according to STN EN ISO 16654 as a pooled sample) were culturally examined, however no positive finding was confirmed in these samples.

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	Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Meat from broilers (Gallus gallus)	SVFI	single	10g	12	0			
fresh	SVFI	single	10g	21	0			
Meat from pig	SVFI	single	10g	6	0			
minced meat	SVFI	single	10g	316	0			
meat products	SVFI	single	10g	7	0			
Meat from bovine animals								
minced meat	SVFI	single	10g	47	0			
Cheeses made from cows' milk	SVFI	batch	10g	594	0			
Dairy products (excluding cheeses)	SVFI	batch	10g	57	0			
dairy desserts								
frozen	SVFI	single	10g	4	0			
Milk, sheep's								
raw	SVFI	single	10ml	4	0			
Cheeses made from sheep's milk	SVFI	batch	10g	39	7			7
Other processed food products and prepared dishes	SVFI	single	10g	4	0			

2.4.4. Escherichia coli, pathogenic in animals

Table VT E. coli in animals

	Source of information	Sampling unit	Sample weight	Units tested	Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Dogs	SVFI	animal		20	0			
Cats	SVFI	animal		5	1	1		

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.

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

On the basis of Commission Decision 2005/ 179/ EC Slovakia is officially free of tuberculosis.
Monitoring of Mycobacterium in animals was carried out according „Plan of veterinary prevention and protection" (Act 39/ 2007 Coll. on Veterinary Care). Relevant tuberculous changes detected at slaughterhouses during post-mortem inspection are laboratory tested.
During 2007 totally 125 samples were investigated (lymph nodes sample in cattle, pigs, liver in pigeons, 1 sample of goats milk, 1 sample of pigeons faeces, 4 samples of cattle faeces). Samples were taken at slaughterhouses and one sample from farm.
Out of total number of investigated samples, 27 samples were positive. No isolation of Mycobacterium tuberculosis complex was found.
19 samples of pigs were positive for Mycobacterium avium subsp. avium and in one case Mycobacterium avium complex.
4 samples in cattle were positive for Mycobacterium nonchromogenicum and in 2 cases samples were identified as Mycobacterium third class by Runyon. Positive pigeon sample was positive for Mycobacterium nonchromogenicum.

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

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

Recent actions taken to control the zoonoses

In cattle
A) Single intradermal tuberculin test by mammalian tuberculin:
• once per year 33% of holdings in the district – all animals over 24 months of age

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

Tests should be performed up to 12 months since the last examination.
b) In holdings with positive microbiological finding of M. avium and in the case of staff tuberculosis affection, immediately-in the case if minimum 6 weeks elapsed after the last tuberculination
c) Bacteriologic investigation in case of
- slaughtering of positive reactors
- looking for source of infection
- significant changes indicating tuberculosis within post mortem inspection at slaughterhouse

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

2.5.2. Tuberculosis, Mycobacterial Diseases in humans

2.5.3. Mycobacterium in animals

A. Mycobacterium bovis in bovine animals

Status as officially free of bovine tuberculosis during the reporting year

The entire country free

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

Free regions

All regions in Slovak Republic are officially free of tuberculosis.

Monitoring system

Sampling strategy

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

Frequency of the sampling

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

Type of specimen taken

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

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.	Mycobacterium, atypical	M. avium complex	M. bovis	M. tuberculosis	M. avium complex - M. avium subsp. avium
Goats	SVFI	animal	1	0					
Pigs	SVFI	animal	52	20		1			19
Zoo animals, all	SVFI	animal	1	0					
Pigeons	SVFI	animal	5	1					1
Cattle (bovine animals)	SVFI	animal	73	6	6				

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Routine tuberculin testing		Number of tuberculin tests carried out before the introduction into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/ 432/ EEC)	Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological examinations	Number of animals detected positive in bacteriological examination
	Herds	Animals	Number of herds	%	Number of herds	%	Interval between routine tuberculin tests (*)	Number of animals tested			
Bratislavsky kraj	101	2088	101	100	0	0	3	1992	0	0	0
Trnavsky kraj	591	25056	591	100	0	0	3	12534	0	0	0
Trenciansky kraj	581	10992	581	100	0	0	3	6061	0	0	0
Nitriansky kraj	850	20210	850	100	0	0	3	13875	0	0	0
Zilinsky kraj	2893	9145	2893	100	0	0	3	6292	0	0	0
Banskobystricky kraj	3070	15050	3070	100	0	0	3	11157	0	0	0
Presovsky kraj	1737	10575	1737	100	0	0	3	15074	0	0	0
Kosicky kraj	1127	10350	1127	100	0	0	3	10710	0	0	0
Total	10950	103466	10950	100	0	0		77695	0	0	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	7018	0				
Sheep	SVI, SVFI	animal	21111	0				
Goats	SVI. SVFI	animal	907	0				
Cattle (bovine animals)	SVI, SVFI	animal	72253	0				
Solipeds, domestic								
horses	SVI, SVFI	animal	245	0				
Deer	SVI, SVFI	animal	198	0				
Hares	SVI, SVFI	animal	344	0				
Dogs	SVI, SVFI	animal	2	0				
Mouflons	SVI, SVFI	animal	15	0				
Zoo animals, all	SVI, SVFI	animal	16	0				

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Surveillance						Investigations of suspect cases								
							Serological tests			Examination of bulk milk 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		
SLOVENSKÁ REPUBLIKA	10950	103466	10950	100	0	0	0	73344	0	0	0	0	48344	0	0	5123	0	0	0	732	0
Total	10950	103466	10950	100	0	0	0	73344	0	0	0	0	48344	0	0	5123	0	0	0	732	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
SLOVENSKÁ REPUBLIKA	3408	365092	3408	100	0	0	1188	20675	0	10639	0	356	0	0
Total	3408	365092	3408	100	0	0	1188	20675	0	10639	0	356	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	25g	4	0					

2.7.4. Yersinia in animals

2.8. TRICHINELLOSIS

2.8.1. General evaluation of the national situation

A. Trichinellosis general evaluation

History of the disease and/ or infection in the country

Trichinellosis has been occurring in Slovakia for many decades as a sporadic disease in humans or in a form of smaller or minor epidemics. Since 1962 in Slovakia there were totally 12 epidemics of trichinellosis, whereas the biggest was in the year 1968. Occurrence of antibodies, eosinofilia and clinical signs were serologically confirmed in 336 patients. The disease agent was typed Trichinella britovi, whereas clinical signs were mild and it did not come to a fatal case. Further epidemics in the year 2001 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% in 2006 increase on 13,7% and in 2007 increase on 20,48%.
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

In positive cases strongly predominate Trichinella britovi.
The highest occurance of Trichinella spp. (in particular T.britovi; 20,47%) is recorded in red foxes. In two samples of investigated foxes was found combined infection of T.spiralis and T. britovi
All slaughtered pigs and horses at slaghterhouses were examined for the presence of larvae Trichinalla spp.
All pigs slaughtered for private domestic consumpion were examinated for presence of larvae Trichinella spp.
In the year 2007 was no positive finding of Trichinella recorded in slaughtered pigs and horses.

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

Frequency of the sampling

General

Every pig slaughtered at slaughtery in Slovak republic is sampled in accredited laboratory according to Commission Regulation 2075/ 2005.
Every slaughtered wild boar intended to human consumption is sampled in compliance with Commission Decision 2075/ 2005. Samples are taken immediately after slaughgter.

Type of specimen taken

General

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

Methods of sampling (description of sampling techniques)

General

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

Case definition

General

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.
Positive results - in case of finding Trichinella spp.

Diagnostic/ analytical methods used

General

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

Control program/ mechanisms

The control program/ strategies in place

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

Recent actions taken to control the zoonoses

Carcasses and parts of carcasses and slaughter by-products containing the striated musculature from carcasses from which the samples for Trichinella examination were taken, must not leave the premises prior to completion the examination with a negative result. The parts of carcasses not containing the striated musculature are not subject to restriction.
In the year 2007 the reporting duty of performing home slaughters was introduced. Totally 50 % of notified pigs were examined. Based on the risk assessment of trichinellosis occurrence in pigs slaughtered in a breeder for domestic consumption and based on results from the previous examinations and monitoring, including wild animals, the samplings were limited only to areas with a positive finding of Trichinella sp. in wild animals.

Measures in case of the positive findings or single cases

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

The contingency plan in place

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

Notification system in place

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

Results of the investigation including description of the positive cases and the verification of the Trichinella species

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 2007, 11 samples in horses were investigated. All samples were negative.

Control program/ mechanisms

The control program/ strategies in place

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

Recent actions taken to control the zoonoses

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

Measures in case of the positive findings or single cases

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

Notification system in place

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

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

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

Relevance of the findings in animals to findings in foodstuffs and to human cases (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,SVI,SVFA	animal	1063448	0			
Solipeds, domestic							
horses	SVFI	animal	11	0			
Wild boars							
wild	SVFI,SVI	animal	11978	5		2	3
Foxes (1)	PI SAS	animal	601	123	3		122
Bears	SVFI,SVI	animal	17	0			
Badgers	PI SAS	animal	2	0			
Deer							
wild							
fallow deer	SVFI	animal	1	0			
roe deer	SVFI	animal	2	0			
Raccoon dogs	PI SAS	animal	2	0			
Marten	PI SAS	animal	3	0			
Wolves	PI SAS	animal	2	0			

(1) : 2 samples with result T.spiralis and T.britovi

Footnote

PI SAS - Parasitological Institute of Slovak Academy of Sciences

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 in the disease caused by tapeworms of the genus Echinococcus. Cystic echinococcosis is caused by the tapeworm E. granulosus parasitizing dogs and alveolar echinocossis caused by E. multilocularis parasitizing red foxes and other carnivora. Transmission is performed through contact with infested animals that excrete the eggs in the faeces (dog, cat) or by contaminated food. Larval stages of the tapeworm are located mainly in the liver, less in other organs and form cysts (E. granulosus) or infiltratively intergrow the parenchyma of the organ (E. multilocularis).
Cystic echinococcosis (caused by the genus Echinococcus granulosus) occurs in Slovakia in number of 1-10 cases yearly. It is confirmed by combination of serological and display methods. In pigs the prevalence has a decreasing tendency, from 4 % of positive pigs in 1971 it dropped to 0,12 % in 2003 and in 2007 to 0,03% of positive pigs.
Alveolar echinococcosis (caused by the genus Echinococcus multilocularis) was diagnosed for the last time in 2006 in 2 people (in a woman from the region of East Slovakia, aged 31 years and a girl from the region of Central Slovakia, aged 13 years).
The first cases of the occurrence of E. multilocularis in foxes were detected in Slovakia in 1999.
The organs of animals slaughtered in fresh meat establishments are regularly controlled for the presence of Echinococcus larvocysts .

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

The highest share in spreading of echinococcosis has – as a definite host – the red fox. Adult tapeworms echinococcus are found in large numbers during autopsy of foxes. In 2004, totally 148 echinococci were found (out of 472 examined - 31,36%), in 2005 it was totally 108 out of 289 examined (37,37%), in 2006 out of 930 examined totally 342 were positive for Echinococcus multilocularis (36,77%). In 2007 echinococci finding was confirmed in 103 foxes out of 570 examined (18,07%).
Larvocysts of echinococcus (E.granulosus) are detected in cattle, sheep, goats and also in pigs. E.granulosus in cattle increased from 1 case in 2003 to 45 cases in 2004 and decreased to 21 cases in 2005. In 2007 there were only 2 cases. In sheep and goats totally 1951 cases were found out in 2003, in 2004 there were only 26 cases, in 2005 there were only 16 cases and in 2006 only 2 cases. In 2007 there was again an increase in the number of positive findings as much as 121 cases. In pigs the number of positive cases decreases little by little from 1681 in 2003 to 1313 in 2004, in 2005 totally 537 cases and in 2007 only 336 cases were recorded.

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

The eggs of Echinococcus sp. are spread through definite hosts – dogs, foxes and other carnivora. Contaminated environment, forest fruits, vegetable and non-compliance with hygiene principles are the main risk factors of transmission of this zoonosis. Regular controls of carnivore faeces focused on detection of the presence of adult tapeworms and controls focused on the presence of larval forms in

the meat of animals slaughtered in fresh meat establishments are important for determination of risk areas.

Recent actions taken to control the zoonoses

Organs of animals slaughtered in slaughterhouses are controlled for the presence of Echinococcus larvocysts. The occurrence of Echinococcus multilocularis in red foxes and other carnivora is monitored by the Parasitological Institute of the Slovak Academy of Sciences.
A. Monitoring
Sampling strategy
Intestines of foxes intended for rabies examination are after completion the examination sent to the Parasitological Institute of the Slovak Academy of Sciences.
Meat of animals slaughtered in slaughterhouses is subject to the examination for the presence of Echinococcus larvocysts within the veterinary inspection.
Routine diagnostics of dog and other carnivore faeces includes also the examination for the presence of adult tapeworm Echinococcus.
Frequency of the sampling
All animals considered as intermediate hosts, slaughtered in slaughterhouses of the SR, are examined for the presence of Echinococcus larvocysts.
Type of specimen taken
Faeces or intestine of definite hosts, cysts from intermediate hosts.
Methods of sampling (description of sampling techniques)
Examination of the meat of animals slaughtered in slaughterhouses for the presence of larvocysts by adspection method.
Fox intestines are sent after the examination for rabies into a laboratory in a frozen state (at -18°C).
Fresh animal faeces is sent directly to a laboratory.
Case definition / definition of a positive finding
The sample is considered to be positive in case of finding tapeworms Echinococcus sp. in a definite host or Echinococcus larvocyst in intermediate host.
Diagnostic / analytical methods
The meat of slaughtered animals - by adspection method, microscopical examination of larvocyst content
Faeces (intestine content) of carnivora – microscopical examination, flotation examination, PCR
Vaccination policy
Does not exist.
B. Control programme/ mechanism
Control programme/ mechanism
Veterinary control of the meat of animals slaughtered in slaughterhouses.
Measures in case of the positive findings or single cases
The meat of positive animals is excluded from the food chain.

2.9.2. Echinococcosis in humans

A. Echinococcus spp. in humans

Case definition

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

Diagnostic/ analytical methods used

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

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

Sporadic or rare cases.

2.9.3. Echinococcus in animals

Table Echinococcus in animals

	Source of information	Sampling unit	Units tested	Total units positive for Echinococcus spp.	E. multilocularis	Echinococcus spp., unspecified
Cattle (bovine animals)	SVFA	animal	81953	2		2
Sheep	SVFA	animal	86593	121		121
Pigs	SVFA	animal	1063448	336		336
Dogs	SVFI, SVI	animal	1075	0		
Cats	SVFI, SVI	animal	273	0		
Foxes	PI SAS	animal	570	103	103	

Footnote

PI SAS - Parasitological Institute of Slovak Academy of Sciences

2.10. TOXOPLASMOSIS

2.10.1. General evaluation of the national situation

A. Toxoplasmosis general evaluation

History of the disease and/ or infection in the country

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

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

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

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

The overview of epizootological situation enables to elaborate disease surveillance for the SR.
A total of 286 samples in 2006 were tested; in 2007 the number of tested samples had increased by 289. Generally, in both years cats had shown the same level of positivity (20%), as regards dogs there had been an increase in the number of positive cases from 37,3% to 50,6%. High positivity (58,4%) was found in goats because they are raised near to human dwellings that present a main source of infection. An interesting finding was revealed by monitoring 124 field hare samples, where no positive serologic test reagent was found.
Blood sampling is conducted by private veterinarians in regional veterinary ambulances either on request of animal owners or in connection with a targeted suspicion of the disease. It is always a matter of individual sampling, not centrally managed and has nothing to do with official samples.
Sampling frequencies are not of a continuous sequence; they are set by the current epizootological situation and on individual requests of breeders of domestic and farm animals.

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

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

The aim of selective sampling is to prevent disease within the animal breeding in shared households as well as preventive examinations of farm animals intended for human consumption. Before all others, there is a major interest in testing sheep and goats which is related to establishing backyard farms in the countryside and followed by consumption of products thereof.
The aim of suspect sampling is testing for dogs and cats because of:
- disease occurrence in humans under households and after having undergone treatment for the disease;
- presence of pregnant women;
- abortion and low viable animal fetuses.

Recent actions taken to control the zoonoses

In the SR, there is no official monitoring program for diagnostics of toxoplasmosis and this zoonosis is not under notifiable diseases.
The preventive measures to be taken depend on the definitive host. Because most cats become infected with tissue cysts and to avoid this fact, cats should be fed dry, heat-treated granules or cooked food. Setting priorities for human population should be keeping hands clean and not eating any raw meat.

2.10.2. Toxoplasmosis in humans

2.10.3. Toxoplasma in animals

Table Toxoplasma in animals

	Source of information	Sampling unit	Units tested	Total units positive for Toxoplasma	T. gondii
Cattle (bovine animals)	SVFI	animal	10	1	1
Sheep	SVFI	animal	2	0	
Goats	SVFI	animal	53	31	31
Solipeds, domestic	SVFI	animal	2	0	
Dogs	SVFI	animal	160	81	81
Cats	SVFI	animal	219	47	47
Birds	SVFI	animal	2	0	
Rabbits	SVFI	animal	124	0	
Zoo animals, all	SVFI	animal	1	0	

Footnote

* blood samples

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

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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	4	0			
Sheep	SVI, SVFI	animal	1	0			
Goats	SVI, SVFI	animal	2	0			
Dogs	SVI, SVFI	animal	285	0			
Cats	SVI, SVFI	animal	159	0			
Bats							
wild	SVI, SVFI	animal	1	0			
Foxes							
wild	SVI, SVFI	animal	3747	0			
Badgers							
wild	SVI, SVFI	animal	6	0			
Marten							
wild	SVI, SVFI	animal	16	0			
Wild boars							
wild	SVI, SVFI	animal	8	0			
Deer							
wild							
roe deer	SVI, SVFI	animal	3	0			
red deer	SVI, SVFI	animal	3	0			
Bears	SVI, SVFI	animal	1	0			
Squirrels	SVI, SVFI	animal	6	0			
Mice	SVI, SVFI	animal	6	0			
Dormice	SVI, SVFI	animal	1	0			
Rats	SVI, SVFI	animal	19	0			
Polecats	SVI, SVFI	animal	1	0			
Moles	SVI, SVFI	animal	1	0			
Hedgehogs	SVI, SVFI	animal	1	0			
Lynx	SVI, SVFI	animal	1	0			
Hares	SVI, SVFI	animal	1	0			
Wild animals (1)	SVI, SVFI	animal	12	0			
Poultry, unspecified	SVI, SVFI	animal	12	0			

Ferrets	SVI, SVFI	animal	3	0			
Hamsters	SVI, SVFI	animal	4	0			
Rabbits	SVI, SVFI	animal	3	0			
Pet animals, all (2)	SVI, SVFI	animal	2	0			

(1) : unspecified wild animals
(2) : unspecified pet animals

2.12. Q-FEVER

2.12.1. General evaluation of the national situation

2.12.2. Coxiella (Q-fever) in animals

Table Coxiella burnetii (Q fever) in animals

	Source of information	Sampling unit	Units tested	Total units positive for Coxiella (Q-fever)	C. burnetii
Cattle (bovine animals)	SVFI, SVI	animal	7587	224	224
Sheep	SVFI, SVI	animal	3758	3	3
Goats	SVFI, SVI	animal	227	0	
Pigs	SVFI, SVI	animal	6	0	
Solipeds, domestic					
horses	SVFI, SVI	animal	24	0	
Rabbits	SVFI, SVI	animal	123	0	
Birds	SVFI, SVI	animal	3	0	
Wild animals	SVFI, SVI	animal	85	0	
Zoo animals, all	SVFI, SVI	animal	15	0	

Footnote

All samples were investigated serologically.

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1. ENTEROCOCCUS, NON-PATHOGENIC

3.1.1. General evaluation of the national situation

3.1.2. Antimicrobial resistance in Enterococcus, non-pathogenic isolates

3.2. ESCHERICHIA COLI, NON-PATHOGENIC

3.2.1. General evaluation of the national situation

A. Escherichia coli general evaluation

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

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

3.2.2. Antimicrobial resistance in Escherichia coli, non-pathogenic 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	129	3	126		1	2
Fishery products which have undergone enzyme maturation treatment in brine	SVFI	batch	10g	1	1				1

4.2. ENTEROBACTER SAKAZAKII

4.2.1. General evaluation of the national situation

4.2.2. Enterobacter sakazakii in foodstuffs

A. Enterobacter sakazakii in foodstuffs

Monitoring system

Sampling strategy

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

Frequency of the sampling

- in accordance with target plan

Type of specimen taken

Other: foodstuffs for children, infant formula

Diagnostic/ analytical methods used

ISO/ DTS 22964 Detection of Enterobacter sakazakii

Results of the investigation

All investigated samples were negative for Enterobacter sakazakii.

Table Enterobacter sakazakii in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Enterobacter sakazakii	E. sakazakii
Infant formula						
dried	PHA	single	10g	570	0	
Foodstuffs intended for special nutritional uses						
dried dietary foods for special medical purposes intended for infants below 6 months	PHA	single	10g	244	0	

4.3. STAPHYLOCOCCAL ENTEROTOXINS

4.3.1. General evaluation of the national situation

A. Staphylococcal enterotoxins general evaluation

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

All obtained data originate from the State Veterinary and Food Institutes and from the State Veterinary Institute in Slovakia. The statistical overview was elaborated by the National reference laboratory for Coagulase positive Staphylococci, including Staphylococcus aureus in Dolný Kubín. Samples comprised of official samples taken by inspectors of veterinary and food administrations according to the valid rules for the year 2007 and from private samples which were delivered for examination within the own check. All samples were examined by valid international methods for determination of number of coagulase positive staphylococci (STN EN ISO 6888-1 and 6888-2) and the presence of enterotoxins (Official methods for laboratory diagnostics of food and feed, Part Microbiology: M15, M41, M50 and the European screening method - May 2006 as amended and supplemented – November 2007). The samples comprised of one sampling unit or 5 sampling units according to requirements of an applicant and according to the quantity of sample taken.
Most data concerning the genus Staphylococcus and staphylococcal enterotoxins have a link with milk and milk products. It is very complex to evaluate the last 5 years because the legislation was emended (the Regulation 2073/ 2005 entered into force, as amended and supplemented by Regulation 1441/ 2007). In the last 5 years the number of examined samples for determination of the number of coagulase positive staphylococci had rapidly fallen. The number of non-compliant samples for the last 5 years has neither increasing nor decreasing tendency. The number of examined samples for the presence of enterotoxins had also decreasing tendency for the past 5 years. The number of positive samples has neither increasing nor decreasing tendency.
In 2007, it was proceeded according to the valid Regulation 2073/ 2005, where two types of microbiological criteria were established – food safety criterion and process hygiene criterion. Determination of number of Stahylococcus aureus belongs to process hygiene criteria, in case of detection of limits exceeding 105 KTJ/ g the batch is examined for the presence of enterotoxine, which is a food safety criterion. According to this criteria it must not be present in products placed on the market during the period of their shelf-life.
Among the most frequent commodities containing exceeding numbers of coagulase positive staphylococci belonged sheep cheeses, manly cheeses from non-pasteurized milk, with a lower frequency traditional sheep milk cheese “bryndza”, from other foodstuffs – steamed dumpling. In majority of the afore-said commodities with exceeded numbers the presence of staphylococcal enterotoxins was not determined, as values did not exceed the limit 105 KTJ/ g. In case that the presence of staphylococcal enterotoxins was examined, the result was negative.
Among commodities where the presence of staphylococcal enterotoxins was determined belonged cheeses from raw, low heat-treated or pasteurized milk. Totally 94 cheeses were examined. Out of other food commodities only one fish product was examined. The presence of staphylococcal enterotoxins was detected in 5 samples of cheeses from raw or low-heat-treated milk. The samples in question were mostly on a request of a customer examined directly for the presence of staphylococcal enterotoxins.

Recent actions taken to control the hazard

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

4.3.2. Staphylococcal enterotoxins in foodstuffs

A. Staphylococcal enterotoxins in foodstuffs

Monitoring system

Frequency of the sampling

according to work out a plan taking of samples

Type of specimen taken

Other: according Commission Decision 2075/ 2005, cheeses

Definition of positive finding

demonstration of presence of enterotoxin

Diagnostic/ analytical methods used

ELISA

Preventive measures in place

retire of foodstuffs from market network

Notification system in place

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

Relevance of the findings in foodstuffs to human cases (as a source of human 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					
soft and semi-soft					
made from pasteurised milk (1)	SVFI	batch	25g	10	0
made from raw or low heat-treated milk (2)	SVFI	batch	1g	7	0
Cheeses made from sheep's milk					
soft and semi-soft					
made from raw or low heat-treated milk (3)	SVFI	batch	1g	45	0
made from pasteurised milk	SVFI	batch	1g	3	0
Fishery products, unspecified	SVFI	single	25g	1	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	single	25g	24	5
hard					
made from pasteurised milk	SVFI	single	25g	2	0

(1) : 4 samples tested as single sample
(2) : 3 samples tessted as single sample
(3) : 14 samples tested as single sample

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).
The epidedemics reported: all verified and possible foodborne outbreaks

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.
In 2007 there were recorded 114 epidemics. Out of these epidemics 97 cases were posssible and 17 cases were verified outbreaks.
Food-borne viruses: 32,5%
Salmonella : 29,8%
Unknown causative agent: 25,4%
Salmonella:
- 300 small epidemics (1-9 cases in one outbreak), when were affected 1133 persons.
- 34 general outbreaks (from 10 to 143 cases in one outbreak), when were affected 1039 persons.

verified: 8 outbreaks, 284 persons
Staphylococcus enterotoxin:
Total: 7 outbreaks, 241 persons
Within one epidemic were recorded the most 75 cases.
verified: 5 outbreaks, 186 persons
Enterobacter: 2 oubreaks, verified
Citrobacter: 1 outberak, verified

Bacillus cereus: 1 outbreak, verified
Trichinellosis: 1 outbreak , possible
Food-borne viruses: 37 outbreaks, 1428 persons, possible outbreaks
Within one epidemic were recorded the most 151 cases.
Unknown causative agent: 29 outbreaks, 747 persons
Within one epidemic were recorded the most 125 cases.

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

agent: Salmonella enteritidis
- mayonaisse from raw eggs and eggs products (desserts), which are preparing by insufficient temperature and/ or inadequate period of time, which are needed to kill Salmonella
agent: Staphylococcus aureus
- mixed foods
agent: Bacillus cereus
- mixed foods
agent: other agents (Citrobacter, Enterobacter)
- mixed foods
agent: Trichinella
- raw meat products, which are preparing by insufficient temperature and/ or inadequate period of time, which are needed to kill Trichinella

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

Salmonella enteritidis:
- mainly households (family celebrations) canteens and school canteens
Staphylococcus aureus:
- mainly canteens and school canteens
Other (Citrobacter, Enterobacter) – miscellaneous
Foodborne viruses – nursery houses

Evaluation of the severity and clinical picture of the human cases

- within outbreak most frequently clinical signs in clinical picture of affected patients
No death cases were recorded.
70 cases were hospitalized

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.

Foodborne Outbreaks: summarized data

	Total number of outbreaks	Number of possible outbreaks	Number of verified outbreaks
Bacillus	1	0	1
Campylobacter	0	0	0
Clostridium	0	0	0
Escherichia coli, pathogenic	0	0	0
Foodborne viruses	37	37	0
Listeria	0	0	0
Other agents	5	2	3
Parasites	1	1	0
Salmonella	34	26	8
Staphylococcus	7	2	5
Unknown	29	29	0
Yersinia	0	0	0

Verified Foodborne Outbreaks: detailed data

B. cereus

	Value
Code	A05
Subagent Choice	
Outbreak type	General
Human cases	14
Hospitalized	0
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	risotto
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food, Laboratory characterization of isolates
Setting	Other setting
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

Enterobacter

	Value
Code	A04
Subagent Choice	
Outbreak type	General
Human cases	27
Hospitalized	0
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Laboratory characterization of isolates, Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	low hygienic standards in establishment

Enterobacter

	Value
Code	A04
Subagent Choice	
Outbreak type	General
Human cases	47
Hospitalized	0
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food, Laboratory characterization of isolates
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

Other

	Value
Code	A04
Subagent Choice	
Outbreak type	General
Human cases	47
Hospitalized	0
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases, Laboratory characterization of isolates
Setting	Other setting
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	causative agent: Citrobacter, contributory factor :deficiency in food preparation, setting : prison

PT 13

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	21
Hospitalized	5
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	cakes from domestic eggs
Type of evidence	Laboratory detection in human cases, Laboratory characterization of isolates, Laboratory detection in implicated food
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

PT 8

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	80
Hospitalized	5
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases, Laboratory characterization of isolates
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	deficiency in food prepation

S. Enteritidis

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	34
Hospitalized	18
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	mayonnaise from domestic eggs
Type of evidence	Laboratory characterization of isolates, Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	deficiency in food preparation

S. Enteritidis

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	20
Hospitalized	6
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	mayonnaise from raw eggs - commercial network
Type of evidence	Laboratory characterization of isolates, Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown, Inadequate heat treatment
Outbreaks	1
Comment	deficiency in food preparation

S. Enteritidis

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	62
Hospitalized	15
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	apple pie
Type of evidence	Laboratory detection in human cases, Laboratory characterization of isolates, Laboratory detection in implicated food
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	deficiency in food preparation

S. Enteritidis

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	45
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	apple pie with mousse from eggs
Type of evidence	Laboratory characterization of isolates, Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	deficiency in food preparation

S. Enteritidis

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	10
Hospitalized	3
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	cakes
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases, Laboratory characterization of isolates
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	deficiency in food preparation

S. Enteritidis

	Value
Code	A02
Subagent Choice	
Outbreak type	General
Human cases	12
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	cakes from raw eggs
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases, Laboratory characterization of isolates
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient, Inadequate heat treatment
Outbreaks	1
Comment	

S. aureus

	Value
Code	A05
Subagent Choice	
Outbreak type	General
Human cases	24
Hospitalized	3
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	goulash with pasta
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases, Laboratory characterization of isolates
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	deficiency in food preparation

S. aureus

	Value
Code	A05
Subagent Choice	
Outbreak type	General
Human cases	12
Hospitalized	7
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Laboratory characterization of isolates, Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Take-away or fast-food outlet
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

S. aureus

	Value
Code	A05
Subagent Choice	
Outbreak type	General
Human cases	44
Hospitalized	0
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	vegetable soup with dumplings
Type of evidence	Laboratory characterization of isolates, Laboratory detection in human cases, Laboratory detection in implicated food
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

S. aureus

	Value
Code	A05
Subagent Choice	
Outbreak type	General
Human cases	31
Hospitalized	1
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases, Laboratory characterization of isolates
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	deficiency in food preparation

S. aureus

	Value
Code	A05
Subagent Choice	
Outbreak type	General
Human cases	75
Hospitalized	3
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases, Laboratory characterization of isolates
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	