

# **SLOVENIA**

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 and antimicrobial resistance in zoonotic agents

IN 2005

# INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: Slovenia

Reporting Year: 2005

# Institutions and laboratories involved in reporting and monitoring:

Laboratory	Description	Contribution
name		
Institute of Public	Researches	Monitoring program-preparing
Health of the	Laboratory	Collect data in humans Scientific
Republic of		advice and support
Slovenia		Analysis and testing
IPHRS		
Health	Competent authority	Monitoring program-preparing
Inspectorate of		Collect data in food
the Republic of		Epidemiological investigation
Slovenia		
HIRS		
National	Researches	Scientific advice and support
Veterinary	Laboratory	Analysis and testing
Institute		
NVI		
Regional Institute	Epidemiology	Monitoring program-to take part in
of of Public	Laboratory	preparing
Health of		Epidemiological investigation
Maribor		Analysis and testing
Veterinary	Competent authority	Monitoring program -preparing
Administration of		Collect data in animals, food, feed
the Republic of		Epidemiological investigation
Slovenia		National report-preparing
VARS		Contact point for contacts with EC

#### **PREFACE**

This report is submitted to the European Commission in accordance with Article 9 of Council Directive 2003/99/EC<sup>1</sup>. 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 Slovenia during the year 2005. 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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<sup>&</sup>lt;sup>1</sup> Directive 2003/99/EC of the European Parliament and of the Council of 12 December 2003 on the monitoring of zoonoses and zoonotic agents, amending Decision 90/424/EEC and repealing Council Directive 92/117/EEC, OJ L 325, 17.11.2003, p. 31

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#### 1. ANIMAL POPULATIONS

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

# A. Information on susceptible animal population

#### **Sources of information:**

Source:

Livestock numbers and number of holdings: Statistical office of the Republic of Slovenia Number of slaughtered animals: Veterinary Administration of the Republic of Slovenia

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

Reference date

Livestock numbers and number of holdings: Reference date is the date the obtained data refer to.

The reference date of this survey was 1 June 2003.

Number of slaughtered animals: The number of slaughtered animals in 2004

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

Definitions and other explanations

Agricultural holding is a single unit, both organisational and operating, of agricultural area utilised, forests, buildings, equipment and labour force, which has a single management and which is engaged in agricultural production.

# **Additional information**

#### METHODOLOGICAL EXPLANATIONS

The purpose of the survey

The Farm Structure Survey (FSS) is one of the basic statistical surveys in the field of agriculture. In accordance with EU regulation it is conducted as a census every 10 years. Between censuses it can be conducted as a sample survey.

Within the framework of FSS 2003 regular annual survey on Areas Sown and Number of Livestock was carried out.

Observation units

Observation units are agricultural holdings satisfying the criteria of EU comparable threshold and all agricultural enterprises and co-operatives.

Data on agricultural enterprises and co-operatives were collected by questionnaire by post.

# **Table Susceptible animal populations**

\* Only if different than current reporting year

Animal species	Category of animals	Numbe		Numbe		Livesto	ck	Numbe	
		herds o	r	holding	js –	number			ered
		flocks				, -		animals	
			_		_	animals	s)		_
			Year*		Year*		Year*		Year*
Cattle (bovine animals)	calves (under 1 year)			34699	2003	139962	2003		
	young cattle (1-2 years)			31635	2003	116691	2003		
	adult cattle over 2 years			41038	2003	221677	2003		
	in total			46736	2003	478331	2003	154767	
Ducks	in total			2373	2003	20304	2003		
Gallus gallus (fowl)	laying hens			47888	2003	1387408	2003		
	broilers			4894	2003	2604304	2003	26753634	
Geese	in total			713	2003	3862	2003		
Goats	in total			3974	2003	28690	2003	251	
Pigs	breeding animals			8477	2003	68566	2003		
	fattening pigs			33008	2003	228456	2003		
	in total			39484	2003	607881	2003	430632	
Sheep	in total			5281	2003	119631	2003	11221	
Solipeds, domestic	horses - in total			4728	2003	16879	2003	1728	
Turkeys	in total			1365	2003	310285	2003	648813	

## **Footnote**

Source:

Number of holdings, Livestock numbers: Statistical office of the Republic of Slovenia Number of slaughtered animals: Veterinary Administration of the Republic of Slovenia

# 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

After the second World War only Salmonella Typhi and Paratyphi were notified. In 1950-s Salmonella Typhi and Paratyphi infections were more and more rare, other Salmonella serotypes were more and more frequent.

From 1946 to 1953 3414 cases of Salmonella Typhi and 3415 cases of Salmonella Paratyphi were notified. Among them 180 patients with Salmonella Typhi and 41 patients with Salmonella Paratyphi died.

After year 1953 epidemiological situation changed. More other Salmonella serotypes (Salmonella Typhimurium, Choleraesuis, Enteritidis etc.) were identified and less Salmonella Typhi and Paratyphi.

From the year 1954 to 2000 188 serotypes of Salmonella were identified and 82742 notifications of Salmonella gastroenteritis in Slovenia.

In last years Salmonella Enteritidis encounters more than 90% of Salmonella isolates in Slovenia.

Salmonella Typhi, S.Paratyphi are notified only as imported infections.

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

The number of notified human Salmonella cases declined from 3307 notifications in 2004 to 1519 in 2005. The incidence of notified Salmonella cases dropped to 76 per 100 000 inhabitants.

The average number of notified Salmonella cases in last 5 years in Slovenia was 2655 cases, the highest number was in year 2003 - 4005 cases.

Most frequent serotypes are: Salmonella Enteritidis, Salmonella Typhimurium, Salmonella Infantis, Salmonella Coeln.

The real burden of Salmonella human infections is unknown, because we collate data on notificated cases.

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

The incidence of human Salmonella infections has recently decreased according to notificated number of Salmonella human cases.

Source of infection are probably still poultry and eggs, but also bad hygiene and lack of knowledge of mode of transmission or prevention of infection.

#### **Additional information**

Antimicrobial susceptibility testing

Antimicrobial susceptibility of veterinary isolates was tested by NRL-Salmonella. Of the 18 or 19 antimicrobials tested no resistance was detected only to cehpotaxim and ciprofloxacin. Of the 14 strains from feedingstufs only 2 strains were resistant, each to one antimicrobial (nalidixic

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acid and sptreptomycin). Of the 58 strains isolated from animals, 41 were isolated from food producing animals and 17 from others. In food producing animals 9 strains (22%) were resistant (from 1 to 9 of the 18 antimicrobials tested). Of the 61 strains, isolated from foodstuffs, 34 strains (56%) were resistant (from 1 to 15 of the 18 or 19 antimicrobials tested). Interestingly a multiresistant strain (to 9 of the 18 antimicrobials tested) of S. Typhimuirum was isolated also from rabbit meat. Of the 39 strains, isolated from the environment (not presented in the report), 7 strains (18%) were resistant (from 1 to 14 of the 18 antimicrobials tested).

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#### 2.1.2. Salmonella in foodstuffs

# A. Salmonella spp. in eggs and egg products

# **Monitoring system**

## Sampling strategy

Monitoring at retail

Annual monitoring programme was prepared with respect to the results of programme/controls carried out in the previous year, epidemiological situation, Commission Recommendation concerning a coordinated programme for the official control of foodstuffs.

The majority of samples were taken in cities with 10000 inhabitants or more and number of samples taken was proportional with the population in the region.

There were taken at the retail level where sampling could give an overview over the situation.

Sampling carried out by health inspectors.

Programme: 100 samples of table eggs.

# Frequency of the sampling

### Eggs at retail

Sampling takes place during the months February - August

### Egg products (at production plant and at retail)

Other: none

#### Type of specimen taken

### Eggs at egg packing centres (foodstuff based approach)

Other: /

#### Eggs at retail

Surface of egg shell

#### Egg products (at production plant and at retail)

Other: /

# Methods of sampling (description of sampling techniques)

# Eggs at retail

A sample weighing approximately 300 g or 10 eggs is/are stored in a sterile bag or other sterile container. Samples must be delivered to the laboratory in the shortest time possible, and normally, immediately upon sampling. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The

transportation must be done not over +4 oC.

102 samples were taken in Year 2005. One was positive on presence of Salomella enteritidis and one was detected only us Salmonella spp.

# **Definition of positive finding**

#### Eggs at retail

A sample from which Salmonella has been isolated.

# Egg products (at production plant and at retail)

/

# Diagnostic/analytical methods used

#### Eggs at retail

Bacteriological method: NMKL No 71:1999

# Egg products (at production plant and at retail)

Other: /

# Preventive measures in place

GMP, GHP, HACCP

# Measures in case of the positive findings

Additional samping was carried out and other necessary enforcement actions.

## **Notification system in place**

Whenever zoonotic agent-Salmonella is detected in samples taken, relevat authorities must be informed.

#### **Results of the investigation**

Within the monitoring programme 100 samples and 2 additional samples were taken.

# B. Salmonella spp. in broiler meat and products thereof

# **Monitoring system**

### **Sampling strategy**

#### At slaughterhouse and cutting plant

Poultry meat sampling is carried out in all the registered cutting plants. Sampling is carried out by the official veterinarians.

#### At retail

#### HIRS

Annual monitoring programme was prepared with respect to the results of programme/controls carried out in the previous year, epidemiological situation, Commission Recommendation concerning a coordinated programme for the official control of foodstuffs.

The majority of samples were taken in cities with 10000 inhabitants or more and number of samples taken was proportional with the population in the region.

There were taken at the retail level where sampling could give an overview over the situation.

Sampling carried out by health inspectors.

Programme: 100 samples of fresh meat per annum.

## Frequency of the sampling

### At slaughterhouse and cutting plant

Other: In poultry meat cutting plants, 1 poultry meat sample is taken every month

#### At retail

Sampling takes place during the months February - August

#### Type of specimen taken

# At slaughterhouse and cutting plant

Fresh meat

#### At retail

Fresh meat

#### **Methods of sampling (description of sampling techniques)**

# At slaughterhouse and cutting plant

A meat sample weighing approximately 300g is removed by a sterile instrument, and in poultry, the thoracic section is removed and stored in a sterile bag. Samples must be delivered to the laboratory in the shortest possible time, and normally, immediately upon sampling, i.e. within the same day. During

transport, samples must be chilled to +4 oC. Analyses should commence in the shortest possible time after sampling.

#### At retail

A sample weighing approximately 300 g is stored in a sterile bag or other sterile container. Samples must be delivered to the laboratory in the shortest time possible, and normally, immediately upon sampling. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The transportation must be done not over +4 oC.

#### **Definition of positive finding**

#### At retail

HIRS

A sample from which Salmonella has been isolated.

#### Diagnostic/analytical methods used

# At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

#### At retail

Bacteriological method: ISO 6579:2002

#### Preventive measures in place

GMP, GHP, HACCP

HIRS

At the moment food business operators introduce the system of additional labelling of poultry meat which includes special warning to the customers to treat poultry meat at requested temperature before any use.

# Measures in case of the positive findings or single cases

HIRS

Monitoring at retail:

Additional sampling was carried out and other necessary enforcement actions. Since product was no longer on the market at the time of receiving analytical results of samples taken at the retail level in all cases in house control was required.

### **Notification system in place**

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation and control results.

HIRS

Whenever zoonotic agent-Salmonella is detected in samples taken, relevat authorities must be informed.

# **Results of the investigation**

Sampling in cutting plants.

In 2005, 70 broiler meat samples were taken. Salmonella was not detected in the meat.

HIRS

Monitoring in retail:

Out of 106 samples of meat taken, 7.5% were positive on presence of Salmonella spp. Detailed evaluation of data shows that 2.8% of fowl/chicken were positive on presence of Salmonella enteritidis, 2.8% were positive on presence of Salmonella infantis, 0.9% were positive on presence of Salmonella carno.

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

Situation concerning Salmonella spp. in the fresh meat in production remains favourable also in 2005.

# C. Salmonella spp. in turkey meat and products thereof

# **Monitoring system**

# Sampling strategy

# At slaughterhouse and cutting plant

Poultry meat sampling is carried out in all the registered cutting plants. Sampling is carried out by the official veterinarians.

#### At retail

/

# Frequency of the sampling

# At slaughterhouse and cutting plant

Other: In poultry meat cutting plants, 1 poultry meat sample is taken every month

#### At retail

Other: /

#### Type of specimen taken

## At slaughterhouse and cutting plant

Fresh meat

#### At retail

Other: /

# **Methods of sampling (description of sampling techniques)**

#### At slaughterhouse and cutting plant

A meat sample weighing approximately 300g is removed by a sterile instrument, and in poultry, the thoracic section is removed and stored in a sterile bag. Samples must be delivered to the laboratory in the shortest possible time, and normally, immediately upon sampling, i.e. within the same day. During transport, samples must be chilled to +4 oC. Analyses should commence in the shortest possible time after sampling.

#### At retail

/

## **Definition of positive finding**

# At slaughterhouse and cutting plant

Positive sample is a sample, where the zoonotic agent has been isolated from. Isolation of agent in 25g.

#### At retail

/

# Diagnostic/analytical methods used

# At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

#### At retail

Other: /

### Preventive measures in place

GMP, GHP, HACCP

## Measures in case of the positive findings or single cases

/

## **Notification system in place**

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation and control results.

#### **Results of the investigation**

In 2005, 25 turkey meat samples were taken. Salmonella was not detected in the meat.

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

Situation concerning Salmonella spp. in the fresh meat in production remains favourable also in 2005.

On the basis of results obtained in production, the meat of domestic animals does not pose a threat to public health.

# D. Salmonella spp. in pig meat and products thereof

## **Monitoring system**

## Sampling strategy

## At slaughterhouse and cutting plant

Bovine and porcine meat samplingis carried out in all the registered cutting plants of industrial type (EU-approved).

#### At retail

/

# Frequency of the sampling

#### At slaughterhouse and cutting plant

Other: In the bovine and porcine meat cutting plants, 1 meat sample is taken every 2 months.

#### At retail

Other: /

## Type of specimen taken

# At slaughterhouse and cutting plant

Fresh meat

#### At retail

Other: /

# Methods of sampling (description of sampling techniques)

#### At slaughterhouse and cutting plant

A meat sample weighing approximately 300g is removed by a sterile instrument, and in poultry, the thoracic section is removed and stored in a sterile bag. Samples must be delivered to the laboratory in the shortest possible time, and normally, immediately upon sampling, i.e. within the same day. During transport, samples must be chilled to +4 oC. Analyses should commence in the shortest possible time after sampling.

#### At retail

/

## **Definition of positive finding**

### At slaughterhouse and cutting plant

Positive sample is a sample, where the zoonotic agent has been isolated from. Isolation of agent in 25g.

#### At retail

/

#### Diagnostic/analytical methods used

### At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

#### At retail

Other: /

## Preventive measures in place

GMP, GHP, HACCP

# Measures in case of the positive findings or single cases

/

#### **Notification system in place**

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation and control results.

### **Results of the investigation**

Sampling in cutting plants.

In 2005, 113 porcine meat samples were taken. Salmonella was not detected in the meat.

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

Situation concerning Salmonella spp. in the fresh meat in production remains favourable also in 2005.

On the basis of results obtained in production, the meat of domestic animals does not pose a threat to public health.

# E. Salmonella spp. in bovine meat and products thereof

### **Monitoring system**

#### Sampling strategy

## At slaughterhouse and cutting plant

Bovine and porcine meat samplingis carried out in all the registered cutting plants of industrial type (EU-approved).

#### Frequency of the sampling

#### At slaughterhouse and cutting plant

Other: In the bovine and porcine meat cutting plants, 1 meat sample is taken every 2 months.

#### Type of specimen taken

### At slaughterhouse and cutting plant

Fresh meat

# Methods of sampling (description of sampling techniques)

#### At slaughterhouse and cutting plant

A meat sample weighing approximately 300g is removed by a sterile instrument, and in poultry, the thoracic section is removed and stored in a sterile bag. Samples must be delivered to the laboratory in the shortest possible time, and normally, immediately upon sampling, i.e. within the same day. During transport, samples must be chilled to +4 oC. Analyses should commence in the shortest possible time after sampling.

### **Definition of positive finding**

### At slaughterhouse and cutting plant

Positive sample is a sample, where the zoonotic agent has been isolated from. Isolation of agent in 25g.

#### Diagnostic/analytical methods used

# At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

#### **Preventive measures in place**

GMP, GHP, HACCP

#### **Notification system in place**

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation and control results.

### **Results of the investigation**

Sampling in cutting plants.

In 2005, 107 bovine meat samples were taken. Salmonella was not detected in the meat.

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

Situation concerning Salmonella spp. in the fresh meat in production remains favourable also in 2005.

On the basis of results obtained in production, the meat of domestic animals does not pose a threat to public health.

# F. Salmonella spp. in food

#### **Monitoring system**

### Sampling strategy

HIRS

Monitoring at retail

Annual monitoring programme was prepared with respect to the results of programme/controls carried out in the previous year, epidemiological situation, Commission Recommendation concerning a coordinated programme for the official control of foodstuffs.

The majority of samples were taken in cities with 10000 inhabitants or more and number of samples taken was proportional with the population in the region.

There were taken at the retail level where sampling could give an overview over the situation.

Sampling carried out by health inspectors.

Programme: prepared dishes, cheeses, vegetables and fruits, fishery products, juice, spices and herbs, sprouted seeds, dehydrated soups, ice-cream, sandwiches… .

# Frequency of the sampling

Sampling takes place during the months February - September.

#### **Methods of sampling (description of sampling techniques)**

A sample weighing approximately 300 g is stored in a sterile bag or other sterile container. Samples must be delivered to the laboratory in the shortest time possible, and normally, immediately upon sampling. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The transportation must be done not over +4 oC.

### **Definition of positive finding**

A sample from which Salmonella has been isolated.

#### Diagnostic/analytical methods used

Bacteriological method: ISO 6579:2002;Cor.2004

#### **Preventive measures in place**

GMP, GHP, HACCP

#### Measures in case of the positive findings or single cases

Monitoring at retail

Additional sampling was carried out and other necessary enforcement actions.

#### **Notification system in place**

Whenever zoonotic agent-Salmonella monocytogenes is detected in samples taken, relevant authorities must be informed.

#### **Results of the investigation**

A total of 1425 samples were taken at restaurants, retai and catering. Salmonella was not detected in any sample.

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

Situation concerning Salmonella spp. in food in retail is favourable.

# G. Salmonella spp. in food - Meat from bovine animals and pig

#### **Monitoring system**

## Sampling strategy

#### HIRS

Annual monitoring programme was prepared with respect to the results of programme/controls carried out in the previous year, epidemiological situation, Commission Recommendation concerning a coordinated programme for the official control of foodstuffs.

The majority of samples were taken in cities with 10000 inhabitants or more and number of samples taken was proportional with the population in the region.

There were taken at the retail level where sampling could give an overview over the situation.

Sampling carried out by health inspectors.

Programme: 100 samples of minced meat(pig and/or bovine) meat per annum. It was taken one more sample (101).

#### Frequency of the sampling

Sampling takes place during the months from May to August.

#### **Methods of sampling (description of sampling techniques)**

A sample weighing approximately 300 g is stored in a sterile bag or other sterile container. Samples must be delivered to the laboratory in the shortest time possible, and normally, immediately upon sampling. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The transportation must be done not over +4 oC.

#### **Definition of positive finding**

A sample from which Salmonella has been isolated.

#### Diagnostic/analytical methods used

Bacteriological method: ISO 6579:2002

#### Preventive measures in place

GMP, GHM, HACCP

# Measures in case of the positive findings or single cases

Monitoring at retail

Additional sampling was carried out and other necessary enforcement actions.

# **Notification system in place**

Whenever zoonotic agent-Salmonella is detected in samples taken, relevat authorities must be informed.

# **Results of the investigation**

Monitoring at retail

Results show that only one sample was positive on presence of Salmonella.

# Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Infantis	S. Blegdam	S. Carno
Meat from broilers (Gallus gallus)											
fresh - at cutting plant - Monitoring - official sampling - objective sampling	VARS	single	25g	70	0						
meat preparation  intended to be eaten cooked (1)  Meat from turkey	HIRS	single	25g	106	8	3	0		3	1	1
fresh - at cutting plant - Monitoring - official sampling - objective sampling	VARS	single	25g	25	0						

<sup>(1):</sup> prepacked

# Table Salmonella spp. in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Cheeses made from cows' milk								
soft and semi-soft (1)	HIRS	single	25g	40	0			
Dairy products (excluding cheeses)								
ice-cream	HIRS	single	25g	237	0			

<sup>(1):</sup> Including hard cheeses

# Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Blockley
Meat from pig									
fresh									
<ul> <li>at cutting plant -</li> <li>Monitoring - official</li> <li>sampling - objective</li> <li>sampling</li> </ul>	VARS	single	25g	113	0				
Meat from bovine animals									
fresh									
<ul> <li>at cutting plant -</li> <li>Monitoring - official</li> <li>sampling - objective</li> <li>sampling</li> </ul>	VARS	single	25g	107	0				
Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos)									
meat products									
fermented sausages	HIRS	single	25g	20	0				
minced meat									
- at retail - Monitoring	HIRS	single	25	101	1				1

# Table Salmonella spp. in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Eggs					-	•		'
table eggs								
- at retail	HIRS	single	25g	102	2	1		1
Molluscan shellfish								
raw (1)	HIRS	single	25g	20	0			
Sprouted seeds	HIRS	single	25g	45	0			
Fruits and vegetables					<u>'</u>			
precut	HIRS	single	25g	67	0			
ready-to-eat (2)	HIRS	single	25g	40	0			
Infant formula	HIRS	single	25g	59	0			
Spices and herbs		'			'		'	
dried	HIRS	single	25g	40	0			
Sweets	HIRS	single	25g	265	0			
Other processed food products and prepared dishes			'			'		
unspecified	HIRS	single	25g	648	0			
sandwiches	HIRS	single	25g	40	0			
Fruits								
products (3)	HIRS	single	25g	21	0			
Other food	HIRS	single	25	78	0			

(1): prepacked(2): prepacked vegetables only(3): prepacked frozen

#### 2.1.3. 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)

Sampling shall be carried out in all breeding flocks including at least 250 birds. Animal owner or holder of activity of the hatchery shall at his own expense take samples for analysis in order to detect the presence of Salmonella. Sampling shall be carried out at poultry breeding holdings or in hatcheries. Every eight weeks the sampling carried out by the holder of activity in the adult breeding flocks shall be substituted by the official sampling, carried out by the official veterinarians.

#### Laying hens flocks

Sampling shall be carried out in all the flocks at holdings keeping laying hens, which include more than 200 birds. Sampling shall be carried out by the authorised veterinary organisations within the scope of the prescribed regular monitoring.

#### Frequency of the sampling

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

Every flock is sampled

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

Other: At four weeks of age and two weeks prior to entering the laying phase.

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

Every two weeks

#### Laying hens: Day-old chicks

Other: Sample of chicks found dead in a single day or of the bedding or faeces in case of the increased mortality (more than 0,5 % per day) upon arrival (on the introduction of birds into the accommodation facilities).

#### Laying hens: Rearing period

Other: Sample of chicks found dead in a single day or of the bedding or faeces in case of the increased mortality (more than 0,5 % per day) during the breeding period. Sample of chicks found dead in a single day or of the bedding or faeces in week 8 and 16 of age of the birds.

# Laying hens: Production period

Other: Sample of chicks found dead in a single day or of the bedding or faeces in case of the increased mortality (more than 0,5 % per day) during the laying period; sample of the bedding or faeces and a sample of table eggs (5 % or up to a maximum of 60 eggs) every 3 months in the laying phase.

# Type of specimen taken

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

Other: Sampling of the internal linings of the boxes in which the chicks have been delivered to the holding, and of the carcasses of chicks found dead on arrival.

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

Other: Pooled faeces samples 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.

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

Other: In accordance with Annex III of Council Directive 92/117/EEC

#### Laying hens: Day-old chicks

Other: Chicks found dead in a single day or of the bedding or faeces

#### Laying hens: Rearing period

Other: Chicks found dead in a single day or of the bedding or faeces

## **Laying hens: Production period**

Other: Sample of chicks found dead in a single day or of the bedding or faeces and a sample of table eggs

#### **Methods of sampling (description of sampling techniques)**

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

In accordance with Annex III of Council Directive 92/117/EEC.

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

In accordance with Annex III of Council Directive 92/117/EEC.

#### **Breeding flocks: Production period**

In accordance with Annex III of Council Directive 92/117/EEC.

# Laying hens: Day-old chicks

See frequency of the sampling

# Laying hens: Rearing period

See frequency of the sampling

## Laying hens: Production period

See frequency of the sampling

#### **Case definition**

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

Flock shall be considered positive where the causative agent has been identified in the confirmatory sample of the official sampling.

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

Flock shall be considered positive where the causative agent has been identified in the confirmatory sample of the official sampling.

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

Flock shall be considered positive where the causative agent has been identified in the confirmatory sample of the official sampling.

#### Laying hens: Day-old chicks

The disease shall be considered officially confirmed where the bacteriological investigation results, upon the examination of the dead bird carcasses and/or bedding and feed after the reported suspicion of disease on the basis of clinical signs, or the bacteriological investigation results of the monitoring for the salmonelloses in poultry have been positive; in the opposite case it shall be considered that the disease has officially been ruled out.

# Laying hens: Rearing period

The disease shall be considered officially confirmed where the bacteriological investigation results, upon the examination of the dead bird carcasses and/or bedding and feed after the reported suspicion of disease on the basis of clinical signs, or the bacteriological investigation results of the monitoring for the salmonelloses in poultry have been positive; in the opposite case it shall be considered that the disease has officially been ruled out.

#### **Laying hens: Production period**

The disease shall be considered officially confirmed where the bacteriological investigation results, upon the examination of the dead bird carcasses and/or bedding and feed after the reported suspicion of disease on the basis of clinical signs, or the bacteriological investigation results of the monitoring for the salmonelloses in poultry have been positive; in the opposite case it shall be considered that the disease has officially been ruled out.

### Diagnostic/analytical methods used

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

Other: Bacteriological method: Method in accordance with the OIE Manual, 5th ed., 2004; Modified ISO 6579: 2002 (Recommendation by the CRL)

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

Other: Bacteriological method: Method in accordance with the OIE Manual, 5th ed., 2004; Modified ISO 6579: 2002 (Recommendation by the CRL)

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

Other: Bacteriological method: Method in accordance with the OIE Manual, 5th ed., 2004; Modified ISO 6579: 2002 (Recommendation by the CRL)

## Laying hens: Day-old chicks

Other: Bacteriological method: Method in accordance with the OIE Manual, 5th ed., 2004; Modified ISO 6579: 2002 (Recommendation by the CRL)

### Laying hens: Rearing period

Other: Bacteriological method: Method in accordance with the OIE Manual, 5th ed., 2004; Modified ISO 6579: 2002 (Recommendation by the CRL)

#### **Laying hens: Production period**

Other: Bacteriological method: Method in accordance with the OIE Manual, 5th ed., 2004; Modified ISO 6579: 2002 (Recommendation by the CRL)

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# Vaccination policy

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

Vaccination of breeding flocks is voluntary.

#### Other preventive measures than vaccination in place

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

Persons, who in carrying out a registered activity of breeding or production come into direct contact with animals, foodstuffs, raw materials, products or waste, must have thorough knowledge in contagious animal diseases, the prevention thereof and transmissibility to man, and in the regulations governing the protection against contagious diseases. Animal holders must carry out preventive measures as for instance: providing potable water and feed that are fit for consumption; providing and maintaining the required conditions of hygiene in the animal breeding and auxiliary facilities; preventing the introduction into the breeding facilities of disease agents; implementing veterinary measures in the intensive animal rearing technology; handling as prescribed the animal carcasses and other waste, waste waters, faeces and urine; providing for the preventive disinfection, disinsectisation and deratisation (DDD) in the facilities, on public surfaces and in the means of transport.

#### Laying hens flocks

Persons, who in carrying out a registered activity of breeding or production come into direct contact with animals, foodstuffs, raw materials, products or waste, must have thorough knowledge in contagious animal diseases, the prevention thereof and transmissibility to man, and in the regulations governing the protection against contagious diseases. Animal holders must carry out preventive measures as for instance: providing potable water and feed that are fit for consumption; providing and maintaining the required conditions of hygiene in the animal breeding and auxiliary facilities; preventing the introduction into the breeding facilities of disease agents; implementing veterinary measures in the intensive animal rearing technology; handling as prescribed the animal carcasses and other waste, waste waters, faeces and urine; providing for the preventive disinfection, disinsectisation and deratisation (DDD) in the facilities, on public surfaces and in the means of transport.

#### **Control program/mechanisms**

#### The control program/strategies in place

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

National control programme is carried out in accordance with the national legislation, on the basis of the Rules on the monitoring of zoonoses and zoonotic agents in poultry breeding flocks (transposing Council Directive 92/117/EEC),

and the Instructions on measures for the detection, prevention and suppression of salmonellosis. The control programme envisages inter alia as follows:

Immediately upon the reported suspicion of disease at the suspect holding, the following shall be instituted on the basis of an expert instruction: banning the movements and alienation of animals susceptible to the disease; banning the issuing of health certificates for animals susceptible to the disease; banning the trade in eggs for consumption;

banning the slaughter of animals susceptible to the disease; restricting the movements of persons coming into contact with the infected animal or animal suspected of being infected, and providing for and maintaining the appropriate conditions of hygiene in the facilities.

Measures shall be instituted as long as the suspicion of disease has not officially been ruled out.

## Laying hens flocks

National control programme is carried out in accordance with the national legislation, on the basis of the Instructions on measures for the detection, prevention and suppression of salmonellosis. The control programme envisages inter alia as follows:

Implementation of monitoring and immediate confirmation of the disease in case of the suspected presence on the basis of clinical signs or detection of the disease in other animals at the same holding, by taking samples for the diagnostic purposes, epizootiological investigation, and instituting appropriate measures immediately upon suspecting the presence of disease at the suspect holding. Measures shall be instituted as long as the suspicion of disease has not officially been ruled out.

Instituting of supplementary measures in the infected holding.

#### Measures in case of the positive findings or single cases

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

On the official confirmation of disease, the following measures shall be instituted at the holding in addition to those instituted at the suspected presence of disease:

- incoming raw materials to constitute poultry feed shall be decontaminated by the appropriate procedure;
- premises, instruments and tools in the places of poultry feed production and storage shall be disinfected by the appropriate disinfectant;
- premises, installations, packaging and equipment in hatcheries and vehicles intended for the transport of poultry and eggs shall be disinfected by the appropriate procedure and disinfectant:
- hatching eggs shall be disinfected by the bactericidal gas immediately upon collection, as well as the hatchers;
- eggs placed in the hatcher on the same day shall be disinfected by the bactericidal gas on day 18 or 19;
- hatched poultry shall be disinfected by the bactericidal gas as long as it is still moist and in the hatcher:

- unhatched eggs, deformed hatchlings and other hatching waste shall be harmlessly disposed of;
- DDD measures shall be carried out in the infected poultry breeding facilities and in the facilities for the production of eggs and poultrymeat, and no later than the second day after disinfection, the bacteriological control of its efficiency shall be carried out;
- manure shall be removed from the perimeter of the holding, packed and not used for three months upon packing;
- poultry shall be treated by an appropriate antibiotic or chemotherapeutic agent on the basis of antibiogram, and
- other measures for sanitising the infected holding shall be implemented.

Measures instituted at the infected holding shall be lifted:

where the results of bacteriological investigations, carried out on days 5 and 10 after implementation of measures and completion of treatment, are negative.

# Laying hens flocks

On the official confirmation of disease, the following measures shall be instituted at the holding in addition to those instituted at the suspected presence of disease:

- incoming raw materials to constitute poultry feed shall be decontaminated by the appropriate procedure;
- premises, instruments and tools in the places of poultry feed production and storage shall be disinfected by the appropriate disinfectant;
- vehicles intended for the transport of poultry and eggs shall be disinfected by the appropriate procedure and disinfectant;
- DDD measures shall be carried out in the infected poultry breeding facilities and in the facilities for the production of eggs and poultrymeat, and no later than the second day after disinfection, the bacteriological control of its efficiency shall be carried out;
- manure shall be removed from the perimeter of the holding, packed and not used for three months upon packing;
- poultry shall be treated by an appropriate antibiotic or chemotherapeutic agent on the basis of antibiogram, and
- other measures for sanitising the infected holding shall be implemented.

Measures instituted at the infected holding shall be lifted:

where the results of bacteriological investigations, carried out on days 7 and 14 after implementation of measures and completion of treatment, are negative.

#### **Notification system in place**

Breeding flock: In case that by monitoring the presence of Salmonella in a breeding flock is detected, the holder of the flock must officially notify VARS of the results. The laboratory must submit the diagnostic test results to the Main Office of VARS. This method of reporting must be carried out in accordance with the provisions of the Rules on the monitoring of zoonoses and zoonotic agents in poultry breeding flocks (transposing Council Directive 92/117/EEC) since 2004, and prior to that date, the method of reporting diseases was used as prescribed in the Rules on contagious animal diseases.

Laying hens: In case of disease, the veterinary organisation must notify the relevant Regional Office of VARS, where the disease has been confirmed by the diagnostic test result. The report on the occurrence of disease is to be submitted on a monthly basis by the tenth day in a month

for the previous month.

The authorised laboratory submits the diagnostic test results to the relevant Regional Office of VARS, and to the consigner of samples.

Once a month and no later than the 20th day in the month, the authorised laboratories and Regional Offices of VARS must report on the diagnostic test results to the Office for Contagious Animal Diseases within VARS.

This method of reporting is carried out in accordance with the provisions of the Rules on contagious animal diseases (applicable since 2002), and the reporting as such has been compulsory since 1996.

#### **Results of the investigation**

BREEDING FLOCKS - animals intended for the production of hatching eggs

In 2005, 15 laying hen parent flocks were tested - on the hatching egg line, and thereof, 5 grand-parent flocks and 11 parent flocks. Salmonella was not detected in the grand-parent flocks, whilst the prevalence in the parent flocks amounted to 18 %. In the two positive flocks, Salmonella enteritidis was identified at production stage.

LAYING HEN FLOCKS - animals intended for the production of table eggs

In 2005, 130 flocks were tested, and thereof, 23 flocks during rearing period and 107 adult flocks at production stage. Salmonella was identified in 1 flock during rearing period and in 7 flocks at production stage, which amounts to 6.2 % of all flocks tested. Salmonella enteritidis was confirmed in 6 flocks (75 %), and S. Menden was identified in 1 flock.

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

BREEDING FLOCKS - animals intended for the production of hatching eggs

As compared to the preceding year, the presence of Salmonella on the hatching egg line was noted.

There is no change as regards the total number of positive parent flocks (egg and meat production line). Similarly as in 2004, Salmonella was identified in 3 parent flocks, amounting to 3.4 %.

LAYING HEN FLOCKS - animals intended for the production of table eggs

In 2005, an increase in Salmonella prevalence in laying hen flocks was noted, from 3.1 % to 6.2 %.

# 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)

Sampling shall be carried out in all breeding flocks including at least 250 birds. Animal owner or holder of activity of the hatchery shall at his own expense take samples for analysis in order to detect the presence of Salmonella. Sampling shall be carried out at poultry breeding holdings or in hatcheries. Every eight

weeks the sampling carried out by the holder of activity in the adult breeding flocks shall be substituted by the official sampling, carried out by the official veterinarians.

#### **Broiler flocks**

Twice a year, sampling shall be carried out in all the holdings rearing poultry for production - broilers. Sampling shall be carried out by the authorised veterinary organisations within the prescribed regular monitoring.

# Frequency of the sampling

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

Every flock is sampled

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

Other: At four weeks of age and two weeks prior to entering the laying phase.

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

Every two weeks

#### **Broiler flocks: Before slaughter at farm**

Other: Twice a year, sampling shall be carried out in all the holdings rearing poultry for production - broilers.

#### Type of specimen taken

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

Other: Sampling of the internal linings of the boxes in which the chicks have been delivered to the holding, and of the carcasses of chicks found dead on arrival.

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

Other: Pooled faeces samples 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.

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

Other: In accordance with Annex III of Council Directive 92/117/EEC.

# **Broiler flocks: Before slaughter at farm**

Other: Sample of bedding of the flocks.

## **Methods of sampling (description of sampling techniques)**

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

In accordance with Annex III of Council Directive 92/117/EEC.

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

In accordance with Annex III of Council Directive 92/117/EEC.

#### **Breeding flocks: Production period**

In accordance with Annex III of Council Directive 92/117/EEC.

#### Broiler flocks: Before slaughter at farm

See frequency of the sampling.

#### Case definition

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

Flock shall be considered positive where the causative agent has been identified in the confirmatory sample of the official sampling.

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

Flock shall be considered positive where the causative agent has been identified in the confirmatory sample of the official sampling.

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

Flock shall be considered positive where the causative agent has been identified in the confirmatory sample of the official sampling.

#### **Broiler flocks: Day-old chicks**

The disease shall be considered officially confirmed where the bacteriological investigation results, upon the examination of the dead bird carcasses and/or bedding and feed after the reported suspicion of disease on the basis of clinical signs, or the bacteriological investigation results of the monitoring for the salmonelloses in poultry have been positive; in the opposite case it shall

beconsidered that the disease has officially been ruled out.

# **Broiler flocks: Rearing period**

The disease shall be considered officially confirmed where the bacteriological investigation results, upon the examination of the dead bird carcasses and/or bedding and feed after the reported suspicion of disease on the basis of clinical signs, or the bacteriological investigation results of the monitoring for the salmonelloses in poultry have been positive; in the opposite case it shall be considered that the disease has officially been ruled out.

# Broiler flocks: Before slaughter at farm

The disease shall be considered officially confirmed where the bacteriological investigation results, upon the examination of the dead bird carcasses and/or bedding and feed after the reported suspicion of disease on the basis of clinical signs, or the bacteriological investigation results of the monitoring for the salmonelloses in poultry have been positive; in the opposite case it shall be considered that the disease has officially been ruled out.

# Diagnostic/analytical methods used

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

Other: Bacteriological method: Method in accordance with the OIE Manual, 5th ed., 2004; Modified ISO 6579: 2002 (Recommendation by the CRL)

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

Other: Bacteriological method: Method in accordance with the OIE Manual, 5th ed., 2004; Modified ISO 6579: 2002 (Recommendation by the CRL)

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

Other: Bacteriological method: Method in accordance with the OIE Manual, 5th ed., 2004; Modified ISO 6579: 2002 (Recommendation by the CRL)

## Broiler flocks: Before slaughter at farm

Other: Bacteriological method: Method in accordance with the OIE Manual, 5th ed., 2004; Modified ISO 6579: 2002 (Recommendation by the CRL)

# **Vaccination policy**

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

Vaccination of breeding flocks is voluntary.

# Other preventive measures than vaccination in place

## **Broiler flocks**

Persons, who in carrying out a registered activity of breeding or production come into direct contact with animals, foodstuffs, raw materials, products or waste, must have thorough knowledge in contagious animal diseases, the prevention thereof and transmissibility to man, and in the regulations governing the protection against contagious diseases. Animal holders must carry out preventive measures as for instance: providing potable water and feed that are fit for consumption; providing and maintaining the required conditions of hygiene in the animal breeding and auxiliary facilities; preventing the introduction into the breeding facilities of disease agents; implementing veterinary measures in the intensive animal rearing technology; handling as prescribed the animal carcasses and other waste, waste waters, faeces and urine; providing for the preventive disinfection, disinsectisation and deratisation (DDD) in the facilities, on public surfaces and in the means of transport.

# **Control program/mechanisms**

# The control program/strategies in place

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

National control programme is carried out in accordance with the national legislation, on the basis of the Rules on the monitoring of zoonoses and zoonotic agents in poultry breeding flocks (transposing Council Directive 92/117/EEC), and the Instructions on measures for the detection, prevention and suppression of salmonellosis. The control programme envisages inter alia as follows:

Immediately upon the reported suspicion of disease at the suspect holding, the following shall be instituted on the basis of an expert instruction: banning the movements and alienation of animals susceptible to the disease; banning the issuing of health certificates for animals susceptible to the disease; banning the trade in eggs for consumption;

banning the slaughter of animals susceptible to the disease; restricting the movements of persons coming into contact with the infected animal or animal suspected of being infected, and providing for and maintaining the appropriate conditions of hygiene in the facilities.

Measures shall be instituted as long as the suspicion of disease has not officially been ruled out.

## **Broiler flocks**

National control programme is carried out in accordance with the national legislation, on the basis of the Instructions on measures for the detection, prevention and suppression of salmonellosis. The control programme envisages inter alia as follows:

Implementation of monitoring and immediate confirmation of the disease in case of the suspected presence on the basis of clinical signs or detection of the disease in other animals at the same holding, by taking samples for the diagnostic

purposes, epizootiological investigation, and instituting appropriate measures immediately upon suspecting the presence of disease at the suspect holding. Measures shall be instituted as long as the suspicion of disease has not officially been ruled out.

Instituting of supplementary measures in the infected holding.

# Measures in case of the positive findings or single cases

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

See Breeding flocks for egg production.

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

See Breeding flocks for egg production.

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

On the official confirmation of disease, the following measures shall be instituted at the holding in addition to those instituted at the suspected presence of disease:

- incoming raw materials to constitute poultry feed shall be decontaminated by the appropriate procedure;
- premises, instruments and tools in the places of poultry feed production and storage shall be disinfected by the appropriate disinfectant;
- premises, installations, packaging and equipment in hatcheries and vehicles intended for the transport of poultry and eggs shall be disinfected by the appropriate procedure and disinfectant;
- hatching eggs shall be disinfected by the bactericidal gas immediately upon collection, as well as the hatchers;
- eggs placed in the hatcher on the same day shall be disinfected by the bactericidal gas on day 18 or 19;
- hatched poultry shall be disinfected by the bactericidal gas as long as it is still moist and in the hatcher:
- unhatched eggs, deformed hatchlings and other hatching waste shall be harmlessly disposed of;
- DDD measures shall be carried out in the infected poultry breeding facilities and in the facilities for the production of eggs and poultrymeat, and no later than the second day after disinfection, the bacteriological control of its efficiency shall be carried out;
- manure shall be removed from the perimeter of the holding, packed and not used for three months upon packing;
- poultry shall be treated by an appropriate antibiotic or chemotherapeutic agent on the basis of antibiogram, and
- other measures for sanitising the infected holding shall be implemented.

Measures instituted at the infected holding shall be lifted:

where the results of bacteriological investigations, carried out on days 5 and 10 after implementation of measures and completion of treatment, are negative.

# Broiler flocks: Before slaughter at farm

On the official confirmation of disease, the following measures shall be instituted at the holding in addition to those instituted at the suspected presence of disease:

- incoming raw materials to constitute poultry feed shall be decontaminated by the appropriate procedure;
- premises, instruments and tools in the places of poultry feed production and storage shall be disinfected by the appropriate disinfectant;
- vehicles intended for the transport of poultry and eggs shall be disinfected by the appropriate procedure and disinfectant;
- DDD measures shall be carried out in the infected poultry breeding facilities and in the facilities for the production of eggs and poultrymeat, and no later than the second day after disinfection, the bacteriological control of its efficiency shall be carried out;
- manure shall be removed from the perimeter of the holding, packed and not used for three months upon packing;
- poultry shall be treated by an appropriate antibiotic or chemotherapeutic agent on the basis of antibiogram, and
- other measures for sanitising the infected holding shall be implemented.

Measures instituted at the infected holding shall be lifted:

where the results of bacteriological investigations, carried out on days 7 and 14 after implementation of measures and completion of treatment, are negative.

# **Notification system in place**

Breeding flock: In case that by monitoring the presence of Salmonella in a breeding flock is detected, the holder of the flock must officially notify VARS of the results. The laboratory must submit the diagnostic test results to the Main Office of VARS. This method of reporting must be carried out in accordance with the provisions of the Rules on the monitoring of zoonoses and zoonotic agents in poultry breeding flocks (transposing Council Directive 92/117/EEC) since 2004, and prior to that date, the method of reporting diseases was used as prescribed in the Rules on contagious animal diseases.

Laying hens: In case of disease, the veterinary organisation must notify the relevant Regional Office of VARS, where the disease has been confirmed by the diagnostic test result. The report on the occurrence of disease is to be submitted on a monthly basis by the tenth day in a month for the previous month.

The authorised laboratory submits the diagnostic test results to the relevant Regional Office of VARS, and to the consigner of samples.

Once a month and no later than the 20th day in the month, the authorised laboratories and Regional Offices of VARS must report on the diagnostic test results to the Office for Contagious Animal Diseases within VARS.

This method of reporting is carried out in accordance with the provisions of the Rules on contagious animal diseases (applicable since 2002), and the reporting as such has been compulsory since 1996.

# **Results of the investigation**

BREEDING FLOCKS - animals intended for the production of hatching eggs

In 2005, 72 laying hen parent flocks were tested - on the meat line, and thereof, 1 grand-parent flock. Salmonella was identified in 1 parent flock at production stage (1.4 %). S. enteritidis was

confirmed.

BROILERS (chicks for fattening) - animals intended for meat production

In 2005, Salmonella was detected in 7 flocks of 621 tested, amounting to 1.1 %. In two flocks the presence of S. enteritidis was confirmed, and in 1 flock of S. typhimurium.

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

There is no change as regards the total number of positive parent flocks (egg and meat production line). Similarly as in 2004, Salmonella was identified in 3 parent flocks, amounting to 3.4 %.

Situation concerning the prevalence of Salmonella in broiler flocks remains favourable.

# C. Salmonella spp. in pigs

# **Monitoring system**

# Sampling strategy

# **Breeding herds**

Disease is monitored on the basis of clinical signs and/or detection of salmonellosis in other animals in the same holding.

# **Multiplying herds**

See Fattening herds

# **Fattening herds**

Sampling is carried out continually throughout the year at all the registered porcine slaughter establishments, taking into account sample distribution with regard to rearing establishments. Sampled are animals raised in the Republic of Slovenia only.

A slaughter animal constitutes an epidemiological unit.

Sampling is carried out by the slaughterhouse official veterinarians.

Also see Breeding heards

# Frequency of the sampling

# Fattening herds at slaughterhouse (herd based approach)

Other: At slaughter establishments, 1 animal - 1 sample is sampled every month

# Type of specimen taken

# Fattening herds at slaughterhouse (herd based approach)

Other: 1 sample - 5 or more lymph nodes from the ileocaecal region

# Methods of sampling (description of sampling techniques)

## **Breeding herds**

Immediately upon suspicion of disease on the basis of clinical signs and/or detection of salmonellosis in other animals in the same holding, the authorised veterinary organisation must submit for investigation the dead animal carcasses, rectal swabs of suspect animals, samples of litter and feed.

# **Multiplying herds**

See Breeding herds

# Fattening herds at farm

See Breeding herds

# Fattening herds at slaughterhouse (herd based approach)

Lymph nodes sampled are removed by a sterile instrument and stored in a sterile bag.

Samples must be delivered to the laboratory in the shortest possible time, and normally, immediately upon sampling, i.e. within the same day. During transport, samples must be chilled to +4 oC. Analyses should commence in the shortest possible time after sampling.

## **Case definition**

# **Breeding herds**

The disease shall be considered officially confirmed on the basis of the clinical signs and/or positive bacteriological test results; in the opposite case it shall be considered that the disease has been ruled out.

# **Multiplying herds**

See Breeding herds

## Fattening herds at farm

See Breeding herds

## Fattening herds at slaughterhouse (herd based approach)

Positive animal means an animal, where a positive sample has been taken from. Positive sample means a sample, where the zoonotic agent has been isolated from.

# Diagnostic/analytical methods used

# **Breeding herds**

Other: Bacteriological method: Method according to the OIE Manual, 5th ed., 2004

# **Multiplying herds**

Other: Bacteriological method: Method according to the OIE Manual, 5th ed., 2004

# Fattening herds at farm

Other: Bacteriological method: Method according to the OIE Manual, 5th ed., 2004

# Fattening herds at slaughterhouse (herd based approach)

Bacteriological method: ISO 6579:2002

# Other preventive measures than vaccination in place

# **Breeding herds**

Persons, who in carrying out a registered activity of breeding or production come into direct contact with animals, foodstuffs, raw materials, products or waste, must have thorough knowledge in contagious animal diseases, the prevention thereof and transmissibility to man, and in the regulations governing the protection against contagious diseases. Animal holders must carry out preventive measures as for instance: providing potable water and feed that are fit for consumption; providing and maintaining the required conditions of hygiene in the animal breeding and auxiliary facilities; preventing the introduction into the breeding facilities of disease agents; implementing veterinary measures in the intensive animal rearing technology; handling as prescribed the animal carcasses and other waste, waste waters, faeces and urine; providing for the preventive disinfection, disinsectisation and deratisation (DDD) in the facilities, on public surfaces and in the means of transport.

# **Multiplying herds**

See Breeding herds

# **Fattening herds**

See Breeding herds

# Control program/mechanisms

# The control program/strategies in place

# **Breeding herds**

National control programme is carried out in accordance with the national legislation, on the basis of the Instructions on measures for the detection, prevention and suppression of salmonellosis. The control programme envisages inter alia as follows:

Immediate confirmation of the disease in case of suspected presence by taking samples for the diagnostic purposes, epizootiological investigation, and instituting appropriate measures immediately upon suspecting the presence of disease at the suspect holding. Measures shall be instituted as long as the suspicion of disease has not officially been ruled out.

Instituting of supplementary measures in the infected holding.

# Measures in case of the positive findings or single cases

On the official confirmation of disease, the following measures shall be instituted at the holding in addition to those instituted at the suspected presence of disease:

- disinfection of incoming raw materials to constitute animal feed;
- treatment of infected animals with an appropriate antibiotic or chemotherapeutic agent on the basis of antibiogram;
- DDD measures;
- other measures for sanitising the infected holding

# **Notification system in place**

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation and control results.

# **Results of the investigation**

In 2005, samples of ileocaecal lymph nodes of 242 porcine animals were taken. Salmonella was detected in 13 samples (5.37 %), where S. enteritidis was identified five times, S. Virchow and S. Derby twice, and S. typhimurium, S. infantis, S. London and S. Senftenberg once.

# D. Salmonella spp. in bovine animals

# **Monitoring system**

# Sampling strategy

Sampling is carried out continually throughout the year at all the registered bovine slaughter establishments, taking into account sample distribution with regard to rearing establishments. Sampled are animals raised in the Republic of Slovenia only.

A slaughter animal constitutes an epidemiological unit.

Sampling is carried out by the slaughterhouse official veterinarians.

Pasive monitoring in calves

Disease is monitored on the basis of clinical signs and/or detection of salmonellosis in other animals in the same holding.

# Frequency of the sampling

# Animals at slaughter (herd based approach)

Other: At slaughter establishments, 1 animal - 1 sample is sampled every month.

# Type of specimen taken

# Animals at slaughter (herd based approach)

Faeces

# **Methods of sampling (description of sampling techniques)**

#### Animals at farm

Immediately upon suspicion of disease on the basis of clinical signs and/or detection of salmonellosis in other animals in the same holding, the authorised

veterinary organisation must submit for investigation the dead animal carcasses, rectal swabs of suspect animals, samples of litter and feed.

# Animals at slaughter (herd based approach)

Faeces are sampled prior to slaughter, and after slaughter, following the evisceration, the intestinal wall is aseptically opened and the intestinal content removed from the intestines and stored in a sterile plastic bag.

Samples must be delivered to the laboratory in the shortest possible time, and normally, immediately upon sampling, i.e. within the same day. During transport, samples must be chilled to +4 oC. Analyses should commence in the shortest possible time after sampling.

#### Case definition

## Animals at farm

The disease shall be considered officially confirmed on the basis of the clinical signs and/or positive bacteriological test results; in the opposite case it shall be considered that the disease has been ruled out.

# Animals at slaughter (herd based approach)

Positive animal means an animal, where a positive sample has been taken from. Positive sample means a sample, where the zoonotic agent has been isolated from.

# Diagnostic/analytical methods used

# Animals at slaughter (herd based approach)

Bacteriological method: Modified by ISO 6579: 2002

# Other preventive measures than vaccination in place

Persons, who in carrying out a registered activity of breeding or production come into direct contact with animals, foodstuffs, raw materials, products or waste, must have thorough knowledge in contagious animal diseases, the prevention thereof and transmissibility to man, and in the regulations governing the protection against contagious diseases. Animal holders must carry out preventive measures as for instance: providing potable water and feed that are fit for consumption; providing and maintaining the required conditions of hygiene in the animal breeding and auxiliary facilities; preventing the introduction into the breeding facilities of disease agents; implementing veterinary measures in the intensive animal rearing technology; handling as prescribed the animal carcasses and other waste, waste waters, faeces and urine; providing for the preventive disinfection, disinsectisation and deratisation (DDD) in the facilities, on public surfaces and in the means of transport.

# **Control program/mechanisms**

# The control program/strategies in place

National control programme is carried out in accordance with the national legislation, on

the basis of the Instructions on measures for the detection, prevention and suppression of salmonellosis. The control programme envisages inter alia as follows:

Immediate confirmation of the disease in case of suspected presence by taking samples for the diagnostic purposes, epizootiological investigation, and instituting appropriate measures immediately upon suspecting the presence of disease at the suspect holding. Measures shall be instituted as long as the suspicion of disease has not officially been ruled out.

Instituting of supplementary measures in the infected holding.

# Measures in case of the positive findings or single cases

Measures in case of the positive findings or single cases:

On the official confirmation of disease, the following measures shall be instituted at the holding in addition to those instituted at the suspected presence of disease:

- disinfection of incoming raw materials to constitute animal feed;
- treatment of infected animals with an appropriate antibiotic or chemotherapeutic agent on the basis of antibiogram;
- DDD measures;
- other measures for sanitising the infected holding

# **Notification system in place**

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation and control results.

# **Results of the investigation**

In 2005, 232 faeces samples were taken, and the presence of S. Stanleyville was confirmed in 1 sample.

# Table Salmonella in breeding flocks of Gallus gallus

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Gallus gallus (fowl)							
grandparent breeding flocks for egg production line							
during production period	VARS	flock	4	0			
parent breeding flocks for egg production line							
during rearing period	VARS	flock	2	0			
during production period	VARS	flock	9	2	2		
grandparent breeding flocks for meat production line							
during production period	VARS	flock	1	0			
parent breeding flocks for meat production line							
day-old chicks	VARS	flock	17	0			
during rearing period	VARS	flock	23	0			
during production period	VARS	flock	31	1	1		

# Table Salmonella in other poultry

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Menden	S. Saintpaul	S. Agona
Gallus gallus (fowl)										
laying hens  during rearing period  during production period	VARS VARS	flock	23	7	6		1	1		
broilers during rearing period  Turkeys	VARS	flock	621	7	2	1	4			
meat production flocks day-old chicks during rearing period	VARS VARS	flock	13 72	1 8		1	6		1	1

Table Salmonella in other animals

S. Infantis					~
S. Senftenberg					~
S. London					-
S. Stanleyville		_			
S. Virchow					7
S. Derby					7
Salmonella spp., unspecified					
S. Typhimurium					<del>-</del>
S. Enteritidis					2
Total units positive for Salmonella		~			13
betset atinU		232			242
		<u> </u>			<u>a</u>
Sampling unit		animal			animal
		Ø			Ø
Source of information		VARS			VARS
		imal			
	als)	- at slaughterhouse - animal sample - faeces - Monitoring - official sampling - objective sampling			ial tive
	Cattle (bovine animals)	- at slaughterhouse sample - faeces - Monitoring - official sampling - objective sampling			- at slaughterhouse - animal sample - Monitoring - official sampling - objective sampling (1)
	ine 8	hterr faec g - of - obj		spia	ughte sam  ing - ig - c
	(bov	laug ole - torin oling		guic	- at slaughte animal samp Monitoring - sampling - ol
	attle	- at slaug sample - Monitorin sampling sampling	Pigs	fattening pigs	ani Mo Sar sar
	ပြီ		Ē	Ĺ	

1): Lymph nodes

# 2.1.4. Salmonella in feedingstuffs

# A. Salmonella spp. in feed

# History of the disease and/or infection in the country

In Slovenia feed was surveilled for the presence of Salmonella for decades. The prevalence was rather low and the isolated strains were generally the most susceptible to antimicrobials of all the strains tested. Many serovars were isolated only from feed and were not found later in the chain; feed-animal-food.

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

The recent situation reflects the efforts of controling Salmonella in feed and is considered good.

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

The scope of serovars, isolated from feed, greatly differes from the scope found in animals and food. Of 14 strains tested for antimicrobial susceptibility only 2 were resistant, each to one antimicrobial only, so feed is not considered to be a relevant source of Salmonella for humans.

## Recent actions taken to control the zoonoses

## Feedinstuffs

Monitoring system:

- sampling strategy: target sampling (in accordance with the Programme of feed control in 2005)
- frequency of the sampling: domestic feed material of plant and animal origin, imported feed material of plant and animal origin, process control in feed mills
- preventative measures: own controls by holders of activity (HACCP)
- control programme: Program of feed control in 2005, in accordance with Article 34 of Animal Feed Act (UL RS 97/04)
- measures in case of positive findings: in accordance with Article 6 of the Rules on conditions for the health suitability of straight feedingstuffs, compound feedingstuffs, premixes and feed additives (UL RS 18/04 as amended)
- notification system in place: RASFF system and mutual notification between the competent authorities in the sector of food safety, in accordance with Decree coordinating the operation of ministries and agencies within them that are competent for food safety at inclusion into the risk analysis process (UL RS 56/03).

## **Additional information**

## Feedinstuffs

- frequency of the sampling: domestic feed material of plant and animal origin (82 samples), imported feed material of plant and animal origin (27 samples), process control in feed mills (260 samples)
- description of sampling techniques: in accordance with the Rules of the official methods of sampling for the monitoring and inspection and control of animal feed, additives and premixes (UL RS 41/03)

# Slovenia 2005 Report on trends and sources of zoonoses

- definition of positive finding: analysis result (1 = positive, 0 = negative)
- analytical methods used: ISO/FDIS 6579:2002 SOP 221

# Table Salmonella in feed material of animal origin

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of land animal origin								
dairy products	VARS	batch	25g	1	0			
Feed material of marine animal origin								
fish meal	VARS	batch	25g	6	0			

# Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Typhimurium	S. Enteritidis	Salmonella spp., unspecified	S. Agona
Feed material of cereal grain origin									
other cereal grain derived	IRSAFF	batch	25g	6	0				
Feed material of oil seed or fruit origin									
sunflower seed derived	IRSAFF	batch	25g	1	1				1
other oil seeds derived	IRSAFF	batch	25g	2	0				
Other feed material									
tubers, roots and similar products	IRSAFF	batch	25g	1	0				
other seeds and fruits	IRSAFF	batch	25g	17	0				

# **Footnote**

IRSAFF - Inspectorate for Agriculture, Forestry and food

# Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Typhimurium	S. Enteritidis	Salmonella spp., unspecified	S. Tennessee	S. Havana	S. Senftenberg
Compound feedingstuffs for cattle											
final product	VARS	batch	25g	47	0						
Compound feedingstuffs for pigs											
final product	VARS	batch	25g	101	1					1	
Compound feedingstuffs for poultry (non specified)											
final product	VARS	batch	25g	127	1				1		
Pet food											
dog snacks (pig ears, chewing bones)	VARS	batch	25g	5	0						
Compound feedingstuffs for fish	VARS	batch	25g	4	1						1
Compound feedingstuffs for horses	VARS	batch	25g	1	0						
Compound feedingstuffs for rabbits	VARS	batch	25g	7	0						
Compound feedingstuffs, not specified	VARS	batch	25g	3	0						

# 2.1.5. Salmonella serovars and phagetype distribution

Table Salmonella serovars in animals

	(* C(*																	
Other poultry	M(*)																	
	C(*)																	
(lwof) sullag sullað	M(*)	40 0	40 0															
_	C(*)							27		2	_	2	_	_		_	_	2
sgi9	M(*)	0	0															
(1)	C(*)	13 0	13 0		11													
(sattle (bovine animals)	M(*)		1		_													
function may a store	C(*)	-																
Turkeys - in total - Monitoring	M(*)	18	18				_									6	4	
Reptiles - in total - Surveillance	C(*)	3	2					_	_									
conciliovant2 letet ai selitaca	M(*)	4	_															
Snakes - in total - Surveillance	C(*)	3	_			_												
[20,000]	M(*)	14	_												_			
Turtles - in total - Surveillance	C(*)	7																
	M(*)	4	_															
		<b>y</b>	=   															
		the laborator	erotyped	er type														
Serovars	Sources of isolates	Number of isolates in the laboratory	Number of isolates serotyped	Number of isolates per type	S. Agona	S. Blukwa	S. Derby	S. Enteritidis	S. IV 16:z4,z32:-	S. Infantis	S. Kisii	S. Mbandaka	S. Meleagridis	S. Menden	S. Newport	S. Saintpaul	S. Sandiego	S. Senftenberg

S. Stanleyville								~	_					_
S. Tennessee										_				
S. Typhimurium						_					- 1	2		
S. Virchow						2	0,							
S. II 30:1.228:26														
S. enterica subsp. arizonae		.,	3	2										
S. enterica subsp. diarizonae	3		2											
S. enterica subsp. enterica		_												
S. enterica subsp. houtenae					·-	_								
S. enterica subsp. salamae		~	8	.,	3									
S. Illa 44:z4,z24:-	1													
Total of typed Salmonella isolates														

Footnote

(\*) M : Monitoring, C : Clinical Source of information NVI

Table Salmonella serovars in food (Part A)

	*												
Meat from broilers (Gallus gallus) - offal - liver	(*) (C(*)												
	(*)M	3	က					က					
croppoid appur fild mon appur	( <u>*</u>												
Meat from pig - meat products	(*)M												
	C(*)	9	9	1			_				7		
Meat from bovine animals - minced meat													
	(*)	-	_										
Meat from poultry, unspecified - meat products	(*) C												
	M(*)	9	9		_				_				
6.1	C(*)												
Pleast from bovine animals and pig	(*) M(*)												
	C(*)	2	2			_		7					
Meat from turkey - offal - liver													
	M(*)	2	_										
Meat from pig - carcass	(*) C												
	M(*)	13	13				_	2			_	_	_
_	(*) C(*)			1				4,			`	Ì	
Other products of animal origin	M(*)												
	_												
Other poultry	(*) C(*)												
	M(*)												
Meat from broilers (Gallus gallus)	(*) C												
(* 11.00 - 11.00)	(x W(*)	1	_					_					
	(*)												
Meat from pig	(*)M												
	C(*)	2	2										
Alsmins enivod mort iseM													
	M(*)												
		Z	Z										
		ory											
		orat	_										
		lab	pec	De									
		the	roty	<u> </u>									
	es	s in	S SE										
	Sources of isolates	Number of isolates in the laboratory	Number of isolates serotyped	Number of isolates per type									
	si Jc	of is	of is		<u>~</u>	ley		dis		perg		_	au l
Vars	Ses (	ber c	ber 6	S	ockle	eder	3rby	terit	aardt	eidel	fantis	ndor	intp
Serovars	our	umk	umk	mr	S. Blockley	S. Bredeney	S. Derby	S. Enteritidis	S. Haardt	S. Heidelberg	S. Infantis	S. London	S. Saintpaul
Ø	Ś	Z	Z	Z	0,	"	0,	,	3,	3,	0,	0,	0,

S. Tennessee								_	
S. Typhimurium	2		2	-	2	_	_	-	
S. Virchow			2					_	
S. enterica subsp. enterica (1)				_					
S. Chartres									
S. enterica subsp. enterica, rough						က			
Total of typed Salmonella isolates									

(1): Group O:7(C1)

# Footnote

(\*) M : Monitoring, C : Clinical Source of information NVI

Table Salmonella serovars in food (Part B)

Serovars	Sources of isolates	Number of isolates in the laboratory	Number of isolates serotyped		Number of isolates per type	S. Blockley	S. Bredeney	S. Derby
		N= 2	N= 2	]				
2353153 - VOJIH MOJÌ JEAM	M(*)							
Mear 110m turkey - carcass	C(*)							
	M(*)	2	2					
Meat from rabbit - mechanically separated meat (MSM)	C(*)							
	M(*)	2	2					
Meat from pig - piq mort saem	C(*)							
	M(*)	-	_					
Egg products - liquid	C(*)							
	M(*)	11	17					
Meat from turkey - mechanically separated meat (MSM)	C(*)							
	M(*)	9	9					
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM)	C(*)							

S. Enteritidis				_		_		
S. Haardt								
S. Heidelberg	-							
S. Infantis			_					
S. London								
S. Saintpaul						1		
S. Senftenberg								
S. Tennessee							_	
S. Typhimurium		1	-		-3	8	4	
S. Virchow						1		
S. enterica subsp. enterica (1)								
S. Chartres	1							
S. enterica subsp. enterica, rough								
Total of typed Salmonella isolates								

(1): Group O:7(C1)

# Footnote

(\*) M : Monitoring, C : Clinical Source of information NVI

#### 2.1.6. Antimicrobial resistance in Salmonella isolates

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

# A. Antimicrobial resistance in Salmonella in cattle

# Sampling strategy used in monitoring

# Frequency of the sampling

Subjected to test are isolates obtained within the monitoring of zoonoses and zoonotic agents.

See the monitoring for Salmonella in bovine animals.

Likewise the isolates were selected out of those available at the National Veterinary Institute, at least one isolate from each epidemiological unit.

# Type of specimen taken

See the monitoring for Salmonella in bovine animals.

## **Methods of sampling (description of sampling techniques)**

See the monitoring for Salmonella in bovine animals.

# Procedures for the selection of isolates for antimicrobial testing

At least one isolate from each epidemiological unit.

# Methods used for collecting data

Report of results obtained within the monitoring are reported to the VARS Main Office.

# Laboratory methodology used for identification of the microbial isolates

See the monitoring for Salmonella in bovine animals.

Disc diffusion method according to the CLSI (former NCCLS).

# Laboratory used for detection for resistance

# Antimicrobials included in monitoring

Aminoglycosides: streptomycin, neomycin, kanamycin, gentamycin, spectinomycin

Amphenicols: Chloramphenicol, fluorphenicol

Beta-lactamic: ampicillin and amoxycillin; amoxycillin/clavulanic acid

Cephalosporins: cephotaxim

Quinolones: nalidixinic acid

Fluoroquinolones: enrofloxacine, ciprofloxacin, flumequine

Sulphonamides: sulfonamides,

trimethoprim-sulphonamide, trimethoprim

Tetracyclines: tetracycline

# **Breakpoints used in testing**

According to CLSI (former NCCLS)

# Control program/mechanisms

## Recent actions taken to control the zoonoses

Introduced monitoring.

# **Notification system in place**

NRL-Salmonella reports to VARS at least once a year.

# **Results of the investigation**

Of the three tested stains one strain of Salmonella Typhimurium was resistant to 9 of 18 antimicrobials tested.

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

In the year 2005 there were just a few isoaltes from cattle, but the multiresistant strain of S. Typhimurium indicates, that there might be a problem with multiresistant strains in the future.

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

The spread of multiresistant S. Typhimurium strains indicates that cattle might become a source of such strains for humans, too.

# B. Antimicrobial resistance in Salmonella in pigs

# Sampling strategy used in monitoring

# Frequency of the sampling

Subjected to test are isolates obtained within the monitoring of zoonoses and zoonotic agents.

See the monitoring for Salmonella in pigs.

Likewise the isolates were selected out of those available at the National Veterinary Institute, at least one isolate from each epidemiological unit.

# Type of specimen taken

See the monitoring for Salmonella in pigs.

# **Methods of sampling (description of sampling techniques)**

See the monitoring for Salmonella in pigs.

# Procedures for the selection of isolates for antimicrobial testing

At least one isolate from each epidemiological unit.

# Methods used for collecting data

Report of results obtained within the monitoring in processing plants, are reported to the VARS Main Office.

# Laboratory methodology used for identification of the microbial isolates

See the monitoring for Salmonella in pigs.

Disc diffusion method according to the CLSI (former NCCLS).

# Laboratory used for detection for resistance

# Antimicrobials included in monitoring

Aminoglycosides: streptomycin, neomycin, kanamycin, gentamycin, spectinomycin

Amphenicols: Chloramphenicol, fluorphenicol

Beta-lactamic: ampicillin and amoxycillin; amoxycillin/clavulanic acid

Cephalosporins: cephotaxim Quinolones: nalidixinic acid

Fluoroquinolones: enrofloxacine, ciprofloxacin, flumequine

Sulphonamides: sulfonamides,

trimethoprim-sulphonamide, trimethoprim

Tetracyclines: tetracycline

## **Breakpoints used in testing**

According to CLSI (former NCCLS).

# Control program/mechanisms

## Recent actions taken to control the zoonoses

Introduced monitoring.

# **Notification system in place**

NRL-Salmonella reports to VARS at least once a year.

# **Results of the investigation**

Results for the 11 strains out of 13 isolated from pig limph nodes are presented in the chapter E (Food from pigs).

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

Since multiresistant strains of S. Typhimurium were found in pig limph nodes, its spread in pig population should be considered as a potential danger for its spread to humans, too.

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

A possible spread of multiresistant S. Typhimurium should be considered and adequate measures should be taken to minimise this threat.

# C. Antimicrobial resistance in Salmonella in poultry

# Sampling strategy used in monitoring

# Frequency of the sampling

Subjected to test are isolates obtained within the monitoring of zoonoses and zoonotic agents.

See the monitoring for Salmonella in poultry.

Likewise the isolates were selected out of those available at the National Veterinary Institute, at least one isolate from each epidemiological unit.

# Type of specimen taken

See the monitoring for Salmonella in poultry.

# Methods of sampling (description of sampling techniques)

See the monitoring for Salmonella in poultry.

# Procedures for the selection of isolates for antimicrobial testing

At least one isolate from each epidemiological unit.

## Methods used for collecting data

Report of results obtained within the monitoring in processing plants, are reported to the VARS Main Office.

# Laboratory methodology used for identification of the microbial isolates

See the monitoring for Salmonella in poultry.

Disc diffusion method according to the CLSI (former NCCLS).

# Laboratory used for detection for resistance

# **Antimicrobials included in monitoring**

Aminoglycosides: streptomycin, neomycin, kanamycin, gentamycin, spectinomycin

Amphenicols: Chloramphenicol, fluorphenicol

Beta-lactamic: ampicillin and amoxycillin; amoxycillin/clavulonic acid

Cephalosporins: cephotaxim Quinolones: nalidixinic acid

Fluoroquinolones: enrofloxacine, ciprofloxacin, flumequine

Sulphonamides: sulfonamides,

trimethoprim-sulphonamide, trimethoprim

Tetracyclines: tetracycline

# **Breakpoints used in testing**

According to CLSI (former NCCLS)

# Control program/mechanisms

#### Recent actions taken to control the zoonoses

Introduced monitoring.

# **Notification system in place**

NRL-Salmonella reports to VARS at least once a year.

# **Results of the investigation**

Of the 29 strains tested, only two were resistant: S. Enteritidis fo fluorfenicol and S. Senftenberg to streptomycin.

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

The situation seems to be good. Poultry is not considered to be an important source of multiresistant Salmonella strains for humans.

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

Although poultry is considered to be a major source of Salmonella for humans, it is not considered to be the major source of multiresistant strains, too. The most prevalent serovar is S. Enteritidis, which is much more sensitive than S. Typhimurium.

# D. Antimicrobial resistance in Salmonella in foodstuff derived from cattle

# Sampling strategy used in monitoring

# Frequency of the sampling

Subjected to test are isolates obtained within the monitoring of zoonoses and zoonotic agents.

See the monitoring for Salmonella in bovine meat - at procesing plants.

Likewise the isolates were selected out of those available at the National Veterinary Institute, at least one isolate from each epidemiological unit.

# Type of specimen taken

See the monitoring for Salmonella in bovine meat - at procesing plants.

# **Methods of sampling (description of sampling techniques)**

See the monitoring for Salmonella in bovine meat - at procesing plants.

## Procedures for the selection of isolates for antimicrobial testing

At least one isolate from each epidemiological unit.

# Methods used for collecting data

Report of results obtained within the monitoring in processing plants are reported to the VARS Main Office.

# Laboratory methodology used for identification of the microbial isolates

See the monitoring for Salmonella in bovine meat - at procesing plants. Disc diffusion method according to the CLSI (former NCCLS).

# Laboratory used for detection for resistance

# Antimicrobials included in monitoring

Aminoglycosides: streptomycin, neomycin, kanamycin, gentamycin, spectinomycin

Amphenicols: Chloramphenicol, fluorphenicol

Beta-lactamic: ampicillin and amoxycillin; amoxycillin/clavulanic acid

Cephalosporins: cephotaxim Quinolones: nalidixinic acid

Fluoroquinolones: enrofloxacine, ciprofloxacin, flumequine

Sulphonamides: sulfonamides,

trimethoprim-sulphonamide, trimethoprim

Tetracyclines: tetracycline

## **Breakpoints used in testing**

According to CLSI (former NCCLS).

# Control program/mechanisms

## Recent actions taken to control the zoonoses

Introduced monitoring.

# **Notification system in place**

NRL-Salmonella reports to VARS at least once a year.

# Results of the investigation

A multiresistant strain of S. Typhimurium was found, resistant to 9 of the 19 antimicrobials tested. Another S. Typhimurium strain, resistant to 9 antimicrobials, but with a different resistance patters was isolated form the mixed cattle and pig minced meat.

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

Till this year cattle was not considered to be a major source of multiresistant strains of Salmonella, but the finding of multiresistant S. Typhimurium strains indicates its spread to cattle, so the danger should not be neglected.

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

The finding of multiresistant S. Typhimurium strains indicates that the danger of its spread to humans should not be neglected and the adequate measures should be taken to prevent it as much as possible.

# E. Antimicrobial resistance in Salmonella in foodstuff derived from pigs

# Sampling strategy used in monitoring

# Frequency of the sampling

Subjected to test are isolates obtained within the monitoring of zoonoses and zoonotic agents.

See the monitoring for Salmonella in pig meat - at processing plants

Likewise the isolates were selected out of those available at the National Veterinary Institute, at least one isolate from each epidemiological unit.

# Type of specimen taken

See the monitoring for Salmonella in pig meat - at processing plants

# **Methods of sampling (description of sampling techniques)**

See the monitoring for Salmonella in pig meat - at processing plants

# Procedures for the selection of isolates for antimicrobial testing

At least one isolate from each epidemiological unit.

## Methods used for collecting data

Report of results obtained within the monitoring in processing plants, are reported to the VARS Main Office.

# Laboratory methodology used for identification of the microbial isolates

See the monitoring for Salmonella in pig meat - at processing plants. Disc diffusion method according to the CLSI (former NCCLS).

# Laboratory used for detection for resistance

# **Antimicrobials included in monitoring**

Aminoglycosides: streptomycin, neomycin, kanamycin, gentamycin, spectinomycin

Amphenicols: Chloramphenicol, fluorphenicol

Beta-lactamic: ampicillin and amoxycillin; amoxycillin/clavulanic acid

Cephalosporins: cephotaxim Quinolones: nalidixinic acid

Fluoroquinolones: enrofloxacine, ciprofloxacin

Sulphonamides: sulfonamides,

trimethoprim-sulphonamide, trimethoprim

Tetracyclines: tetracycline

# Breakpoints used in testing

According to CLSI (former NCCLS).

# Control program/mechanisms

## Recent actions taken to control the zoonoses

Introduced monitoring.

# **Notification system in place**

NRL-Salmonella reports to VARS at least once a year.

# **Results of the investigation**

Of the 11 strains, isolated from pig limph nodes, two strains of S. Typhimurium (ST) were resistant to 12 and 6 antimicrobilas respectively, and one strain of S. Derby to 4 antimicrobials of the 18 tested.

Of the remaining 7 resistant strains one strain of S. Virchow was resistant to 15 of the 18 antimicrobials tested, one ST to 8, one ST to 6, one ST to 5 antimicrobials. Two strains (S. Derby and S. Saintpaul) were resistant to 4 and one ST to 3 antimicrobials.

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

The findings indicate the spread of multiresistant S. Typhimurium strains, so the adequate measures should be taken to minimize the risk of its spread to humans.

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

The spread of multiresistant Salmonella strains in pigs should be considered as a potential risk for humans.

# F. Antimicrobial resistance in Salmonella in foodstuff derived from poultry

# Sampling strategy used in monitoring

# Frequency of the sampling

Subjected to test are isolates obtained within the monitoring of zoonoses and zoonotic agents.

See the monitoring for Salmonella in poultry meat - at processing plants.

Likewise the isolates were selected out of those available at the National Veterinary Institute, at least one isolate from each epidemiological unit.

# Type of specimen taken

See the monitoring for Salmonella in poultry meat - at processing plants.

# **Methods of sampling (description of sampling techniques)**

See the monitoring for Salmonella in poultry meat - at processing plants.

# Procedures for the selection of isolates for antimicrobial testing

At least one isolate from each epidemiological unit.

# Methods used for collecting data

Report of results obtained within the monitoring in processing plants, are reported to the VARS Main Office.

# Laboratory methodology used for identification of the microbial isolates

See the monitoring for Salmonella in poultry meat - at processing plants. Disc diffusion method according to the CLSI (former NCCLS).

# Laboratory used for detection for resistance

# Antimicrobials included in monitoring

Aminoglycosides: streptomycin, neomycin, kanamycin, gentamycin, spectinomycin

Amphenicols: Chloramphenicol, fluorphenicol

Beta-lactamic: ampicillin and amoxycillin; amoxycillin/clavulanic acid

Cephalosporins: cephotaxim Quinolones: nalidixinic acid

Fluoroquinolones: enrofloxacine, ciprofloxacin

Sulphonamides: sulfonamides,

trimethoprim-sulphonamide, trimethoprim

Tetracyclines: tetracycline

# **Breakpoints used in testing**

According to CLSI (former NCCLS).

# Control program/mechanisms

#### Recent actions taken to control the zoonoses

Introduced monitoring.

# **Notification system in place**

NRL-Salmonella reports to VARS at least once a year.

## **Results of the investigation**

Alltogether 19 resistant strains were tested, of which 11 were isolated from turkeys.

Multiresistant S. Typhimurium strains were resistant to: one to 12 antimicrobials, one to 10, one to 9, six to 8 antimicrobials of the 18 tested. The remaining 10 strains of different serovars were resistant: three to 5 antimicrobials, two to 4, teo to 3 and three to 1 antimicribial.

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

Although the results of poultry examinations for Salmonella do not indicate the poultry to be the major source of multiresistant strains, the examiantions of food derived from poutry does not corroborate this opinion. Turkeys seem to be a possible source of highy multiresistant strains of S. Typhimurium. The other serovars, isolated from poultry, were more susceptible. Regarding big consumption of poultry meat, this might become an important source of multiresistant strains for humans.

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

The findings indicate that poultry (specially turkeys) might become an important source of multiresistant Salmonella strains for humans.

Table Antimicrobial susceptibility testing of S. Agona in Turkeys - unspecified - at farm - environmental sample -Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	and numb	er o	f isol	ates	with 1	the co	neouc	tratio	l I	nl) or	zone	(mm)	of in	hibitic	be uc	ual to														
S	S. Agona	g																												
<b> -</b>	Turkeys - unspecified - at farm - environmental sample - Monitoring	ı	nns	bec	cifie	- p	at f	arm	- e	nvir	uuo.	neu	tal	sam	ple	Α-	loni	torii	ور											
Isolates out of a monitoring yes programme	SS																													
Number of isolates available in the laboratory																														
	•		ŀ	ŀ			}			ľ	ŀ		ŀ	ŀ			ľ	ľ	ľ	ŀ							ľ	ŀ		
Antimicrobials: N	u	_	9	8	6	01	11	15	13	τl	SI	ا2 ا	81	61	50	12	22	53	54	52 52	72	82	52	30	31	32	33	34	32	
Tetracyclines	0																-													
Amphenicols																														
Chloramphenicol 1	0												-				_													
Florfenicol 1	0		_	_																-										
Cephalosporins																													-	
Cefotaxim 1	0	_	_	_																_						_				
səu	2	-																				-							-	
Ciprofloxacin(1)	0			+	4	4	_						-							-	4							-		
Enrofloxacin 1	0		_																	_						1				
Quinolones																														
Nalidixic acid	0																		-											
Trimethoprim 1	0																								-					
Sulfonamides	. ,																													
Sulfonamide 1	0																	_												
Aminoglycosides																														
<b>C</b>	0	_	+	+		-	_				-																			
	0																	`	_											
Neomycin 1	0																		_											
Kanamycin 1	0																	_												
Spectinomycin 1	0	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	_				+	-	-			-				+		_								
Trimethoprim + sulfonamides	0																									-				
Penicillins																														
	0			-														_												
Amoxicillin/Clavulanic acid	0	-	-	$\dashv$	$\dashv$	$\dashv$	4				-	$\dashv$	-	_					$\dashv$	-	-	_								

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

Number of resistant isolates (n) ar	Number of resistant isolates (n) and number of isolates with the concentration (μl/ml) or zone (mm) of inhibition equal to
S	S. Agona
ၓ	Cattle (bovine animals) - at farm - Clinical investigations
Isolates out of a monitoring programme	
Number of isolates available in the laboratory	
•	
Antimicrobials: N	32 32 32 32 32 32 32 32 32 32 32 32 32 3
Tetracyclines 1	0
Amphenicols	
Chloramphenicol 1	
Florfenicol 1	
Cephalosporins	
Cefotaxim(2)	0
səı	
(5)	
Enrofloxacin 1	0
Nalidixic acid	
Trimethoprim 1	7
Sulfonamides	
Sulfonamide 1	
Aminoglycosides	
Streptomycin 1	-
Gentamicin 1	0
Neomycin 1	1
Kanamycin 1	0
Spectinomycin 1	
Trimethoprim + sulfonamides	
Penicillins	
Amoxicillin	0
Amoxicillin/Clavulanic acid	

Ampicillin
(1):36 mm
(2):36 mm

# Table Antimicrobial susceptibility testing of S. Agona - qualitative data

n = Number of resistant is	solates			
	S. Agona			
		nals) - at farm - Clinical	Turkeys - unspecit environmental san	
Isolates out of a	no		yes	
monitoring programme				
Number of isolates	1		1	
available in the				
laboratory				
Antimicrobials:	N	n	N	n
Tetracyclines	1	0	1	0
Amphenicols				
Chloramphenicol	1	0	1	0
Florfenicol	1	0	1	0
Cephalosporins	-,			
Cefotaxim	1	0	1	0
Fluoroquinolones	,			
Ciprofloxacin	1	0	1	0
Enrofloxacin	1	0	1	0
Quinolones	1		1	
Nalidixic acid	1	0	1	0
Trimethoprim	1	0	1	0
Sulfonamides				
Sulfonamide	1	0	1	0
Aminoglycosides	_			
Streptomycin	1	0	1	0
Gentamicin	1	0	1	0
Neomycin	1	0	1	0
Kanamycin	1	0	1	0
Spectinomycin	1	0	1	0
Trimethoprim +	1	0	1	0
sulfonamides				
Penicillins				
Amoxicillin	1	0	1	0
Amoxicillin/Clavulanic acid	1	0	1	0
Ampicillin	1	0	1	0

Table Antimicrobial susceptibility testing of S. Agona in All feedingstuffs - Monitoring - quantitative data [Diffusion method]

Number of recietant isolates (n	Nimber of resistant isolates (n) and nimber of isolates with the concentration (III/ml) or zone (mm) of inhibition equal to
	S. Agona
	All feedingstuffs - Monitoring
Isolates out of a monitoring y programme	yes
Number of isolates available in the laboratory	
Antimicrobials:	25
Tetracyclines	
Amphenicols	
Chloramphenicol 1	
Florfenicol 1	
Fluoroquinolones	
Ciprofloxacin(1)	
Enrofloxacin 1	
Quinolones	
Nalidixic acid	7-
Trimethoprim	
Sulfonamides	
Sulfonamide	1
Aminoglycosides	
Streptomycin	1
Gentamicin	
Neomycin	
Kanamycin	
Spectinomycin	
Trimethoprim +	
sulfonamides	
Cephalosporins	
Cefotaxim(2)	0
Penicillins	
Amoxicillin	
Amoxicillin/Clavulanic acid	

Ampicillin
(1):40 mm
(2):36 mm

# Table Antimicrobial susceptibility testing of S. Agona - qualitative data

n = Number of resistant is	solates		
	S. Agona		
	All feedingstuffs - Monitoring		
Isolates out of a	yes		
monitoring programme			
Number of isolates	1		
available in the			
laboratory			
A . (! !   ! .   .	Ta.	T.,	
Antimicrobials:	<b>N</b>	<b>n</b> 0	
Tetracyclines	1	U	
Amphenicols			
Chloramphenicol	1	0	
Florfenicol	1	0	
Cephalosporins	٦.		
Cefotaxim	1	0	
Fluoroquinolones	1.		
Ciprofloxacin	1	0	
Enrofloxacin	1	0	
Quinolones			
Nalidixic acid	1	0	
Trimethoprim	1	0	
Sulfonamides			
Sulfonamide	1	0	
Aminoglycosides			
Streptomycin	1	0	
Gentamicin	1	0	
Neomycin	1	0	
Kanamycin	1	0	
Spectinomycin	1	0	
Trimethoprim +	1	0	
sulfonamides			
Penicillins			
Amoxicillin	1	0	
Amoxicillin/Clavulanic acid	1	0	
Ampicillin	1	0	

# Table Antimicrobial susceptibility testing of S. Blockley - qualitative data

n = Number of resistant is	solates	
	S. Blockley	
	Meat from broilers (Gallus gallus) - mince	d meat - intended to be eaten cooked -
	Monitoring	
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
	1	
Antimicrobials:	N	n
Tetracyclines	1	1
Amphenicols	1.	
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins	7	
3rd generation	1	0
cephalosporins		
Cefotaxim	1	0
Fluoroquinolones	1.	
Ciprofloxacin	1	0
Enrofloxacin	1	0
Flumequin	1	0
Quinolones	1.	
Nalidixic acid	1	1
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides	1	
Streptomycin	1	1
Gentamicin	1	0
Neomycin	1	1
Kanamycin	1	1
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins	•	
Amoxicillin	1	0
Amoxicillin/Clavulanic acid	1	0
Ampicillin	1	0

Table Antimicrobial susceptibility testing of S. Blockley in minced meat - Meat from broilers (Gallus gallus) - intended

	Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	nber (	of isok	ates w	/ith th	e con	centra	tion (	m/ml)	or zo	me (m	m) of	inhibi	tion ec	anal tκ	0											
	S. Blockley	ckle	>																								
	Meat from broilers	ron	brc	oiler		allu	ıs g	allus	١ - (٤	min	ced	me	at -	inte	nde	d to	pe	eat	en c	Sook	ed	(Gallus gallus) - minced meat - intended to be eaten cooked - Monitoring	onito	orinç	Ć		
Isolates out of a monitoring programme	yes																										
Number of isolates available in the laboratory	<b>6</b>																										
	2	_		_	_(		_		_				_			7			_		-				-		_
Antimicrobials:	z	u	9	8 ,	6	٦L		ار دا	71 31	ìΙ	16	<u>'</u>	۲۰ ۱۱	30 18	5	22	53	,Z	56 56	52	32	52	30	3.	33 33	3×	36
Amphenicols																											
Chloramphenicol	-	0	+	-				+	4	4				-	_					-	_				4		
Florfenicol	-	0	_	_				_		_				_	_					_	-						
Cephalosporins																											
Cefotaxim(1)	-	0	-	_				-	_	_				-	_					_	_				_	_	1
Fluoroquinolones																											
Ciprofloxacin	-	0	$\dashv$	-	_		1	$\dashv$	+	4		$\dashv$	+	$\dashv$	_		7	1	$\dashv$	-	4	-		+	-	4	
Enrofloxacin	-	0		_				$\dashv$	_	_				-	_				_						-		
Quinolones																											
Nalidixic acid	-	-												_					+								
Trimethoprim	~	0																					_				
Sulfonamides								-				-			-									-		-	
Sulfonamide	-	0												_				-									
Aminoglycosides																											
Streptomycin	-	-																									
Gentamicin	_	0															-	_									
Neomycin	_																										
Kanamycin	-	-	+	-	_			+	1	4		7	+	$\dashv$	_				+	-	4			1	1	_	
Spectinomycin	-	0											+	_		-			+		_			-  -		_	
Trimethoprim + sulfonamides		0																						-			
Penicillins																											
Amoxicillin	_	0																-	-								
Amoxicillin/Clavulanic acid	_	0	-	_				_		_				-					-		-					_	
Ampioillip		0			_					_					_					-	_						

Table Antimicrobial susceptibility testing of S. Blukwa in Snakes - zoo animal - at zoo - Clinical investigations - quantitative data [Diffusion method]

Number of resistant isolates (n)	Number of resistant isolates (n) and number of isolates with the concentration (μl/ml) or zone (mm) of inhibition equal to
	S. Blukwa
	Snakes - zoo animal - at zoo - Clinical investigations
Isolates out of a monitoring Programme	ou
Number of isolates available in the laboratory	
	1
Antimicrobials:	392 32 32 32 32 32 32 32 32 32 32 32 32 32
Tetracyclines	-
Amphenicols	
Chloramphenicol 1	0
Florfenicol 1	
Cephalosporins	
Cefotaxim(4)	0
Fluoroquinolones	
Ciprofloxacin(1)	0
Enrofloxacin(2)	
Quinolones	
Nalidixic acid	0
Trimethoprim(3)	
Sulfonamides	
Sulfonamide 1	0
Aminoglycosides	
Streptomycin 1	
Gentamicin	0
Neomycin	
Kanamycin 1	
Spectinomycin 1	
Trimethoprim +	-
sunonamides	
Penicillins	
Amoxicillin	
Amoxicillin/Clavulanic acid	0

(1): 40 mm (2): 42 mm (3): 36 mm (4): 42 mm

# Table Antimicrobial susceptibility testing of S. Blukwa - qualitative data

n = Number of resistant is	solates	
	S. Blukwa	
	Snakes - zoo animal - at zoo - Clinical inve	estigations
Isolates out of a	no	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
	To a second	
Antimicrobials:	N	n
Tetracyclines	1	0
Amphenicols		
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins	7	
Cefotaxim	1	0
Fluoroquinolones	٦.	
Ciprofloxacin	1	0
Enrofloxacin	1	0
Quinolones	٦.	
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides		
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins		
Amoxicillin	1	0
Amoxicillin/Clavulanic acid	1	0
Ampicillin	1	0

Table Antimicrobial susceptibility testing of S. Bredeney in Meat from bovine animals and pig - at processing plant -Monitoring - quantitative data [Diffusion method]

S. Bredeney   Meat from bovine animals and pig - at processing plant - Monitoring   Meat from bovine animals and pig - at processing plant - Monitoring   Maintenance   Maintenance	f a monitoring plates available ory ials:	Number of resistant isolates (ii) and number of isolates with the concentration (pirm) of minimal edual to
Meat from bovine animals and pig - at processing plant - Monitoring   1	f a monitoring plates available ory sol ns ns des +	
Table a variable   1	f a monitoring yes  lates available 1  Institute 1  Institute 2  Institute 3  Insti	vig - at processing plant - Monitoring
10   10   10   10   10   10   10   10	100	
10   10   10   10   10   10   10   10	SI	
28 28 28 29 29 29 29 29 29 29 29 29 29 29 29 29	Igns: Salars:	
1   0   1   1   1   1   1   1   1   1	Institute of the state of the s	33 33 33 33 34 35 35 35 35 35 35 35 35 35 35 35 35 35
		-
		1
		1
1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	in i	1
Interior acid 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	in i	
1	indicated and the second and the sec	
1	indian in the second of the se	-
Ilanic acid 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	included in the second of the	
1   0   1   Clavulanic acid	1 1	-
/Clavulanic acid		
/Clavulanic acid 1 0 1	_	1
0		
	Ampicillin 1	1

Tatracyclin 1

# Table Antimicrobial susceptibility testing of S. Bredeney - qualitative data

n = Number of resistant is	solates		
	S. Bredeney		
	Meat from bovine animals and pig - at pro-	cessing plant - Monitoring	
Isolates out of a	yes		
monitoring programme			
Number of isolates	1		
available in the			
laboratory			
Antimionabiata	ln	T <sub>10</sub>	
Antimicrobials:	<b>N</b>	0	
Tetracyclines	1	U	
Amphenicols			
Chloramphenicol	1	0	
Florfenicol	1	0	
Cephalosporins	٦.		
Cefotaxim	1	0	
Fluoroquinolones	1.	la.	
Ciprofloxacin	1	0	
Enrofloxacin	1	0	
Flumequin	1	0	
Quinolones	٦.		
Nalidixic acid	1	0	
Trimethoprim	1	0	
Sulfonamides	1		
Sulfonamide	1	0	
Aminoglycosides	1		
Streptomycin	1	0	
Gentamicin	1	0	
Neomycin	1	0	
Kanamycin	1	0	
Spectinomycin	1	0	
Trimethoprim +	1	0	
sulfonamides			
Penicillins	•		
Amoxicillin	1	0	
Amoxicillin/Clavulanic acid	1	0	
Ampicillin	1	0	

Table Antimicrobial susceptibility testing of S. Cubana in All feedingstuffs - Monitoring - quantitative data [Diffusion method]

Nimbor of roctotate tactories	Nimber of recistant isolates (n) and nimber of isolates with the concentration (ul/ml) or zone (mm) of inhibition equal to	
	S. Cubana	
	All feedingstuffs - Monitoring	
Isolates out of a monitoring programme	yes yes	
Number of isolates available in the laboratory	ble 1	
1	# # # # # # # # # # # # # # # # # # #	
Antimicrobiais:		
Tetracyclines		
Amphenicols		
Chloramphenicol	0 0 1	
Florfenicol		
Cephalosporins		١.
Cefotaxim(4)	1 0	
Fluoroquinolones		
Ciprofloxacin(1)	1 0	
Enrofloxacin(2)	1 0	
Quinolones		
Nalidixic acid		
Trimethoprim		
Sulfonamides		
Sulfonamide	1 0	
Aminoglycosides		
Streptomycin	1	
Gentamicin	0 0	
Neomycin		
Kanamycin	0 0	
Spectinomycin	-	
Trimethoprim + sulfonamides(3)	7	
Penicillins		
Amoxicillin	0	
Amoxicillin/Clavulanic acid	1	

(1): 40 mm (2): 36 mm (3): 36 mm (4): 39 mm

# Table Antimicrobial susceptibility testing of S. Cubana - qualitative data

n = Number of resistant is	solates	
	S. Cubana	
	All feedingstuffs - Monitoring	
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
Authoritani	Ta.	I.
Antimicrobials:	<b>N</b>	n
Tetracyclines	1	0
Amphenicols		
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Enrofloxacin	1	0
Quinolones		
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides		
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins	1	,
Amoxicillin	1	0
Amoxicillin/Clavulanic	1	0
acid		
Ampicillin	1	0

# Table Antimicrobial susceptibility testing of S. Derby - qualitative data

n = Number of resistant is	solates	
	S. Derby	
	Turkeys - at farm - environmental sample	- Monitoring
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
Action	Tay.	T.,
Antimicrobials:	<b>N</b>	<b>n</b>  1
Tetracyclines	1	1
Amphenicols	7.	
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins	٦.	
Cefotaxim	1	0
Fluoroquinolones	1.	
Ciprofloxacin	1	0
Enrofloxacin	1	0
Quinolones		
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides		
Streptomycin	1	1
Gentamicin	1	0
Neomycin	1	1
Kanamycin	1	1
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins		
Amoxicillin	1	0
Amoxicillin/Clavulanic acid	1	0
Ampicillin	1	0

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

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	)	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
Number of resistant isolates	Number of resistant isolates (n) and number of isolates with the concentration (µ/m) of zone (n/m) of innibition equal to	im) or innibition equal to	
	S. Derby		
	Turkeys - at farm - environmental sample - Monitoring	- Monitoring	
Isolates out of a monitoring programme	yes		
Number of isolates available in the laboratory	B 1		
		-	-
Antimicrobials:	91 91 91 91 91 91 91 91 91 91	12 23 13 16 16 17 18	32 33 30 30 30 30 30 30 30 30 30 30 30 30
Tetracyclines	-		
Amphenicols			
Chloramphenicol	0		1
Florfenicol	1 0 1		1
Cephalosporins			
Cefotaxim	1 0		
Fluoroquinolones			
Ciprofloxacin(1)	0		~
Enrofloxacin(2)	1 0		
Quinolones			
Nalidixic acid	0		-
Trimethoprim	0		7
Sulfonamides			
Sulfonamide	1 0		1
Aminoglycosides			
Streptomycin	-		
Gentamicin	0		-
Neomycin			
Kanamycin	-		
Spectinomycin	0	7-	
Trimethoprim + sulfonamides	0		7
Penicillins	-	-	-
Amoxicillin	0		-
Amoxicillin/Clavulanic acid	0		-

(1): 40 mm (2): 38 mm

Table Antimicrobial susceptibility testing of S. Derby in Meat from pig - meat products - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	nd number	of isc	lates	with	the c	once	ntratie	ln) uo	o (lm/	r zon	e (mn	of ii	nhibit	ion ec	ual to														
S	S. Derby							;	,																				
2	Meat from pig - mea	idι	g -	me		rod	t products - Monitoring	3 - N	Jon	itori	ng																		
Isolates out of a monitoring yes programme																													
Number of isolates available in the laboratory																													
Antimicrobials: N	u	9	7	8	01 01	11	12	13	τl	12	91	<u>د،</u>	81 61	02	12	22	53	77	52	97	72	8Z	08	31	32	33	75	32	
Amphenicols		1		1	1	1	1	1	1	]	1	1	1	1	1	4			1	1	1	1	1	1	1			:	
Chloramphenicol 1	0	П	Н		Н									H				_	П	Н	Н	Н		H					
Florfenicol 1	0																			-									
Cephalosporins																													
Cefotaxim(3)	0																											1	
Fluoroquinolones																							-	-					
Ciprofloxacin(1)	0				-	_								_														-	
Enrofloxacin(2)	0																											_	
Flumequin 1	0	_			_									_							_					-			
Quinolones																													
Nalidixic acid	0																		_										
Trimethoprim 1	0																												
Sulfonamides																													
Sulfonamide 1	1   1	_			_																_			_					
Aminoglycosides																													
Streptomycin 1	-																												
Gentamicin 1	0				-							-		_				_											
Neomycin 1	0															-													
Kanamycin 1	0																-												
Spectinomycin 1	-	_			-																								
Trimethoprim + sulfonamides	0													-															
Penicillins																													
Amoxicillin 1	0				-	_								_						-				_					
Amoxicillin/Clavulanic acid 1	0				-																		-						
Ampicillin 1	0		$\dashv$	$\dashv$	$\dashv$	$\dashv$	4	_				$\dashv$	$\dashv$	_	_						-	-	$\dashv$	_					

(1):37 mm (2):37 mm (3):39 mm

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# Table Antimicrobial susceptibility testing of S. Derby - qualitative data

n = Number of resistant is	solates			
	S. Derby			
		- carcass - Monitoring	Meat from pi Monitoring	ig - meat products -
Isolates out of a	yes		yes	
monitoring programme				
Number of isolates available in the laboratory	1		1	
Antimicrobials:	N	n	N	n
Tetracyclines	1	1	1	1
Amphenicols	•		-	
Chloramphenicol	1	0	1	0
Florfenicol	1	0	1	0
Cephalosporins		·	,	
Cefotaxim	1	0	1	0
Fluoroquinolones			,	
Ciprofloxacin	1	0	1	0
Enrofloxacin	1	0	1	0
Flumequin	1	0	1	0
Quinolones			,	
Nalidixic acid	1	0	1	0
Trimethoprim	1	0	1	0
Sulfonamides		'	ı	'
Sulfonamide	1	0	1	1
Aminoglycosides	1	'		'
Streptomycin	1	1	1	1
Gentamicin	1	0	1	0
Neomycin	1	1	1	0
Kanamycin	1	1	1	0
Spectinomycin	1	0	1	1
Trimethoprim +	1	0	1	0
sulfonamides				
Penicillins				
Amoxicillin	1	0	1	0
Amoxicillin/Clavulanic	1	0	1	0
Ampicillin	1	0	1	0

Table Antimicrobial susceptibility testing of S. Derby in Meat from pig - carcass - Monitoring - quantitative data [Diffusion method]

Nimber of resistant isolates (n) and number of isolates with the concentration (n)(m) or zone (mm) of inhihition equal to	lmin bue (u)	Je .	l is	lates	with	the c	la Suco	otratic	lii) uc	(lm/	1 20n	um) e	n) of i	hihit	l doi	100	٤													
	S. Derby	>															:													
	Meat from pig - carcass - Monitoring	on	jd	) - G	car	Sas	S - F	Mon	itor	ing																				
Isolates out of a monitoring programme	yes																													
Number of isolates available in the laboratory	<del>-</del>																													
Antimicrobials:	z	u	9	2	8	9 01	11	12	13	Þ١	SI	91	۷۱	81 91	20	22	22	23	24	52	97	72	82	56	30	32	33	34	32	
Amphenicols		1	1			1	1	1	1			1	1	1	1	1	1	1	1				1	1	1	1	1	1	l	Ι
Chloramphenicol	1	Н	Н		-	-								-	-	-		L			-		Т		Н	-		L		
Florfenicol	1 0																			-										
Cephalosporins																														
Cefotaxim(3)	1 0																												1	
Fluoroquinolones																							٠							
Ciprofloxacin(1)	1 0																												-	
Enrofloxacin(2)	1 0																												-	
Flumequin	1 0		_			_									_	_										_	-			
Quinolones																														
Nalidixic acid	1						_								_	_					-									
Trimethoprim	0																						`	-						
Sulfonamides																	-		-				-	-	-	-	-	-	-	
Sulfonamide	1 0		_			_						1			_	_										_				
Aminoglycosides							-									-	-						-	-	-	-	-	-		١.
Streptomycin	-	-																												
Gentamicin																				-										
Neomycin	1	-																												
Kanamycin	1	-													-															
Spectinomycin	1 0																	-												
Trimethoprim + sulfonamides	0																									-				
Penicillins																														
Amoxicillin	1 0																				-									
Amoxicillin/Clavulanic acid	1 0	+														_								-						
Ampicillin	1 0	$\dashv$	-	$\dashv$	$\dashv$	$\dashv$	$\dashv$	4	_				$\dashv$	$\dashv$	$\dashv$	4	4	4				-			-	+	4	_		

Tetracyclin 1: 39 mm (2): 36 mm (3): 39 mm

# Table Antimicrobial susceptibility testing of S.Enteritidis in animals

	S. Er	nteritidis								
	Cattle	(bovine als)	Pigs		Gallus (fowl)	gallus	Turke	ys	Repti	iles
Isolates out of a	no		no		yes		no		no	
monitoring programme										
Number of isolates	0		0		22		0		1	
available in the										
laboratory										
Antimicrobials:	N	n	N	n	N	n	N	n	N	n
Tetracyclines					22	0			1	0
Amphenicols										
Chloramphenicol					22	0			1	0
Florfenicol					22	1			1	0
Cephalosporins					22	0			1	0
Cefotaxim Fluoroquinolones						U			I I	0
Ciprofloxacin	1				22	0			1	0
Enrofloxacin					22	0			1	0
Flumequin					4	0			'	
Quinolones										
Nalidixic acid					22	0			1	0
Trimethoprim					22	0			1	0
Sulfonamides	_				I				l l	I
Sulfonamide					22	0			1	1
Aminoglycosides										
Streptomycin					22	0			1	1
Gentamicin					22	0			1	1
Neomycin					22	0			1	0
Kanamycin					22	0			1	0
Spectinomycin					22	0			1	1
Trimethoprim +					22	0			1	0
sulfonamides										
Penicillins	1				00	0			4	0
Amoxicillin					22	0	-		1	0
Amoxicillin/Clavulanic acid					22	0			1	0
Ampicillin					22	0			1	0
Fully sensitive					21					
Resistant to 1 antimicrobial					22	1				
Resistant to 4 antimicrobials									1	1

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - unspecified - at farm - environmental

sample - Monitoring - quantitative data	nb - í	ant	itat	<u>×</u>	dat		)iff	ısic	u u	[Diffusion method]	por	_					,	•											
Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	and nur	nber	of isc	olates	with	the c	once	ıtratic	/l៧) uc	io (Im	zone	mm) e	of ir	hibiti	on ec	qual to	٥												
07	S. Enteritidis	terit	idis																										
	Gallus gallus (fowl)	s ga	Illus	(fo	(Iw	<u>n</u>	JSp	ecifi	eq	- at	farr	) - U	envi	ron	me	ntal	sal	mpl	- 0	Mor	unspecified - at farm - environmental sample - Monitoring	ing							
Isolates out of a monitoring y programme	yes																												
Number of isolates available 5 in the laboratory																													
Antimicrobials:	z	u	9		8	6	11	12	13	ÞΙ	S١	91	۶۱ 8۱	61 61	50	12	22	23	54	52	97	87	58	30	31	32	33	32	
Tetracyclines <sup>5</sup>		0																		7	7	-							
						-	-	-					-	-	-	-					-	_	-	-				-	_
enicol		0	$\forall$		1	+	-						+	+	4					က	+	7	-				+	+	
Florfenicol 5		-	1											-								2		-					
rins							-						-							-	-	-					-		
Cefotaxim(5)		0	$\exists$																									2	
sət							-							-	ŀ	-						-							
		0			1	+	+						+	+	4					+	+	-	_			T		2	
Enrofloxacin(2) 5		0																								-		2	
							-							-														-	
Nalidixic acid 5		0				+	+	4						+	4	4				-	7			-				-	
Trimethoprim(3)		0																						-	-	-	τ-	<del>-</del>	
Si				-							-											-							
Sulfonamide		0				-	_								-	-			2	-		_							
ides				-		-	-				-		-			-					-	-	-				-		
<b>C</b>		0	7									-	-	7	-														
		0																	T	3									
		0															-		T	_									
		0																-	T	m									
Spectinomycin 5		0				+	+	_						+	4	4	-	2	2		+		4	4				-	
Trimethoprim + sulfonamides(4)		0																								-	m	-	
Penicillins					1	1	-	_					-	-	-						-	-	-					-	
Amoxicillin   5		0			H	H	H		L				-	H	H	L	L			2	-	~	H	-			-	H	L
Amoxicillin/Clavulanic acid 5		0				H	H				Г			H	L				Г		H	2	7		-	T		H	_
		ĺ			l							l		1					İ							ĺ		1	1

(1): all five strains 36 mm(2): two strains 36 mm(3): one strain 38 mm(4): one strain 39 mm(5): two strains 36 mm, one 37 mm, two 38 mm

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - unspecified - at farm - animal sample

- organ/tissue - Monitoring - quantitative	nitoring	nb - l	antit	ative	da da	ta [L	iffu	e data [Diffusion method]	me u	tho	ਓ		) <b>.</b>				_		}						_
Number of resistant isolates (n) and number of isolates with the	and numbe	er of iso	lates w	ith the		ntratic	u/lrl) u	concentration (μl/ml) or zone (mm) of inhibition equal to	one (r	nm) of	f inhib	ition e	qual t	0											
	S. Enteritidis	ritidis																							
	Gallus gallus (fowl)	allus	(fow	-	dsur	ecifi	- nspecified		at farm -		animal sample	sar	nple	- 1	rgar	/tis	sue	organ/tissue - Monitoring	onit	orin	g				
Isolates out of a monitoring programme	yes																								
Number of isolates available in the laboratory	ಬ																								
Antimicrobials:		9	8	6	11	12	13	۶۱ الا	19	۲۱	81	19	51	22	23	52 54	97	72	82	55	30	32	33	32	
Tetracyclines	9														-	-	-	-							
			-														-			-	-			-	
enicol															4	Ì									
	9											-				-	_		_	1 2					
																					-				
Cefotaxim(4)	9				-							-					-					-	- 5	2	
(1)					+	-		$\dashv$	+	1		$\dashv$	4			+	+	1			+	-	-	7	
<b>C</b>	2		+					+	+			-	4			-	+		-		-	-	-	-	
	0				$\dashv$							_				$\dashv$	$\dashv$			-		-			
			-					-	-			-	-				-			-	-			-	
Nalidixic acid			+		+							+				m	-	-			_		+		
Trimethoprim	0													-						_		2			
Sulfonamides																	,		,	,					
	5 0											_	_	-		$\dashv$	- 5								
ides											C	_								-	-				
_											7														
								+	-			+			-	7	-	-							
(i						-		1	-			+	_		7		+	1		-	-		-		
								+	-			+	_			7	-								
Spectinomycin								+				+		m	-		-								
Trimethoprim + sulfonamides(3)	o																						-	N	
Penicillins																									
Amoxicillin	9		-			-										-	7	-	-						

Ampicillin	5	0	_					_	_	-	7	
(1): one strain 38 mm												
(2): 30, 31 and 34 mm zones obtained by tablet	nes obtair	ed by 1	ablet									
(3): two strains 36 mm												
(4): one strain 39 mm												

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

- taeces - Monitoring - quantitative data	i Bu	qua	intit	iati	S (e	lata	_	[Dirrusion metnod]		Ĕ	etuc	gg																		
Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	(n) and	numb	er of	isola	tes wi	ith th	e con	centra	ıtion (	lm/lm	or zo	one (n	nm) o	f inhi	bition	edua	al to													
	S. Enteritidis	nte	ritid	is,					:	.	,																			
	Gallus gallus (fowl)	) SN	gallt	ns (	to≷	•	nus	unspecified -	ifie	-	at tarm -	딜	- a	anımal		sample		<u>.</u> Tä	ő	- 0	힘	- taeces - Monitoring	ıng							
Isolates out of a monitoring programme	yes																													
Number of isolates available in the laboratory	15																													
Antimicrobials:	z	u	9		8	6	10	11	71	13	۹2 	91	2١	81	61	50	12	77	54 53	52	56	72	82	58	30	31	32	33	34	32
Tetracyclines	12	0																	7	7	4	ო			-					
Amphenicols																														
Chloramphenicol	12	0	4						+									-		7	2	7		-			_			
Florfenicol	12	0		_					$\dashv$												ဗ	-	9				_		_	
Cephalosporins																		-												
Cefotaxim(5)	12	0																			_				_			1	10	0
Fluoroquinolones																														
Ciprofloxacin(1)	12	0	4						1	-	_							+	-									7		
Enrofloxacin(2)	12	0	4	_					1	-	-							+	-						က		က	က	ო	
Flumequin	1	0																							-					
Quinolones										-			-				-		-	-		-				-	-	-	-	
Nalidixic acid	12	0	-	_					1										-	_	7	-								
Trimethoprim	12	0																					7	-	က		ь 1	7		
Sulfonamides																														
Sulfonamide	12	0														က	-	Н	9	-			-							
Aminoglycosides																														
Streptomycin	12	0											-	က	7	_														
Gentamicin	12	0		_							-							-	4	7		-								
Neomycin(3)	12	0									-							9	4	-					_					
Kanamycin	12	0																		-	-									
Spectinomycin	12	0		_													က	4	n	-		-							T	
Trimethoprim +	12	0																							_	-	2	4	_	
suironamides(4)				_					-	-	_	4						-	_	_	4							1		-
Penicillins	2	C		_					-	-	-	-						-	-	-	c	c	,					-	-	
Amoxicillin	17	>									_							_	_	4	n	n	-					_	_	

Amoxicillin/Clavulanic acid	12	<b>o</b>										_		4	_	_			
Ampicillin	12	0	_						-	2	-	4	1				-		
(1) : four strains 36 mm. one 37 mm. three 38 mm. one 39 mm	one 37 m	m. three	38 mm.	one 39 1	uu														
(2): three strains 36 mm																			

(3): 30 mm obtained by tablet (4): one strain 36 mm (5): five strains 36 mm, one 37 mm, one 38 mm, one 39 mm, one 40 mm, one 42 mm

Table Antimicrobial susceptibility testing of S. Enteritidis in Reptiles - zoo animal - at zoo - Clinical investigations quantitative data [Diffusion method]

N	
Number of resistant isolates	Number of resistant isolates (ii) and number of isolates with the concentration (primit) of minibition equal to  S. Enteritidis
	Reptiles - zoo animal - at zoo - Clinical investigations
Isolates out of a monitoring programme	Ou
Number of isolates available in the laboratory	
	1 1 1 2 2 2 2 2 1 1 1 2 2 2 2 2 2 2 2 2
Antimicrobials:	
Tetracyclines	1
Amphenicols	
Chloramphenicol	1 0
Florfenicol	1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Cephalosporins	
Cefotaxim(3)	1 0
Fluoroquinolones	
Ciprofloxacin(1)	0 0 1
Enrofloxacin(2)	1 0
Quinolones	
Nalidixic acid	-
Trimethoprim	7
Sulfonamides	
Sulfonamide	1 1 1
Aminoglycosides	
Streptomycin	
Gentamicin	
Neomycin	1 0
Kanamycin	1 0
Spectinomycin	
Trimethoprim + sulfonamides	
Donicilline	
A movioillis	
AIIIOAICIIIIII	
Amoxicillin/Clavulanic acid	

(1):39 mm (2):36 mm (3):38 mm

Table Antimicrobial susceptibility testing of S. Enteritidis in Eggs - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	nd number of i	solates	s with	the col	ncentr	ation	(hl/ml)	or zo	me (m	m) of i	inhibit	ion ec	qual to													
S	S. Enteritidis	S																								
Ш	Eggs - Monitoring	itorii	ηg																							
Isolates out of a monitoring yes programme																										
Number of isolates available in the laboratory																										
N .cloidoscimitas A			8	0	ı	z	3	9	9	2	8	0	ı	2	ε	<u>-</u>	9	2	8	6	0	ı	7	3	9	
		:			ı			_	L	_	_		7	7	z			_	_	- 2	ε				_	
Amphenicols	_																									
Chloramphenicol	0						-	-		Г	-	H				Н	Н	H	-					-	H	H
Florfenicol	0																	-								
Cephalosporins											-					-		-				-	-	-	-	
Cefotaxim(3)	0			_				_									_								-	
Fluoroquinolones	-										-					-	-						-	-		
Ciprofloxacin(1)	0																								-	
Enrofloxacin(2)	0																								-	
Quinolones				-			-	-			-	-	-			-	-	-	-					-	-	-
Nalidixic acid	0															-										
Trimethoprim	0																						_			
Sulfonamides																										
Sulfonamide 1	0													-												
Aminoglycosides																										
Streptomycin 1	0									-																
Gentamicin 1	0															-										
Neomycin	0														_											
Kanamycin 1	0														_											
Spectinomycin 1	0			_											_			_								
Trimethoprim + sulfonamides	0																								-	
Penicillins																,										
Amoxicillin 1	0			_				_				_							-							
Amoxicillin/Clavulanic acid	0																					_				
Ampicillin 1	0		_				_	_				_					_		_					_		

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(1):39 mm (2):36 mm (3):38 mm

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Table Antimicrobial susceptibility testing of S. Enteritidis in minced meat - Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - intended to be eaten cooked - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the	and number	of isc	olates	with	the c	oncer	ntratic	/lrl) uc	concentration (µl/ml) or zone (mm) of inhibition equal to	r zone	mm) ŧ	of in	hibiti	ion ec	qual to	0												
	S. Enteritidis	idis																										
	Meat, red meat (meat	I me	eat	(me		ron	oq u	vine	3S, I	sgic	., gc	ats	, sh	eer	), h	orse	3S, (	qon	key	s, b	isor	ı an	γ	ateı	r bu	from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) -	- (sc	
ב	minced meat - intended to be eaten cooked - Monitoring	eai	t - =	nter	gec	) 10	pe	eat	en c	000	(ed	Σ	onit	orir	g													
Isolates out of a monitoring yes	Si																											
Number of isolates available in the laboratory																												
Antimicrobials: N	u	9	7	8	6 0۱	11	12	13	ÞΙ	۶۱	91	۲۱ 8۱	61	50	21	22	23	54	52	9Z 7Z	82	58	30	31	32	33	32 34	00
7 Tetracyclines	0																			-								
Amphenicols																												
Chloramphenicol	0											-		_					2		-							
Florfenicol	0											_	_	_					2		_							
Cephalosporins																												
Cefotaxim(1)	0																										2	
Fluoroquinolones																												
	0																								_	-		
Enrofloxacin 2	0											_													2			
Quinolones																												
Nalidixic acid	0																	_	_									
Trimethoprim 2	0																						-	-				
Sulfonamides																												
Sulfonamide	0																	-		_								
sides																												
	0				_					-		-	-	_							_							
Gentamicin 2	0																-		_									
Neomycin 2	0																-		_									
Kanamycin 2	0															-		_										
Spectinomycin 2	0				$\vdash$											7					-							
Trimethoprim + sulfonamides	0																								_			

Amoxicillin 0		-	-			
Amoxicillin/Clavulanic acid 2 0				7		
Ampicillin 0			2			

(1) : one strain 36 mm, one 38 mm

Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from rabbit - mechanically separated meat (MSM) - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	) and num	per	of is	olate	s wit	h the	conc	entra	tion (	ul/ml)	) or z	ne (n	nm) c	ıf inhi	bition	η edu	al to														
	S. Enteritidis	ərit	idis	رم																											
	Meat from rabbit - mechanically separated meat (MSM) - Monitoring	ron	n ra	qqe	it -	me	cha	niç	ally	sep	are	ıted	me	at	(MS	(MS	- ≥	loni	tori	ng											
Isolates out of a monitoring programme	yes																														
Number of isolates available in the laboratory	_																														
Antimicrobials:	z	u	9	L	8	6	10	11	13	۶۱ د د	٦.	91	۲۱	81	16	50	21	22	53	54	3e 52	25	28	57	30	31	32	33	34	32	
Tetracyclines	-	0																					-								
Amphenicols																															
Chloramphenicol	1										-										-		~								
Florfenicol	1 (	0									_												_	-							
Cephalosporins																															
Cefotaxim(3)	1 0																													1	
Fluoroquinolones																															
Ciprofloxacin(1)	_	0							-												-		-	-						_	
Enrofloxacin(2)	1 0																				_		_							-	
Quinolones																								,							
Nalidixic acid		0																			-										
Trimethoprim	-	0																										-			
Sulfonamides																1	,					1									
Sulfonamide	1 (	0									_								1												
Aminoglycosides																															
Streptomycin																_															
Gentamicin	_	0																			-										
Neomycin	_	0							-		-									-											
Kanamycin	-	0							-											-											
Spectinomycin		0																		-											
Trimethoprim + sulfonamides		0																											-		
Penicillins	-										-																				
Amoxicillin		0				Г			-	_	-	_						Т	Т	Н	Н	-	Н	Н	H	H	L				
Amoxicillin/Clavulanic acid	1								H		H													-		Н					

(1):38 mm (2):36 mm (3):40 mm

Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from pig - carcass - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates	Number of resistant isolates (n) and number of isolates with the concentration (µl/mi) of zone (mm) of inhibition equal to	
	S. Enteritidis	
	Meat from pig - carcass - Monitoring	
Isolates out of a monitoring programme	se/ E	
Number of isolates available in the laboratory	le 4	
Antimicrobials:	98 33 30 30 57 57 57 57 57 57 57 57 57 57 57 57 57	
Tetracyclines	0 4	
Amphenicols		
Chloramphenicol	0	
Florfenicol	4 0 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Cephalosporins		
Cefotaxim(4)	4 0	
Fluoroquinolones		
Ciprofloxacin(1)	0	
Enrofloxacin(2)	4 0 1 2 1	
Quinolones		
Nalidixic acid		
Trimethoprim	3 1	
Sulfonamides		
Sulfonamide	4 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Aminoglycosides		
Streptomycin	1 2 1	
Gentamicin	4 0	
Neomycin		
Kanamycin	0	
Spectinomycin		
Trimethoprim +	0 4	
Penicillins		
Δ moxicillin	4	
	C	
Amoxicillin/Clavulanic acid	N -	

(1): one strain 36 mm, one 37 mm, one 40 mm
(2): one strain 38 mm
(3): one strain 36 mm
(4): one strain 36 mm, one 39 mm, one 40 mm

## Table Antimicrobial susceptibility testing of S. Enteritidis - qualitative data

n = Number of resistant is	solates													
		nterit	idis											
	broil (Gall gallu carca	us ıs) -	turke mech sepa meat	t from ey - lanically larated t (MSM)	pig - carca Moni	from ass - toring	rabb mech sepa meat	anically trated t (MSM)	broil (Gall gallu offal -	us ıs) -	from bovii pigs, shee hors donk bison wate buffa mind meat inter be ea cook	t (meat nes, , goats, pp, es, keys, n and r alos) - ed t - aded to aten		s - toring
Isolates out of a	yes		yes		yes		yes		yes		yes		yes	
monitoring programme Number of isolates available in the laboratory	1		1		4		1		3		2		1	
									1					
Antimicrobials:	<b>N</b>	<b>n</b>	<b>N</b>	<b>n</b>	<b>N</b> 4	<b>n</b>	<b>N</b>	<b>n</b>	<b>N</b>	<b>n</b>	<b>N</b>	<b>n</b>	<b>N</b>	<b>n</b>
Tetracyclines	<u> </u>		<u> </u>			0	<u>'</u>	0	<u> </u>	0			•	
Amphenicols Chloramphenicol	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Florfenicol	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Cephalosporins														
Cefotaxim	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Fluoroquinolones	1.	1-		1.		1 -	1.	1 -	_	1-	1 -	1-		1 -
Ciprofloxacin	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Enrofloxacin	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Flumequin(1)	1	0	1	0					2	0	2	0	1	0
Quinolones	1.	10												10
Nalidixic acid	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Trimethoprim	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Sulfonamides	1.	10										10		
Sulfonamide	1	0	1	0	4	0	1	0	3	1	2	0	1	0
Aminoglycosides	14	0	1	0	4	0	1	0	2	1	2	0	4	0
Streptomycin	1	0	1	0	4	0	1	0	3	1	2	0	1	0
Gentamicin	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Neomycin	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Kanamycin	1	0	1	0	4	0	1	0	3	1	2	0	1	0
Spectinomycin  Trimethoprim + sulfonamides	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Penicillins	1							,		,				
Amoxicillin	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Amoxicillin/Clavulanic acid	1	0	1	0	4	0	1	0	3	0	2	0	1	0
Ampicillin	1	0	1	0	4	0	1	0	3	0	2	0	1	0

<sup>(1):</sup> Not tested: strains from pigs, one of three strains from broiler liver, strain from rabbit and strain from eggs

Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from broilers (Gallus gallus) - carcass - Monitoring quantitative data [Diffusion method]

Number of resistant isolates (n)	Number of resistant isolates (n) and number of isolates with the concentration (ul/ml) or zone (mm) of inhibition equal to
	S. Enteritidis
	Meat from broilers (Gallus gallus) - carcass - Monitoring
Isolates out of a monitoring y programme	yes
Number of isolates available in the laboratory	
	t
Antimicrobiais:	6 8 2 2 9 u c
Tetracyclines	
Amphenicols	
Chloramphenicol 1	
Florfenicol 1	
Cephalosporins	
Cefotaxim(2)	0
səı	
(5)	0
Enrofloxacin 1	0
Flumequin 1	
Nalidixic acid	0
Trimethoprim	-
Sulfonamides	
Sulfonamide 1	
sides	- - - - - - - -
<b>E</b>	0
_	0
Neomycin 1	0
	0
Spectinomycin 1	-
Trimethoprim + sulfonamides	0
Penicillins	
1 Amovicillia	
AITIOXICIIIII	

Amoxicillin/Clavulanic acid
Ampicillin
(1): 36 mm
(2): 36 mm

Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from turkey - mechanically separated meat (MSM) - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n)	Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to
	S. Enteritidis
	Meat from turkey - mechanically separated meat (MSM) - Monitoring
Isolates out of a monitoring y programme	yes
Number of isolates available in the laboratory	
Antimicrobials: N	
Tetracyclines	
Amphenicols	
Chloramphenicol	
Florfenicol	
Cephalosporins	
Cefotaxim 1	
Fluoroquinolones	
Enrofloxacin 1	
Flumequin 1	
Nalidixic acid	
Trimethoprim	
Sulfonamides	
Sulfonamide 1	
sides	
<b>-</b>	
_	
Neomycin	
Kanamycin	
Spectinomycin	-
Trimethoprim + sulfonamides	0
Penicillins	
Amoxicillin	

Amoxicillin/Clavulanic acid Ampicillin

Table Antimicrobial susceptibility testing of S. Enteritidis in offal - Meat from broilers (Gallus gallus) - liver -Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	n) and num	ber	of isc	olates	s with	the (	conce	ntrati	n) uo	/ml)	or zor	lm) əc	n) of i	idihii	tion	anal	\$													
	S. Enteritidis	) eriti	dis						;	`																				
	Meat from broilers	ron	ld r	roile	ers	$\sim$	Illus	ga	Ilus	o - (	ıffal	<u>-</u>	Gallus gallus) - offal - liver - Monitoring	- M	onit	orin	g													
Isolates out of a monitoring programme	yes																													
Number of isolates available in the laboratory	ဧ																													
Antimicrobials:			9	7	8	6	11	12	13	ÞΙ	12	91	۷١	18	61	20	22	23	54	52	97	72	82	67	30	32	33	34	32	۱.
Tetracyclines	0 E	_																			-		7							
Amphenicols																														
Chloramphenicol	3														-			_		7			-							
Florfenicol	3 0														_					-	-	-								
Cephalosporins																														
Cefotaxim(3)	3 0								_						_	_	_	_											က	
Fluoroquinolones																														
Ciprofloxacin(1)				7			1			_			7			-		-									_	-	7	
Enrofloxacin(2)																-										-			7	
Flumequin	2 0																								-		-			
Quinolones																														
Nalidixic acid							1		_	_			7								-	7								
Trimethoprim	0 E	_																						_			-			
Sulfonamides																-														
Sulfonamide	3	-													-			-												
Aminoglycosides															-	-		-	-									-		
Streptomycin	3	-											.4	2			_													
Gentamicin							-												-	-										
Neomycin																		-	-	-										
Kanamycin								4									4	7		-						-				_
Spectinomycin		-																-	-											_
Trimethoprim + sulfonamides	O 8	_																			-					7				
Penicillins																														
Amoxicillin	3		$\exists$	$\exists$		$\exists$	$\dashv$												-	-		-								

ic acid 3 0	0
-	2
_	

(1): two strains 36 mm (2): two strains 36 mm (3): two strain 36 mm, one 39 mm

# Table Antimicrobial susceptibility testing of S. Enteritidis - qualitative data

n = Number of resistant is	olates	
	S. Enteritidis	
	All feedingstuffs - Monitoring	
Isolates out of a	yes	
monitoring programme		
Number of isolates	]1	
available in the		
laboratory		
Antimicrobials:	N	n
Tetracyclines	1	0
Amphenicols		
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins		
3rd generation	1	0
cephalosporins		
Cefotaxim	1	0
Fluoroquinolones	1	
Ciprofloxacin	1	0
Enrofloxacin	1	0
Flumequin		
Quinolones	1	
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides	,	
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins	1	,
Amoxicillin	1	0
Amoxicillin/Clavulanic	1	0
acid		
Ampicillin	1	0

Table Antimicrobial susceptibility testing of S. Enteritidis in All feedingstuffs - Monitoring - quantitative data [Diffusion method]

Cotologi tactojoga je zodani M	(m) and minimum of includes the consequencian (iii) or sone (mm) of inhibition count to
Mulliori Ol resistant isolates	S. Enteritidis
	All feedingstuffs - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	
	## 3 3 3 4 4 4 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6
Antimicrobiais:	
Tetracyclines	
Amphenicols	
Chloramphenicol	1 1
Florfenicol	
Cephalosporins	
Cefotaxim(1)	1 0
Fluoroquinolones	
Ciprofloxacin	1 1
Enrofloxacin	1 0
Quinolones	
Nalidixic acid	-
Trimethoprim	
Sulfonamides	
Sulfonamide	1 0
Aminoglycosides	
Streptomycin	1 0
Gentamicin	0
Neomycin	1 1
Kanamycin	
Spectinomycin	0
Trimethoprim +	0
sulfonamides	
Penicillins	
Amoxicillin	0
Amoxicillin/Clavulanic acid	1 0

Table Antimicrobial susceptibility testing of S. Haardt in meat products - Meat from broilers (Gallus gallus) - raw but

intended to be eaten cooked - Monitorii	loos r	éd (Pr	<u> </u>	Aor Aor	ito			dua .	ı İ	ati	ng - quantitative data [Diffusion method]	lata	<u> </u>	£ £	Sio	3 2	net f	jod		2 <b>=</b>	5	<u> </u>	2	2	ກ <u>າ</u>		2	5	ng - quantitative data [Diffusion method]	
Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	and num	ber c	osi jo	lates	with	the c	once	ntrat	d) uo	(lm/l	or zo	ne (m	m) o	inhik	oition	edus	l to													
07	S. Haardt	rdt																												
	Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - Monitoring	70T	br	oile	LS (	Ga	Ilus	ga	Ilus	<u>- (</u>	mea	at pi	odl	rcts	- 15	a≪	but	inte	pu€	ed	to b	e e	ate	n C	90k	ed -	Mo	nito	ring	
Isolates out of a monitoring y programme	yes																													
Number of isolates available in the laboratory																														
Antimicrobials:		u	9		8	6	11	15	13	ÞΙ	12	91	2١	81	61	50	12	22	23	52 54	56	72	82	52	30	31	32	33	32	
Tetracyclines 1	_	-																					_							
Amphenicols	_																							-	_		-	-	-	
Chloramphenicol	0 (	+	+	+	+	+	+	+	+	4	4					$\dagger$	+	+	+	+	-	4	-				+	+	4	
Florfenicol 1	0	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	-	$\dashv$	-	_	_					$\exists$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	-	_	-		_		1	_	_	4
Cephalosporins							-												-									-	•	
Cefotaxim(1)	0					-	-	-	_	_	_								-	-	_	_	_					-	-	
Fluoroquinolones			-				-											-									_	-		
Ciprofloxacin	0 0		+	+	+	+	+	+	+	+	+			Ť		$\dagger$	$\dagger$	+	+	+	+	-	+				+	+	+	_
Enrorioxacin		1	$\exists$	$\exists$	1	$\exists$	-	+	-	-	$\perp$				1		1	$\exists$	+	$\parallel$	-	-	-	4			1	-	4	4
Nalidixic acid	-	_	-		-		-		-		L							-		-			-							L
Trimethoprim	0																									-				
Sulfonamides																					-		-	_	_		_	-	_	
Sulfonamide 1	0			$\exists$		-	_	-	-		_							_	-	-	_		_							
Aminoglycosides																														
Streptomycin	- 0	-				+			-									+	+		-									
Gentamicin	7 C	T	+	+	+	+	+	+	+		_					$\dagger$	+	+	+	+	-	-	-							
Neomycin		T	+	+	+	+	+	+	+	_	_							+	+	+	+	+	+							
Kanamycin	- (	-	+	+	+	+	+	+	+		4					1	1	+	-	+	+	-	4							
Spectinomycin	0 0	1	+	+	+	+	+	+	+	4	4					$\dagger$		+	-	+	-	-	+					-		
Trimethoprim + sulfonamides	0																											-		
Penicillins																								-						
Amoxicillin	0	H	Н	Н		Н	H		Н		Н				П	П	Н	Н	Н		H		-							L
Amoxicillin/Clavulanic acid	0	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	-	4	_				$\exists$	$\exists$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	4	4			-		-		

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# Table Antimicrobial susceptibility testing of S. Haardt - qualitative data

n = Number of resistant is	solates	
II – INGITIDOL OF TOSISIANI IS	S. Haardt	
		at and the second of the land of the land of
	Meat from broilers (Gallus gallus) - mea	at products - raw but intended to be eaten
Isolates out of a	yes	
monitoring programme		
Number of isolates	]1	
available in the		
laboratory		
Antimicrobials:	ĪN .	ln
	11	1
Tetracyclines		<u> </u>
Amphenicols	14	0
Chloramphenicol	1	
Florfenicol	1	0
Cephalosporins	Ta	0
Cefotaxim	1	0
Fluoroquinolones	Ta	0
Ciprofloxacin	1	0
Enrofloxacin	1	0
Flumequin	1	0
Quinolones	٦.	1.
Nalidixic acid	1	1
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides		
Streptomycin	1	1
Gentamicin	1	0
Neomycin	1	1
Kanamycin	1	1
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins		<u> </u>
Amoxicillin	1	0
Amoxicillin/Clavulanic	1	0
acid		
Ampicillin	1	0

Table Antimicrobial susceptibility testing of S. Havana in All feedingstuffs - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (r	Number of resistant isolates (n) and number of isolates with the concentration (ul/m) or zone (mm) of inhibition equal to	
	S. Havana	
	All feedingstuffs - Monitoring	
Isolates out of a monitoring programme	ng yes	
Number of isolates available in the laboratory	tible 2	
-		-
Antimicrobials:	25 33 33 33 33 33 33 33 33 33 3	32
Tetracyclines	2 0 1	
Amphenicols		
Chloramphenicol		
Florfenicol	2 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Cephalosporins		
	2 0 1	2
Fluoroquinolones		
		5
Enrofloxacin(2)		5
Flumequin	1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Quinolones		
Nalidixic acid	-	
Trimethoprim	0 0	
Sulfonamides		
Sulfonamide	2 0	
Aminoglycosides	-	-
Streptomycin	N	
Gentamicin	0	
Neomycin	0	
	-	
Spectinomycin		
Trimethoprim +	0 0	<del>-</del>
Amoxicillin		

Amoxicilin/Ciavulanic acid	Ampicillin 2 0	

(1):36 mm and 42 mm (2): one strain 36 mm (3):38 mm

# Table Antimicrobial susceptibility testing of S. Havana - qualitative data

n = Number of resistant is	solates	
	S. Havana	
	All feedingstuffs - Monitoring	
Isolates out of a	yes	
monitoring programme		
Number of isolates	2	
available in the		
laboratory		
Antimicrobials:	N	n
Tetracyclines	2	0
Amphenicols	1	
Chloramphenicol	2	0
Florfenicol	2	0
Cephalosporins	1	
Cefotaxim	2	0
Fluoroquinolones	-	
Ciprofloxacin	2	0
Enrofloxacin	2	0
Flumequin	1	0
Quinolones	-	
Nalidixic acid	2	0
Trimethoprim	2	0
Sulfonamides		
Sulfonamide	2	0
Aminoglycosides	1	
Streptomycin	2	0
Gentamicin	2	0
Neomycin	2	0
Kanamycin	2	0
Spectinomycin	2	0
Trimethoprim +	2	0
sulfonamides		
Penicillins		
Amoxicillin	2	0
Amoxicillin/Clavulanic acid	2	0
Ampicillin	2	0

Slovenia 2005

Table Antimicrobial susceptibility testing of S. Heidelberg in carcass - Meat from turkey - chilled - quantitative data [Diffusion method]

octologi tantoines to redomila	Minutes of resistant includes of includes with the sensembertion (villan) as included at included to	
ממונים כן בפוז פונים ביים ביים ביים ביים ביים ביים ביים ב	S. Heidelberg	
	Meat from turkey - carcass - chilled	
Isolates out of a monitoring programme	g yes	
Number of isolates available in the laboratory		
Antimicrobiale.	S	
Tetracyclines		
Since de service de la constante de la constan		
Amphenicol Chloramphenicol	1	
Florfenicol	0	
Cephalosporins		
Cefotaxim(2)	1 0	
Fluoroquinolones		
Ciprofloxacin	0	
Enrofloxacin	1 0	
Quinolones		
Nalidixic acid		
Trimethoprim		
Sulfonamides		
Sulfonamide	1 0	
Aminoglycosides		
Streptomycin	1	
Gentamicin	1	
Neomycin	0 0	
Kanamycin	1 1	
Spectinomycin		
Trimethoprim + sulfonamides	0	
Penicillins		
Amoxicillin		
Amoxicillin/Clavulanic acid	0	

(1):37 mm (2):37 mm

# Table Antimicrobial susceptibility testing of S. Heidelberg - qualitative data

n = Number of resistant is	solates	
	S. Heidelberg	
	Meat from turkey - carcass - chilled - Mon	itoring
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
Antimicrobials:	N	ln .
Tetracyclines	1	1
Amphenicols	L	
Chloramphenicol	11	0
Florfenicol	1	0
Cephalosporins	l'	U
Cefotaxim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Enrofloxacin	1	0
Quinolones		
Nalidixic acid	]1	1
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides		
Streptomycin	1	1
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins		
Amoxicillin	1	1
Amoxicillin/Clavulanic acid	1	0
Ampicillin	1	1

# Table Antimicrobial susceptibility testing of S. Indiana - qualitative data

n = Number of resistant is	solates	
	S. Indiana	
	All feedingstuffs - Monitoring	
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
Antimicrobials:	N	Ta
	<b>N</b>  1	<b>n</b> 0
Tetracyclines	1	U
Amphenicols	1.	
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins	7.	
Cefotaxim	1	0
Fluoroquinolones	1.	
Ciprofloxacin	1	0
Enrofloxacin	1	0
Quinolones	_	
Nalidixic acid	1	1
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides	_	
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins		
Amoxicillin	1	0
Amoxicillin/Clavulanic acid	1	0
Ampicillin	1	0

Slovenia 2005

Table Antimicrobial susceptibility testing of S. Indiana in All feedingstuffs - Monitoring - quantitative data [Diffusion method]

Nimbor of society in the solution	Mimbor of posicions isolates (n) and numbor of isolates with the consentration (111/m) or sons (mm) of inhibition causal to
	S. Indiana
	All feedingstuffs - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	B 1
Antimicrobials	Si
Tetracyclines	
Amphenicols	
Chloramphenicol	
Florfenicol	1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Cephalosporins	
Cefotaxim	1 0
Fluoroquinolones	
Ciprofloxacin	1 1
Enrofloxacin	1 0
Quinolones	
Nalidixic acid	
Trimethoprim	
Sulfonamides	
Sulfonamide	1 0
Aminoglycosides	
Streptomycin	1 0 1
Gentamicin	1 0
Neomycin	1 0
Kanamycin	1 0
Spectinomycin	
Trimethoprim +	
sunolialindes	
Penicillins	
Amoxicillin	
Amoxicillin/Clavulanic acid	1 1

Slovenia 2005

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

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	) and numbe	er of is	olates	with t	the co	ncent	ration	m/lrl)	l) or ze	ne (m	m) of	inhibi	tion ec	ual to												
	S. Infantis	isi						;	,																	
	Gallus gallus (fowl)	allus	s (fo		- un	spe	cifie	р	unspecified - at farm - Monitoring	ırm .	- Mc	nito	ring													
Isolates out of a monitoring programme	yes																									
Number of isolates available in the laboratory	2																									
	2			1	0	L	z	2	<u>9</u>	9	2	8	6	L	7	<u>τ</u> ε	9	9		8	0	ı	3	<u>†</u>	2	
Antillicropiais:		•		_	_	ı	ı	_	_	_	L	_	_	7	z	_	<b>−</b>  `	z _	_	_	_	_	_	_	_	
Tetracyclines																	-	-								
Amphenicols						_		-	-	-			-			-				-				-	-	
Chloramphenicol													-		_		-									
Florfenicol	2 0												_			-			_	_						
Cephalosporins									-														-			
Cefotaxim(4)	2 0				_								_							_				-	-	
Fluoroquinolones									-										-							
Ciprofloxacin(1)			1		_				-															_	2	
Enrofloxacin(2)					-				-				-			+				+				_	2	
Flumequin	2 0																					1			1	
Quinolones																										
Nalidixic acid					-								-					-	_							
Trimethoprim	2																			-		_				
Sulfonamides																										
Sulfonamide	2 0														-							_				
Aminoglycosides								-									-						-			
Streptomycin							_			-																
Gentamicin															_											
Neomycin																-			_							
Kanamycin															7											
Spectinomycin					+								-	-										-	-	
Trimethoprim +	2																							-	-	
sulfonamides(3)													_											_		
Penicillins								-	-			-	-			-			-	-					-	
Amoxicillin	2 0							_					_					-	<del>-</del>							

(1) : one strain 38 mm, one 39 mm	(2) : one strain 36 mm	(3): one strain 36 mm	(4): one strain 36 mm

Amoxicillin/Clavulanic acid Ampicillin

# Table Antimicrobial susceptibility testing of S. Infantis - qualitative data

n = Number of resistant is	olates	
	S. Infantis	
	Gallus gallus (fowl) - unspecified - at farm -	Monitoring
Isolates out of a	yes	
monitoring programme		
Number of isolates	2	
available in the		
laboratory		
Antimicrobials:	N	n
Tetracyclines	2	0
Amphenicols		
Chloramphenicol	2	0
Florfenicol	2	0
Cephalosporins		
Cefotaxim	2	0
Fluoroquinolones	1-	
Ciprofloxacin	2	0
Enrofloxacin	2	0
Flumequin	2	0
Quinolones		
Nalidixic acid	2	0
Trimethoprim	2	0
Sulfonamides		
Sulfonamide	2	0
Aminoglycosides		
Streptomycin	2	0
Gentamicin	2	0
Neomycin	2	0
Kanamycin	2	0
Spectinomycin	2	0
Trimethoprim +	2	0
sulfonamides		
Penicillins		
Amoxicillin	2	0
Amoxicillin/Clavulanic	2	0
acid		
Ampicillin	2	0

Table Antimicrobial susceptibility testing of S. Infantis in Meat from pig - carcass - Monitoring - quantitative data [Diffusion method]

Cotologi tuotojoga jo nodamili	Nimber of societate in lease of an under a find the consequent of individual section in the indi	
	S. Infantis	
	Meat from pig - carcass - Monitoring	
Isolates out of a monitoring programme	oring yes	
Number of isolates available in the laboratory	ailable 1	
:		-
Antimicrobials:	232 232 232 232 232 232 232 232 232 232	38 34 33
Tetracyclines	7	
Amphenicols		
Chloramphenicol		
Florfenicol		
Cephalosporins		
Cefotaxim	1 0	1
Fluoroquinolones		
Ciprofloxacin	1 0	
Enrofloxacin	1 0	
Quinolones		
Nalidixic acid	-	
Trimethoprim	7-	
Sulfonamides		
Sulfonamide	1 0	
Aminoglycosides		
Streptomycin	1 0	
Gentamicin	1 0	
Neomycin		
Kanamycin	0 0 1	
Spectinomycin	1 0	
Trimethoprim + sulfonamides	0	-
Penicillins		
Amoxicillin	1 0	
Amoxicillin/Clavulanic acid	1 0 li	

Table Antimicrobial susceptibility testing of S. Infantis in Meat from pig - meat products - Monitoring - quantitative data [Diffusion method]

actologi tactology to rodamiN	foliation for the foliation	Nimbor of encictant inclutes (n) and numbor of inclutes that the concentration (n) (n) and (n) and included to	ot lense activities	
מתווספו כו ופסוסומות וסכומופס	S. Infantis	מנפס שננו נופ כסונכפות מנסון (מנחוז) טו בסופ (חווז) טו חווז	or leading to the control of the con	
	Meat from pig - mea	I - meat products - Monitoring		
Isolates out of a monitoring programme	yes			
Number of isolates available in the laboratory	2			
:	-	99	4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 2
Antimicrobials:		81 21 21 11 01 6	300 500 500 500 500 500 500 500 500 500	39 33 33 31 31
Tetracyclines	2 0		1 1	
Amphenicols				
Chloramphenicol	2 0		1	
Florfenicol	2 0 2		1 1	
Cephalosporins				
Cefotaxim	2 0 2			1 1
Fluoroquinolones				
Ciprofloxacin(1)	2 0			8
Enrofloxacin	2 0 2		1	1
Quinolones				
Nalidixic acid				
Trimethoprim	0		-	
Sulfonamides				
Sulfonamide	2 0		1 1	
Aminoglycosides				
Streptomycin		-		
Gentamicin	2 0		1 1	
Neomycin			1	
Kanamycin			-	
Spectinomycin			2	
Trimethoprim + sulfonamides	0			2
Penicillins		-	-	
Amoxicillin	2 0			
Amoxicillin/Clavulanic acid	2 0		-	

# Table Antimicrobial susceptibility testing of S. Infantis - qualitative data

n = Number of resistant is	solates					
	S. Infa	ntis				
		m pig - carcass -	Meat fro	om pig - meat s	bovines horses,	ed meat (meat from s, pigs, goats, sheep, donkeys, bison and uffalos) - Monitoring
Isolates out of a	yes		yes		yes	,
monitoring programme						
Number of isolates available in the laboratory	1		2		1	
Antimicrobials:	N	n	N	n	N	n
	1	0	2	0	1	0
Tetracyclines	L'					
Amphenicols	11	0	2	0	1	0
Chloramphenicol	1	0	2	0	1	0
Florfenicol	1	U	2	U	1	0
Cephalosporins	]1	0	2	0	1	0
Cefotaxim	<u> </u>	0	Z	U	''	0
Fluoroquinolones Ciprofloxacin	11	0	2	0	1	0
Enrofloxacin	1	0	2	0	1	0
Quinolones	<u> </u>	U		U	'	0
Nalidixic acid	11	0	2	0	1	0
Trimethoprim	1	0	2	0	1	0
Sulfonamides		-				
Sulfonamides	11	0	2	0	1	0
Aminoglycosides	<u> </u>	0		U	<u>'</u>	
Streptomycin	11	0	2	0	1	0
Gentamicin	1	0	2	0	1	0
Neomycin	1	0	2	0	1	0
Kanamycin	1	0	2	0	1	0
Spectinomycin	1	0	2	0	1	0
Trimethoprim +	1	0	2	0	1	0
sulfonamides	Ī		_			
Penicillins						
Amoxicillin	11	0	2	0	1	0
Amoxicillin/Clavulanic	1	0	2	0	1	0
acid		_				
Ampicillin	1	0	2	0	1	0

Table Antimicrobial susceptibility testing of S. Infantis in Meat, red meat (meat from bovines, pigs, goats, sheep,

noises, doincys, bison and water buildos) - milloca meat - mornio mg - quantitative data printsion method.	2	2	2	5		2	<u> </u>		) )	<u> </u>	, מ <u>ו</u>	É	[	<u> </u>	<u>ה</u>	5		ב ב	) >	196	<u> </u>	5	5			3		
Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	(n) and num	ber of	isola	tes w	ith the	oo e	centra	tion (	m/ld)	) or z	one (r	o (mu	f inhi	bition	edna	l to												
	S. Infantis	ntis																										
	Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) minced meat - Monitoring	red d	mes at -	at (n · Mo	nea	t fro	m k	ivo	nes	j, Di	Js, (	goa	ts, a	she	eb,	hor	ses	, dc	nke	ys,	pis	uc Suc	gug	wat	er b	uffa	(sol	
Isolates out of a monitoring programme																												
Number of isolates available in the laboratory																												
Antimicrobials:	z	9 u	7	8	6	10	11	12	13	12	91	2١	81	61	50	12	22 25	54	52	56	72	82	62	30	32	33	34	32
Tetracyclines	0																		_									
Amphenicols																												
Chloramphenicol			-	_				$\dashv$	+	+								-										
Florfenicol	1 0									_							-											
Cephalosporins		-									-						-	-		_				-	_		-	-
Cefotaxim	1 0		_	_					$\dashv$	_								_									_	
Fluoroquinolones																	-	-										
Ciprofloxacin(1)			+	4	Ţ			+	+	+	4				1	+	+	+	_					+			T	_
Enrofloxacin	1 0		_							-								_									_	
Quinolones											-						-							-	_			-
Nalidixic acid										_								-										
Trimethoprim	0	_																				_						
Sulfonamides																												
Sulfonamide	1 0														1													
Aminoglycosides															٠												٠	
Streptomycin	1 0								-	_							-	-						-				
Gentamicin	1 0																-	-						-				
Neomycin	1 0																-	-						-				
Kanamycin			-	_					+	-						-												
Spectinomycin	0		4	4			$\exists$	+	+	+	4		$\Box$		+	-	_	+	_					-	_		T	
Trimethoprim + sulfonamides	-	_																										
Penicillins	-	-													-								-	-	-			
Amoxicillin	1 0																			-								

(1): 38 mm

Amoxicillin/Clavulanic acid Ampicillin

Table Antimicrobial susceptibility testing of S. Kisii in All feedingstuffs - Monitoring - quantitative data [Diffusion method]

octologi tactoison to nodamiN	Mumbor of raciceant includes (a) and number of includes the consentation (ul/ml) or range (as included to
	S. Kisii
	All feedingstuffs - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	
	t
Antimicrobiais:	72
Tetracyclines	
Amphenicols	
Chloramphenicol	1 1
Florfenicol	
Cephalosporins	
Cefotaxim(1)	1 0
Fluoroquinolones	
Ciprofloxacin	1 1
Enrofloxacin	1 0
Quinolones	
Nalidixic acid	-
Trimethoprim	
Sulfonamides	
Sulfonamide	1 0
Aminoglycosides	
Streptomycin	1 0
Gentamicin	1 0
Neomycin	1 0
Kanamycin	1 0
Spectinomycin	1
Trimethoprim +	0
sulfonamides	
Penicillins	
Amoxicillin(2)	0
Amoxicillin/Clavulanic acid	1 0

Ampicillin (1): 36 mm (2): 36 mm

# Table Antimicrobial susceptibility testing of S. Kisii - qualitative data

n = Number of resistant is	solates	
	S. Kisii	
	All feedingstuffs - Monitoring	
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
Authoritani	Tw.	T.
Antimicrobials:	N	n
Tetracyclines	1	0
Amphenicols		
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Enrofloxacin	1	0
Quinolones		
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides		
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins		,
Amoxicillin	]1	0
Amoxicillin/Clavulanic	1	0
acid		
Ampicillin	1	0

Table Antimicrobial susceptibility testing of S. London in Meat from pig - carcass - Monitoring - quantitative data [Diffusion method]

Minister of sections (my ) and section of the secti	, addania bao	401001 90	lainer of	9 44 4		10.14	, ()	100	2,000	1	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	9	10112													
	S. London	l isolat						5					da	,												
	Meat from pig - carcass - Monitoring	pig ر	- cal	rcas	S - N	<b>Joni</b>	torin	g																		
Isolates out of a monitoring programme	yes																									
Number of isolates available in the laboratory	1																									
	_	-		_	-	3	-	-	-	4	-	-	-	-	1	1	-	-	-			_	-	-	9	
Antimicrobials:	u	9	8	6	11	21	E1	GL FL	16	11	8 F	50 18	21	22	53	54	52 52	27	28	56	30	31	33	34	32	
Tetracyclines	0																	-								
Amphenicols																										
Chloramphenicol	1 0																			~						
Florfenicol	1 0																				1					
Cephalosporins																										
Cefotaxim(1)	1 0											_													1	
Fluoroquinolones								-																		
Ciprofloxacin	1 0							-					_											-		
Enrofloxacin	1 0																						-			
Quinolones																٠										
Nalidixic acid	1 0																-									
Trimethoprim	0																			-						
Sulfonamides		, , ,														,						1				
Sulfonamide	1 0												-													
Aminoglycosides																										
Streptomycin	1 0								-																	
Gentamicin	1 0							_				_	_			_	_									
Neomycin	1 0				_										_			_								
Kanamycin	1 0														_			_								
Spectinomycin	1 0													-												
Trimethoprim + sulfonamides	0																									
Penicillins					-			1	-				-					-					-			
Amoxicillin	1 0																	-								
Amoxicillin/Clavulanic acid	1 0																				Ì	-				

# Table Antimicrobial susceptibility testing of S. London - qualitative data

n = Number of resistant is	solates	
	S. London	
	Meat from pig - carcass - Monitoring	
Isolates out of a	yes	
monitoring programme	4	
Number of isolates	1	
available in the		
laboratory		
Antimicrobials:	IN .	I
	<b>N</b>	<b>n</b> 0
Tetracyclines	I	U
Amphenicols	1.	
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins	,	
Cefotaxim	1	0
Fluoroquinolones	1	
Ciprofloxacin	1	0
Enrofloxacin	1	0
Quinolones		
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides		
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins	I.	
Amoxicillin	1	0
Amoxicillin/Clavulanic	1	0
acid		
Ampicillin	1	0

# Table Antimicrobial susceptibility testing of S. Mbandaka - qualitative data

n = Number of resistant is	solates	
	S. Mbandaka	
	Gallus gallus (fowl) - unspecified - day	y-old chicks - at farm - Monitoring
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
	1	
Antimicrobials:	N .	n
Tetracyclines	1	0
Amphenicols		
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Fluoroquinolones	٦.	le.
Ciprofloxacin	1	0
Enrofloxacin	1	0
Quinolones	٦.	
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides	-	
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins		
Amoxicillin	1	0
Amoxicillin/Clavulanic acid	1	0
Ampicillin	1	0

Table Antimicrobial susceptibility testing of S. Mbandaka in unspecified - Gallus gallus (fowl) - day-old chicks - at farm - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) a	Number of resistant isolates (n) and number of isolates with the concentration (μl/ml) or zone (mm) of inhibition equal to
S	S. Mbandaka
9	Gallus gallus (fowl) - unspecified - day-old chicks - at farm - Monitoring
Isolates out of a monitoring yes programme	
Number of isolates available in the laboratory	
•	
Antimicrobials: N	36 36 37 38 38 39 30 30 30 30 30 30 30 30 30 30
Tetracyclines 1	
Amphenicols	
Chloramphenicol 1	
Florfenicol 1	
Cephalosporins	
Cefotaxim 1	0
Fluoroquinolones	
Ciprofloxacin(1)	0
Enrofloxacin 1	0
Quinolones	
Nalidixic acid	
Trimethoprim 1	
Sulfonamides	
Sulfonamide 1	0
Aminoglycosides	
Streptomycin 1	0
Gentamicin 1	0
Neomycin 1	
Kanamycin 1	7
Spectinomycin 1	-
Trimethoprim + sulfonamides	7
Penicillins	
Amoxicillin 1	0
Amoxicillin/Clavulanic acid	

Table Antimicrobial susceptibility testing of S. Mbandaka in All feedingstuffs - Monitoring - quantitative data [Diffusion method]

Cotologi tactoicos to sodamiN	Mindent for fortent for the fortest of fortest the construction (11/ml) as a fabribilities to socious fortest
	S. Mbandaka
	All feedingstuffs - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	
	t
Antimicropiais:	S
Tetracyclines	
Amphenicols	
Chloramphenicol	1 1
Florfenicol	1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Cephalosporins	
Cefotaxim(3)	1 0
Fluoroquinolones	
Ciprofloxacin(1)	1 1
Enrofloxacin(2)	
Quinolones	
Nalidixic acid	
Trimethoprim	0
Sulfonamides	
Sulfonamide	1 1
Aminoglycosides	
Streptomycin	1 0
Gentamicin	1 0
Neomycin	1 0
Kanamycin	0
Spectinomycin	
Trimethoprim + sulfonamides	0
Penicillins	
A movinilia	
Alloxiciiii	
Amoxicillin/Clavulanic acid	

(1):36 mm (2):36 mm (3):36 mm

# Table Antimicrobial susceptibility testing of S. Mbandaka - qualitative data

n = Number of resistant is	solates	
	S. Mbandaka	
	All feedingstuffs - Monitoring	
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
		1
Antimicrobials:	N	n
Tetracyclines	1	0
Amphenicols		
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins		
3rd generation	1	0
cephalosporins		
Cefotaxim	1	0
Fluoroquinolones	1	
Ciprofloxacin	1	0
Enrofloxacin	1	0
Quinolones	1	
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides		
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins		,
Amoxicillin	1	0
Amoxicillin/Clavulanic	1	0
acid		
Ampicillin	1	0

# Table Antimicrobial susceptibility testing of S. Meleagridis - qualitative data

n = Number of resistant is	solates	
	S. Meleagridis	
	Gallus gallus (fowl) - unspecified - at farm	- Monitoring
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
Authoritan	The	T.,
Antimicrobials:	<b>N</b>     1	n O
Tetracyclines	1	0
Amphenicols	1.	
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins	14	
Cefotaxim	1	0
Fluoroquinolones	1.	
Ciprofloxacin	1	0
Enrofloxacin	1	0
Flumequin	1	0
Quinolones	14	
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides	1	
Sulfonamide	1	0
Aminoglycosides	٦.	
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins		
Amoxicillin	1	0
Amoxicillin/Clavulanic acid	1	0
Ampicillin	1	0

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

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	and num	ber	of isc	lates	with	ı the	conc	entrat	ion (L	l/m/j	or zo	ne (m	lm (mı	Finhik	oition	edus	al to													
	S. Meleagridis	ea(	Jrid	<u>.s</u>						Ì																				
	Gallus gallus (fowl) -	ga	Ilus	; (fc	(Iwc		ınsp	eci	fied	- a	ıt fa	unspecified - at farm - Monitoring	Ĭ.	onit	orin	g														
Isolates out of a monitoring programme	yes																													
Number of isolates available in the laboratory	1																													
									1		ľ																			
Antimicrobials:	_	u	9		8	6	01	11	13	14	S۱	91	۲۱	81	61	50	51	72	53	52 54	56	72	82	58	30	31	32	33	34	32
Tetracyclines	1																			-										
Amphenicols																														
Chloramphenicol	1																			-										
Florfenicol	1 0								_													-	_							
Cephalosporins																														-
Cefotaxim(3)	1 0								_																				Ì	1
Fluoroquinolones																														-
Ciprofloxacin(1)							1		_	4	_							1	1	-	-	4	_						Ì	_
Enrofloxacin(2)	1								-																				Ì	_
Flumequin	1 0																											_		
Quinolones																														
Nalidixic acid							7		-	-	_							+	-	_	-	_								
Trimethoprim	0																						-							
Sulfonamides																												-		
Sulfonamide	1 0								_												-									
Aminoglycosides									-												-	-	-	-						-
Streptomycin									-	-	-							1	1		-	-								
Gentamicin									-	-	4							1	-		-	-								
Neomycin																		-												
Kanamycin																-														
Spectinomycin				$\dashv$	7				+	4	4	_	Ţ		7	$\dashv$	-	+	+	-	-	4								
Trimethoprim + sulfonamides	0 0																										-			
Penicillins																														
Amoxicillin	0						H		H	_	_					Г			_	-	-	_	L		L	L			Г	
		1	1		1		1							1	1		1	1	1	1							ĺ		ĺ	1

Amoxicillin/Clavulanic acid
Amptcillin
(1): 36 mm
(2): 36 mm
(3): 36 mm

Table Antimicrobial susceptibility testing of S. Newport in Snakes - at zoo - Surveillance - quantitative data [Diffusion method]

Number of resistant isolates (n)	Number of resistant isolates (n) and number of isolates with the concentration (μl/ml) or zone (mm) of inhibition equal to
	S. Newport
00	Snakes - at zoo - Surveillance
Isolates out of a monitoring Programme	no
Number of isolates available in the laboratory	
Antimicrobials:	
Tetracyclines	-
Amphenicols	
Chloramphenicol 1	
Florfenicol	
Cephalosporins	
Cefotaxim(3)	0
Fluoroquinolones	
(1)	
Enrofloxacin 1	0
Flumequin 1	
Quinolones	
Nalidixic acid	-
Trimethoprim(2)	
Sulfonamides	
Sulfonamide 1	0
Aminoglycosides	
Streptomycin 1	0
Gentamicin 1	0
Neomycin 1	
Kanamycin 1	
Spectinomycin 1	7-
Trimethoprim +	-
Penicillins	
Amoxicillin	

Amoxicillin/Clavulanic acid
Ampicillin
(1): 40 mm
(2): 38 mm
(3): 37 mm

# Table Antimicrobial susceptibility testing of S. Newport - qualitative data

n = Number of resistant is	solates	
	S. Newport	
	Snakes - at zoo - Surveillance	
Isolates out of a	no	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
Antimicrobials:	N	n
Tetracyclines	1	0
Amphenicols	1.	
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins	٦.	
Cefotaxim	1	0
Fluoroquinolones	1.	
Ciprofloxacin	1	0
Enrofloxacin	1	0
Flumequin	1	0
Quinolones	٦.	
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides	1	
Sulfonamide	1	0
Aminoglycosides	1.	
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins		
Amoxicillin	1	0
Amoxicillin/Clavulanic acid	1	0
Ampicillin	1	0

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

S. Saintpaul   Furkeys - unspecified - at farm - environmental sample - Monitoring   Yes   Turkeys - unspecified - at farm - environmental sample - Monitoring   Yes   Turkeys - unspecified - at farm - environmental sample - Monitoring   Yes   Y	S. Saintpaul   Turkeys - unspecified - at farm - environmental sample - Monitoring   Yes   Turkeys - unspecified - at farm - environmental sample - Monitoring   Yes   Turkeys - unspecified - at farm - environmental sample - Monitoring   Yes   Y																																
Turkeys - unspecified - at farm - environmental sample - Monitoring   1665	Turkeys - unspecified - at farm - environmental sample - Monitoring   yes		S. Sa	intp	Jau	_																											
7	Signature   Sign		Turke	sys	ı.	nsp	eci	fied	- a	t fa	LI.	- en	virc	วทท	len	tals	am	ble	-	lon	itor	ing											
100	Althres available   2   2   0   11   12   13   14   15   15   15   15   15   15   15	Isolates out of a monitoring programme																															
1988   1988	10   10   10   10   10   10   10   10	Number of isolates availab in the laboratory																															
18   18   18   18   18   18   18   18	1   1   1   1   1   1   1   1   1   1		2	_		_		_	O		_		-		-	-		o	ı	z	ε	t	9	9	2	8	_	_		_			
18	Number acide 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Antimicrobials:	z	u	9	_	8	6	1(	_	_		$\dashv$		-1	$\exists$		50	5	53	53	77	56	56	22	32		-	7				
89	1   2   0     1   1   1   1   1   1   1   1	Amphenicols																															
69	Sample   S	Chloramphenicol	2	0									-			_							7								-		
865  2 0 0  2 0 0  3 2 0  4 0 0  5 0 0  6 0	1   1   1   1   1   1   1   1   1   1	Florfenicol	2	0																				_									
2   0   0   0   0   0   0   0   0   0	1   1   1   1   1   1   1   1   1   1	Cephalosporins				,										,											٠						
2 0 0	10   2   2   0	Cefotaxim(3)	2	0																												2	
2 2 0 0 0 0 2 5 5 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	des    2   0     2   0	Fluoroquinolones														,											٠						
2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	des	Ciprofloxacin(1)	2	0									-	-	-	_															_	7	
BS	des.  2 0 0   2   2   2   2   4   4   4   4   4   4	Enrofloxacin(2)	2	0																												2	
88	des	Quinolones																															
2 2 2 2 2 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4	des.  2 2 2 2  2 2 2 2  2 2 2 2  4 4 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nalidixic acid	2	0																				2									
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	des.  2 2 2 2  4 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Trimethoprim	2	0																											-	-	
Sample   S	des.  2 2 2 2  4 2 2 2  4 4 4 4 4 4 4 4 4 4	Sulfonamides																															
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2   2   2   2   2   2   2   2   2   2	Sulfonamide	2	7	7																												
2	2   2   2   2   2   2   2   2   2   2	Aminoglycosides																															
2	+	Streptomycin	2	7	7																												
1	+	Gentamicin	2	0																				_									
1	+ 2 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Neomycin	2	0																	_	-											
1	+	Kanamycin	2	0												_						_	-								-		
1   1   2   0     1   1   1   2     1   1   1   2     1   1	+         2         0           4         2         0           vulanic acid         2         0           2         0         1           1         1         1	Spectinomycin	2	7	7			Ţ			$\dashv$	1	$\dashv$	$\dashv$	$\dashv$	$\dashv$	4	_		_													_
Clavulanic acid 2 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2         0           vulanic acid         2         0           2         0	Trimethoprim + sulfonamides	8	0																										~			
//Clavulanic acid 2 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2         0           vulanic acid         2         0           2         0	Penicillins																															
VClavulanic acid 2 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	vulanic acid         2         0         1         2 <t< td=""><td>Amoxicillin</td><td>5</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td>-</td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td></t<>	Amoxicillin	5	0									-		-	_										_					-		
2 0	2 0 1	Amoxicillin/Clavulanic acid	2	0																							7	21			-		
		Ampicillin	2	0																						_							

(1): one strain 38 mm, one 40 mm (2): one strain 36, one 38 mm (3): both strains 38 mm

# Table Antimicrobial susceptibility testing of S. Saintpaul - qualitative data

n = Number of resistant is	solates	
	S. Saintpaul	
	Turkeys - at farm - environmental sample -	Monitoring
		Monitoring
Isolates out of a	yes	
monitoring programme		
Number of isolates	2	
available in the		
laboratory		
Antimicrobials:	N .	ln .
	2	2
Tetracyclines		_
Amphenicols	12	0
Chloramphenicol	2 2	-
Florfenicol	2	0
Cephalosporins	]2	0
Cefotaxim	2	U
Fluoroquinolones	2	0
Ciprofloxacin	2	0
Enrofloxacin	2	U
Quinolones	2	0
Nalidixic acid	2	0
Trimethoprim	2	U
Sulfonamides	1-	
Sulfonamide	2	2
Aminoglycosides	10	
Streptomycin	2	2
Gentamicin	2	0
Neomycin	2	0
Kanamycin	2	0
Spectinomycin	2	2
Trimethoprim +	2	0
sulfonamides		
Penicillins		
Amoxicillin	2	0
Amoxicillin/Clavulanic acid	2	0
Ampicillin	2	0

Table Antimicrobial susceptibility testing of S. Saintpaul in Meat from turkey - mechanically separated meat (MSM) - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (μl/ml) or zone (mm) of inhibition equal to	n) and nu	nmbe	r of is	solat	es wi	th the	con	centr	ation	(µ/m)	l) or ;	zone	(mm)	of in	hibitic	on eq	ual to														
	S. Saintpaul	iint	Dau	_																											
	Meat from turkey - mechanically separated meat (MSM) - Monitoring	fro	m t	urķ	ey.	- Ľ	hoe	ani	call	y se	pal	rate	n b	леа	t (N	ISN	- (	Moi	nito	ring											
Isolates out of a monitoring programme	yes																														
Number of isolates available in the laboratory	_																														
					].			ľ	•	-	•	ŀ	ŀ	ŀ	ŀ					-	-	ŀ	-	ŀ	ŀ	•	ŀ				
Antimicrobials:	z	u	9	7	8	6	10	ıı	12	13	91 71	91	4۱ 9۱	118	16	50	12	22	23	54	52	97	72	82	30	31	35	33	34	32	
Tetracyclines	_	-	-																												
Amphenicols																															
Chloramphenicol	-	0											-	-												-					
Florfenicol	1	0													1																
Cephalosporins																															
Cefotaxim	1	0																					_			_	_			-	
Fluoroquinolones																										-		-			
Ciprofloxacin	_	0										+		_	_											-	-				
Enrofloxacin	_	0										-		-										-		-	-				
Flumequin	1	0																				-									
Quinolones																															
Nalidixic acid	_	0									$\dashv$	-	-	_		_						7									
Trimethoprim	<del>-</del>	0																			-	_									
Sulfonamides		,										,													,						
Sulfonamide	1	1	1																												
Aminoglycosides																								-	-			-		-	
Streptomycin	_	-	-																												
Gentamicin	-	0								+		+		-		_				•											
Neomycin	-	0																-													
Kanamycin	_	0								7	$\dashv$	1	-	+	4	_			-		$\exists$	7									
Spectinomycin	_	-	-						$\dashv$	+		+		+																	
Trimethoprim + sulfonamides	<del>-</del>	0																		•	<del>-</del>										
Penicillins																															
Amoxicillin	-	0								$\exists$	$\dashv$			$\dashv$	$\Box$	Ц	-				П	$\exists$									

Amoxicillin/Clavulanic acid
Ampicillin

# Table Antimicrobial susceptibility testing of S. Saintpaul - qualitative data

n = Number of resistant is	volotos			
ri = inumber of resistant is				
	S. Saintpaul			
	Meat from turkey - m meat (MSM) - Monito	echanically separated ring	Meat from pig - offal	- Monitoring
Isolates out of a	yes		yes	
monitoring programme				
Number of isolates	1		1	
available in the				
laboratory				
Antimicrobials:	N	n	N	n
Tetracyclines	1	1	1	1
Amphenicols				
Chloramphenicol	1	0	1	0
Florfenicol	1	0	1	0
Cephalosporins				
Cefotaxim	1	0	1	0
Fluoroquinolones				
Ciprofloxacin	1	0	1	0
Enrofloxacin	1	0	1	0
Flumequin(1)	1	0		
Quinolones				
Nalidixic acid	1	0	1	0
Trimethoprim	1	0	1	0
Sulfonamides	•	'		'
Sulfonamide	1	1	1	1
Aminoglycosides				
Streptomycin	1	1	1	1
Gentamicin	1	0	1	0
Neomycin	1	0	1	0
Kanamycin	1	0	1	0
Spectinomycin	1	1	1	1
Trimethoprim +	1	0	1	0
sulfonamides				
Penicillins				
Amoxicillin	1	0	1	0
Amoxicillin/Clavulanic	1	0	1	0
acid				
Ampicillin	1	0	1	0

<sup>(1):</sup> Strain from pig offal not tested

Table Antimicrobial susceptibility testing of S. Saintpaul in Meat from pig - offal - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	(n) and r	qunc	er of is	solate	es with	h the	conce	ntrati	ılıı) no	/ml) o	r zone	e (mm	of in	hibitic	n edi	ual to													
	S. Saintpaul	aint	pau	_					;																				
	Meat from pig - offal	t fro	m F	oig -	- off	- 1	Mo	Monitoring	ing																				
Isolates out of a monitoring programme	yes																												
Number of isolates available in the laboratory	<b>a</b>																												
Antimicrobials:	z	u	9	7	8	6	11	12	13	ÞΙ	٩٤	91	۲۱ 8۱	61	50	12	22	53	52 54	56	72	82	67	30	32	33	34	32	1
Tetracyclines	1	1	1																										
Amphenicols																													
Chloramphenicol	-	0																	-										
Florfenicol	1	0																	1										
Cephalosporins																								-					
Cefotaxim(3)	1	0																										1	
Fluoroquinolones																													
Ciprofloxacin(1)	-	0							_				-							_				_				_	
Enrofloxacin(2)	1	0																										1	
Quinolones																													
Nalidixic acid	-	0					1	-												-									
Trimethoprim	<del>-</del>	0																								-			
Sulfonamides																		1											
Sulfonamide	-	-	-										_																
Aminoglycosides																													
Streptomycin	_	-	-																										
Gentamicin	_	0																		-									
Neomycin	_	0															Ì	_											
Kanamycin	_	0																-											
Spectinomycin	-	-	-					-	_																				
Trimethoprim + sulfonamides	<del>-</del>	0																						-					
Penicillins		-							-		_	-	-	_	_					-				-	_				
Amoxicillin	_	0																				-		_				-	
Amoxicillin/Clavulanic acid	_	0																						-					

(1): 38 mm (2): 36 mm (3): 38 mm

Table Antimicrobial susceptibility testing of S. Sandiego in Turkeys - unspecified - at farm - animal sample - faeces -Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	) and numbe	er of	isola	tes w	ith th	le cor	centr	ation	m/lm)	II) or 2	one (	mm)	of inh	ibition	n edu	al to													
	S. Sandiego	ieg	0																										
	Turkeys - unspecified	<u> </u>	ınsk	oec	ifie	- 1	at fa	ırm	- ar	at farm - animal sample - faeces - Monitoring	કેટ દિ	amp	- əlc	fae	ces	2	loni	tori	ng										
Isolates out of a monitoring programme	yes																												
Number of isolates available in the laboratory	1																												
Antimicropiale:		9		8	6	0	ı	7	<u>ε</u>	<u>9</u>	9		8	6	0	L	7.	83	\$3 \$4	9		8:	6	0:	L	7:	£:	9:	
Amphonicole			-			L	ı	1	1	1	1	1	1	L	1	1	1	1	1	1	z	z	z	ε	1	1	1	1	
Chloramphenicol	0	_	-	-	L					-							Н	_	H	-	L	L					H	-	
Florfenicol	0																	-											
Cephalosporins																													
Cefotaxim(1)	0																										_	-	
Fluoroquinolones																													
Ciprofloxacin	0																										-	-	
Enrofloxacin	0																											-	
Quinolones																													
Nalidixic acid	0															_													
Trimethoprim	0																								_				
Sulfonamides	-																-	-	-	-	-				-	-	-	-	
Sulfonamide	-	9	_										_				_												
Aminoglycosides																													
Streptomycin	0	9																											
Gentamicin	0																	-										_	
Neomycin	0															-													
Kanamycin	0															-													
Spectinomycin		9	_	_	_					+							+		+	_						1	+	_	
Trimethoprim + sulfonamides	<del>-</del>	9																											
Penicillins																													
Amoxicillin	0																										-		
Amoxicillin/Clavulanic acid	0																	-				-					-		
Ampicillin	0		_	_							_						_			-							_		
Tetracyclines																													

Table Antimicrobial susceptibility testing of S. Sandiego in Turkeys - unspecified - at farm - environmental sample - Monitoring - quantitative data [Diffusion method]

	Pu0 (u)	3	30	100	. 004	14 441	9	000	0.40	,,,,,,,,,	1	9	, ,	190 10	4142	9 20 17	3	,													
Number of resistant isolates (ii) and number of isolates with the	(III) alliu			201	ares v		20 al	le le	ומונ		concentration (primit) of zone (min) of minibuon equal to	107		5			edna	2													
	S. Sandiego	and	diec	Q																											
	Turkeys - unspecified	(e)	) - S	sur	bec	ifie	- 1	at farm -	arm	9 - l	environmental sample - Monitoring	ron	me	ntal	sa	mpl	e -	Mo	nitc	orin	3										
Isolates out of a monitoring programme	yes																														
Number of isolates available in the laboratory	N N																														
		•											-	-		-				-									•		
Antimicrobials:	z	u	9 u	7	8	6	10	и	15	13	ÞΙ	S١	91	۷١	81	61	20	55 51	53	54	52	56	72	82	53	30	31	32	33	34	32
Amphenicols																															
Chloramphenicol	2	0																	-	-	-										
Florfenicol	2	0																		1	1										
Cephalosporins																															
Cefotaxim(3)	2	0		_															_											2	
Fluoroquinolones																													-		
Ciprofloxacin(1)	7	0	-		_														-	-										7	
Enrofloxacin(2)	2	0																												N	2
Flumequin	1	0																	_										Ì	_	
Quinolones																															
Nalidixic acid	7	0		-	-	-	_									+	+	+	-	-											
Trimethoprim	7	-	-																										_		
Sulfonamides																															
Sulfonamide	2	2	2	_	_		_									_															
Aminoglycosides			-																	-	-									-	-
Streptomycin	2	7	7	-											+		+														
Gentamicin	7	<b>o</b>	+	-	4	_		4							+		+		-	-			-								
Neomycin	2	0	+	+	4	-	_	_						1	1	+	+	1	-	-											
Kanamycin	2	0	+	+	4	4	4	4					1	1	1	+	+	-	+		-										
Spectinomycin	5	7	7	-			_	_							+	+	+		+												
Trimethoprim + sulfonamides	8	0																					-			-					
Penicillins																															
Amoxicillin	2	0		-	_											-			-			-	-								
Amoxicillin/Clavulanic acid	2	0		-	_											-			-					-		-					
Ampicillin	2	0		H	H	Н											=	H	H					-	-						

(1): one strain 37 mm, one 40 mm (2): one strain 37 mm (3): one strain 38 mm, one 40 mm

# Table Antimicrobial susceptibility testing of S. Sandiego - qualitative data

n = Number of resistant is	solates			
	S. Sandieg	0		
			s - Turkeys - at Monitoring	t farm - environmental sample -
Isolates out of a	yes		yes	
monitoring programme				
Number of isolates	1		2	
available in the				
laboratory				
Antimicrobials:	N	ln	N	n
Tetracyclines	1	1	2	2
Amphenicols		I		I
Chloramphenicol	1	0	2	0
Florfenicol	1	0	2	0
Cephalosporins			I	<u> </u>
Cefotaxim	1	0	2	0
Fluoroquinolones	_	'		'
Ciprofloxacin	1	0	2	0
Enrofloxacin	1	0	2	0
Flumequin			1	0
Quinolones			,	
Nalidixic acid	1	0	2	0
Trimethoprim	1	0	2	1
Sulfonamides		- I		
Sulfonamide	1	1	2	2
Aminoglycosides			,	
Streptomycin	1	1	2	1
Gentamicin	1	0	2	0
Neomycin	1	0	2	0
Kanamycin	1	0	2	0
Spectinomycin	1	1	2	2
Trimethoprim +	1	1	2	0
sulfonamides				
Penicillins	1		1	'
Amoxicillin	1	0	2	0
Amoxicillin/Clavulanic acid	1	0	2	0
Ampicillin	1	0	2	0

		er of	solate	s with	the c	conce	ntratic	ı/lrl) uc	m) o	zone	Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	of inh	ibitio	n edu	ol le												
S	S. Senftenberg	tenk	erg																								
9	Gallus gallus (fowl)	Jall	ıs (f	OWI)	- un	nsp	ecifi	ed -	ati	farn	ıspecified - at farm - animal	nim	als	amp	- əlc	org	Jan/	tissı	<u>- ər</u>	S	nica	sample - organ/tissue - Clinical investigations	est	gat	ions	,	
Isolates out of a monitoring PO programme																											
Number of isolates available in the laboratory																											
Antimicrobials: N	u	9	7	8	6	11	12	13	٦١	91	91 21	81	6١	20	21	22	24	52	97	72	28	30	31	32	33	34	32
Amphenicols																											
Chloramphenicol 1	0										-								-								
Florfenicol 1	0																		-								
Cephalosporins																											
Cefotaxim(3)	0											_														1	
səı																											
	0				+		4		7	1	-	_	4			-	4				+	-	4	_		-	
Enrofloxacin(2)	0	-			$\dashv$	$\dashv$	-		$\exists$			-				-					$\dashv$					_	
Nalidixic acid	0 (	-			+	+	-		+	+	-	-	1		1	-					+	-	_	_			
Trimethoprim	0																					-					
Sulfonamides																											
Sulfonamide 1	0	_				-	_					_				-					$\exists$	-	_				
Aminoglycosides	_	-				-						-				-	-						-				-
Streptomycin 1	- 0				-					+																	
C	o (	-			+	+	-		1	+	-	-	1		1	+	-	-			+	+	-	_			П
	0	4				+	1					_	1		1	-	-				+	1	_	1		1	
	0					-									1	-											
Spectinomycin 1	0					+					-	_			1	-	_						_				
Trimethoprim + sulfonamides	0																							-			
Penicillins	,																										
Amoxicillin 1	0											_				-							_				
Amoxicillin/Clavulanic acid 1	0											_										-					
Ampioillip	(																										

(1):40 mm (2):38 mm (3):40 mm

# Table Antimicrobial susceptibility testing of S. Senftenberg - qualitative data

n = Number of resistant is	solates			
	S. Senftenk	perg		
	Gallus gallus	(fowl) - unspecified e - organ/tissue - Cl		is (fowl) - unspecified - at farm nple - faeces
Isolates out of a	no		no	
monitoring programme				
Number of isolates available in the	1		1	
laboratory				
Antimicrobials:	l N	n	N	n
Tetracyclines	1	0	1	0
Amphenicols			<u> </u>	I .
Chloramphenicol	1	0	1	0
Florfenicol	1	0	1	0
Cephalosporins				<u> </u>
Cefotaxim	1	0	1	0
Fluoroquinolones	•	·	'	·
Ciprofloxacin	1	0	1	0
Enrofloxacin	1	0	1	0
Flumequin			1	0
Quinolones	•	·	,	·
Nalidixic acid	1	0	1	0
Trimethoprim	1	0	1	0
Sulfonamides		<u> </u>		'
Sulfonamide	1	0	1	0
Aminoglycosides	•		'	
Streptomycin	1	1	1	0
Gentamicin	1	0	1	0
Neomycin	1	0	1	0
Kanamycin	1	0	1	0
Spectinomycin	1	0	1	0
Trimethoprim +	1	0	1	0
sulfonamides				
Penicillins	1		,	'
Amoxicillin	1	0	1	0
Amoxicillin/Clavulanic acid	1	0	1	0
Ampicillin	1	0	1	0

l able Antimicrobial susceptibility testing of S. Senftenberg in Gallus gallus (fowl) - unspecified - at farm - animal sample - faeces - Clinical investigations - quantitative data [Diffusion method]	ll susc llinica	ept Lin	ibili vest	ity t iigat	esti	ing IS -	of ક qua	S. S. Intit	enft ativ	enk re d	erg ata	n [D]	Gal fus	lus ion	gal me	lus tho	( <del>1</del> 0	· (Iv	nn .	sbe	citi	eq	· at	farn	ו - a	nim	<u>la</u>	
Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	וח and חוו	nber	of isol	ates v	with th	ne cor	centr	ation	m/lrl)	I) or z	one (r	nm) a	f inhi	bition	edua	l to												
	S. Ser	Jfte	Senftenberg	ō																								
	Gallus gallus (fowl)	; ga	SnII	(fo	٠(ا٧		unspecified -	Sifie	- p	at fa	ırm	- ar	imic	S  E	at farm - animal sample - faeces -	<u>e</u> -	fae	ces		linic	<u>اا</u>	nve	Clinical investigations	atio	SL			
Isolates out of a monitoring programme	ou																											
Number of isolates available in the laboratory	1																											
Antimicrobials:	z	u	9	8	6	10	11	12	13	91 71	91	۲۱	81	6١	50	55 51	53	54	52	97	72	28	30 30	31	32	33	32 34	
Amphenicols																												
Chloramphenicol	-	0	$\dashv$	$\dashv$						$\dashv$							-	4				$\dashv$						
Florfenicol	_	0	-	-				$\exists$		-							-		-									
Cephalosporins				-							-													-		-	-	
Cefotaxim		o															-									_		
Fluoroquinolones		-																									-	
Ciprofloxacin(1)			$\dagger$	+	+	1		$\dagger$	+	+	+	1		Ţ	$\dagger$	+	+	+	1		$\dagger$	$\dagger$	+	+		+	+	_
Enrofloxacin					-				+		-	1				+	+	+			+	+		-	-	+		
Flumequin				-						-	_					-	-							-		1	_	4
Quinolones	-	0	-	-	_					-	-					-	-	-					-	_			_	_
Trimethonrim	_	0																			-							
Sulfonamides																								_			-	1
Sulfonamide	_	0	-	-	-			Т		-	-	_				-	-	L			Т		-	H			-	_
Aminoglycosides																												
Streptomycin	_	0	-					_																_				
Gentamicin	_	0	7	+	_					+	_	_					-	_	-				1					
Neomycin	_	0			-						_				+	-												
Kanamycin	_	0	+			_			+							-  -	+	4				+	1			+		
Spectinomycin	_	0 (	+	+	1	_		$\dagger$	+	+	-	_				-	+	4				+	1	4		+		
Trimethoprim + sulfonamides	_	 																							-			
Penicillins			-	-		-		_		-	-				-		-	-			-	-		-		-	-	
Amoxicillin	_	0	Н	-				Т	-	-					Т	-	H	H	-		Г		-	_		Н	-	H
Amoxicillin/Clavulanic acid	-	0	H					П							Н		H				-	_		H				
Ampicillin		0	$\dashv$	-	4	_		$\neg$	-	-	_	_			$\dashv$	$\dashv$	-	-				$\exists$	-	-			-	

Table Antimicrobial susceptibility testing of S. Senftenberg in Meat from pig - meat products - Monitoring - quantitative data [Diffusion method]

Mumbor of societant isolatos (n) and numbor of isolatos with the concentration (11/ml) as and constitution social to	dana bac (a	1 0 10	040100	dim o	4000	000	tratio	1/11/4	10 (10	) 0000	, (a.a.,	idai ta	d citic	2	5												
	S. Senftenberg	tenb	erg	2										3	2												
	Meat from pig - meat	Jm p	jig -	me	at p	t products - Monitoring	acts	Δ-	onit	orin	g																
Isolates out of a monitoring programme																											
Number of isolates available in the laboratory	_																										
	2	-	_	-	-	-	-	<u>ε</u>	-	-	_	8	6	-	-	-	t	9	9	-	-	-	ı	Z	-	-	
Antimicrobiais:	, ,	9	<u>,</u>	8	6	L L	ı	:L	ı	i L	۱.	L	L	7		2	7	7	7	z	7	3	3	3:	3:	3	
Tetracyclines																	-										
Amphenicols																											
Chloramphenicol	0															_	-										
Florfenicol	1 0																		_	1							
Cephalosporins																											
Cefotaxim(3)	1 0											1															
Fluoroquinolones																											
Ciprofloxacin(1)	1 0															-										-	
Enrofloxacin(2)	1 1									1																	
Quinolones																			٠								
Nalidixic acid	0				1	-										-											
Trimethoprim	0																				-						
Sulfonamides																			1								
Sulfonamide	1 0															-											
Aminoglycosides																											
Streptomycin	1								_							_											
Gentamicin	1 0				_	_										-					_						
Neomycin	1 0														-												
Kanamycin	1 0				_	_										-											
Spectinomycin	1 0														-												
Trimethoprim + sulfonamides	0																					-					
Penicillins		-				-			-	-	_	-	-	-	-	-	_		-		-				-	-	
Amoxicillin	1																		_	_							
Amoxicillin/Clavulanic acid	1															-				_							

(1):37 mm (2):36 mm (3):36 mm

# Table Antimicrobial susceptibility testing of S. Senftenberg - qualitative data

n = Number of resistant is	solates	
	S. Senftenberg	
	Meat from pig - meat products - Monitoring	3
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
Additional	Ta.	[-
Antimicrobials:	<b>N</b>	n
Tetracyclines	1	0
Amphenicols		
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Enrofloxacin	1	1
Quinolones		
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides		
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins	1	,
Amoxicillin	1	0
Amoxicillin/Clavulanic	1	0
acid		
Ampicillin	1	0

# Table Antimicrobial susceptibility testing of S. Senftenberg - qualitative data

n = Number of resistant is	olates	
	S. Senftenberg	
	All feedingstuffs - Monitoring	
Isolates out of a	yes	
monitoring programme		
Number of isolates	2	
available in the		
laboratory		
	I.	
Antimicrobials:	N	n
Tetracyclines	2	0
Amphenicols		
Chloramphenicol	2	0
Florfenicol	2	0
Cephalosporins		
Cefotaxim	2	0
Fluoroquinolones		
Ciprofloxacin	2	0
Enrofloxacin	2	0
Quinolones		
Nalidixic acid	2	0
Trimethoprim	2	0
Sulfonamides		
Sulfonamide	2	0
Aminoglycosides		
Streptomycin	2	0
Gentamicin	2	0
Neomycin	2	0
Kanamycin	2	0
Spectinomycin	2	0
Trimethoprim +	2	0
sulfonamides		
Penicillins		-
Amoxicillin	2	0
Amoxicillin/Clavulanic acid	2	0
Ampicillin	2	0

Table Antimicrobial susceptibility testing of S. Senftenberg in All feedingstuffs - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (μl/ml) or zone (mm) of inhibition equal to	s (n) a	nd numk	o Jac	fisol	ates	with	the c	oncer	ıtratic	Ju) nc	/ml) o	or zon	ım) əc	m) of	inhib	ition (	edna	5														
	S	S. Senftenberg	ften	pe	rg																											
	A	All feedingstuffs - Monitoring	ling	stu	ıffs	<u>N</u>	loni	torii	βL																							
Isolates out of a monitoring programme	yes yes	0																														
Number of isolates available in the laboratory	ole 2																															
Antimicrobiale	2		<u> </u>	_	8	-	0	1	2	3	Þ	9	9	2	8	6	0	<u>-</u>	- z	5	9	9	2	8	6	0	ľ	z	ε	<b>*</b>	9	
Tetracyclines	2	0		_	_		_	_	_	L	L	L	ı	_		_	_	_		_		_	_	_	_	3	3	3	3	ε	ε	
	4																							-							1	
Ampnenicols Chloramphenicol	2	0																		-	-	-									-	
Florfenicol	7	0				1												1				-		7								
Cephalosporins																																
Cefotaxim(2)	2	0			_		_															_		_						_	_	
Fluoroquinolones	-																							-								
Ciprofloxacin(1)	2	0																-						_							2	
Enrofloxacin	2	0																								1	1					
Quinolones																																
Nalidixic acid	7	0	+	-	+	-	+	-									_	1	+	1	-	-	-	_								
Trimethoprim	7	0																						-			-					
Sulfonamides																																
Sulfonamide	7	0																-			-											
Aminoglycosides																																
Streptomycin	7	0					-			-	-											_		_								
Gentamicin	7	0					_												-	-												
Neomycin	7	0															_		-													
Kanamycin	2	0		-	_		_									-	_	-	-		_	-	_	_								
Spectinomycin	2	0															-	-														
Trimethoprim + sulfonamides	0	0																										-				
Penicillins																																
Amoxicillin	2	0			-			_										_				-		-								
Amoxicillin/Clavulanic acid	2	0																					-			-						

(1): 36 and 38 mm (2): one strain 36 mm

Table Antimicrobial susceptibility testing of S. Stanleyville in Cattle (bovine animals) - unspecified - at farm - animal

S. S Cat Isolates out of a monitoring yes programme Number of isolates available 1 in the laboratory	S. Stanleyville Cattle (bovine anima yes  N		- adsun	cified - (									
			- nusbe	cified - (									
Isolates out of a monitoring programme  Number of isolates available in the laboratory	9	6			at farm	ls) - unspecified - at farm - animal sample - faeces - Monitoring	sample	e faec	ses - M	onitorin	ıg		
	9	6											
	9	6											
	9	6											
Antimicrobials: N	0 0 0		11	11 14 13	ا9 ا	18 19 20	55 51	5¢	52 52	72 82 82	30	33	32 34
Amphenicols	0 0 0												
Chloramphenicol 1	0 0							-					
Florfenicol 1	0								1				
Cefotaxim(1)	>												-
Ciprofloxacin 1	0												_
Enrofloxacin 1	0												_
	4	-											
Nalidixic acid	0 (							-					
Trimethoprim 1	o o										-		
Sulfonamides													
Sulfonamide 1	0												
sides													
<b>C</b>	0 (			~				-					
_	0							-					
Neomycin 1	0						-						
Kanamycin 1	0							_					
Spectinomycin 1	0						-						
Trimethoprim + sulfonamides	0											-	
Penicillins										_		_	
Amoxicillin 1	0								_				
Amoxicillin/Clavulanic acid	0								_				
Ampicillin 1	0								_				

# Table Antimicrobial susceptibility testing of S. Stanleyville - qualitative data

n = Number of resistant is	solates	
	S. Stanleyville	
	Cattle (bovine animals) - unspecified - at fa	orm - Monitorina
	· · ·	arm - Monitoring
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
Autholoughiala	Ta.	-
Antimicrobials:	<b>N</b>	<b>n</b> 0
Tetracyclines	I	U
Amphenicols	1.	la l
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins	٦.	
Cefotaxim	1	0
Fluoroquinolones	1.	
Ciprofloxacin	1	0
Enrofloxacin	1	0
Quinolones	14	
Nalidixic acid	1	0
Trimethoprim	1	0
Sulfonamides		
Sulfonamide	1	0
Aminoglycosides		
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	]1	0
sulfonamides		
Penicillins		
Amoxicillin	1	0
Amoxicillin/Clavulanic acid	1	0
Ampicillin	1	0

Table Antimicrobial susceptibility testing of S. Tennessee in Meat from broilers (Gallus gallus) - mechanically

separated meat (MSM) - Monitoring - q	SM) - Mc	onit	orii	- gu	nb -	lant	itat	ive	uantitative data [Diffusion method]	:a [[	Jiffu	JSic	n no	neth	ροι	]													
Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	and numbe (	r of i	solate	es wi	th the	con	entra	tion (	ul/ml)	) or zc	u) auc	nm) o	f inhil	oition	edns	l to													
	S. Tennessee	sse	ee																										
	Meat from broilers (Gallus gallus)	m	roi	ers	9	allu	s g	SIII S	()	- mechanically separated meat (MSM) - Monitoring	cha	nic	<u>\</u>	sep	ara	ted	me	at (	MS	Ē	Ĭ	oniț	orin	g					
Isolates out of a monitoring programme	yes																												
Number of isolates available in the laboratory																													
	-					İ	ŀ	ŀ	ŀ	ŀ	ŀ			ŀ	ŀ	ŀ	•	ŀ	ŀ	ŀ				ŀ	ŀ	ŀ	ŀ	•	
Antimicrobials:	u Z	9	7	8	6	10	11	13	۶۱ د د	12	91	<b>۷</b> ۱	81	61	50	12	22	54	52	97	72	82	58	30	31	32	34	32	
Tetracyclines	0																	-											
Amphenicols																													
Chloramphenicol	0								_								-												
Florfenicol	0							_									_		-										
Cephalosporins	4							-									-	-		-	-				-		-		
Cefotaxim(2)	0									_							_											-	
Fluoroquinolones																		-									-		
Ciprofloxacin(1)						7	+	$\dashv$	+	4	4					1	+	+	-							-	-	-	
Enrofloxacin	1							-									_										_		
Quinolones	•																	-										-	
Nalidixic acid								+	-	_							+	-	4						+		4	4	
Trimethoprim	0																						-						
Sulfonamides	1															,									,	,			
Sulfonamide	0							_	_	_	_		-				_		_								_	_	_
Aminoglycosides	_							-		-	-				-		-	-		-					-		-		
Streptomycin	0						-	-		_																			
Gentamicin	0						1	+		-	4							-											
Neomycin	0																-												
Kanamycin	0															-													
Spectinomycin	0							+	+	-	4					-													
Trimethoprim + sulfonamides	0																								-				
Penicillins																													
Amoxicillin	0																					-							
Amoxicillin/Clavulanic acid	0						$\exists$	$\dashv$	=	-	4						-	-	4	_			-		-		_	4	

Ampidllin (1): 36 mm (2): 38 mm

# Table Antimicrobial susceptibility testing of S. Tennessee - qualitative data

n = Number of resistant is	solates		
	S. Tennessee		
	Meat from broilers (Gallus gallus) - mech	anically separated meat (MSM) - Monitoring	
Isolates out of a	yes		
monitoring programme			
Number of isolates	1		
available in the			
laboratory			
Antimicrobials:	N .	n	
Tetracyclines	1	0	
Amphenicols			
Chloramphenicol	1	0	
Florfenicol	1	0	
Cephalosporins	'	V	
Cefotaxim	11	0	
Fluoroquinolones	·	, °	
Ciprofloxacin	11	0	
Enrofloxacin	1	0	
Quinolones			
Nalidixic acid	]1	0	
Trimethoprim	1	0	
Sulfonamides			
Sulfonamide	1	0	
Aminoglycosides		,	
Streptomycin	1	0	
Gentamicin	1	0	
Neomycin	1	0	
Kanamycin	1	0	
Spectinomycin	1	0	
Trimethoprim +	1	0	
sulfonamides			
Penicillins	-		
Amoxicillin	1	0	
Amoxicillin/Clavulanic acid	1	0	
Ampicillin	1	0	

Table Antimicrobial susceptibility testing of S. Tennessee in All feedingstuffs - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	(n) and I	numbe	er of	isola	tes w	/ith t	he co	ncen	ratio	/lrl) u	ml) o	r zon	e (mn	η of i	nhibit	ione	dual	9													
	S. Tennessee	enn	ess	see																											
	All feedingstuffs	eedi	ngs	stuf	Įs																										
Isolates out of a monitoring programme	yes																														
Number of isolates available in the laboratory	<u>ო</u>																														
Antimicrobials:	z	u	9		8	6	01	11	12	13	14	91	91	۷۱	81	02	12	7.7	53	77	97	97	72	87	67	18	32	83	78	32	
Tetracyclines	е	0	_	_	_	_	_											-	_	:	-		;			_					
Amphenicols		-		-																			1								
Chloramphenicol	ဇ	0														H	7	-								Н					
Florfenicol	က	0															-		-	-											
Cephalosporins																															
Cefotaxim(3)	3	0												_		_										_				3	
Fluoroquinolones																															
Ciprofloxacin(1)	ო	0																											-	2	
Enrofloxacin(2)	e	0														_													2	-	
Flumequin	က	0														_										_		-			
Quinolones																															
Nalidixic acid	3	0															-		-		-										
Trimethoprim	က	0																					_		- 5						
Sulfonamides																							1			ŀ					
Sulfonamide	3	0												1		1		-													
Aminoglycosides																															
Streptomycin	ო	-						~	-	-						-															
Gentamicin	က	0														-				ო											
Neomycin	ო	0														-	-	-	-	-						-					
Kanamycin	က	0														-	-	-	-	-						-					
Spectinomycin	8	0														ო															
Trimethoprim + sulfonamides	က	0																						<del>-</del>							
Penicillins																									,						
Amoxicillin	က	0														-	-			-	7										
Amoxicillin/Clavulanic acid	က	0																					_	_		-					
Ampicillin	ဧ	0		_	_	_	_							_	_	_	_	_	_			2		_		-	-	_	_		

(1): two strains 36 mm (2): one strain 36 mm (3): one strain 38 mm

# Table Antimicrobial susceptibility testing of S. Tennessee - qualitative data

n = Number of resistant is	solates		
	S. Tennessee		
	All feedingstuffs - Monitoring		
Isolates out of a	yes		
monitoring programme			
Number of isolates	3		
available in the			
laboratory			
	1		
Antimicrobials:	N	n	
Tetracyclines	3	0	
Amphenicols	_		
Chloramphenicol	3	0	
Florfenicol	3	0	
Cephalosporins			
Cefotaxim	3	0	
Fluoroquinolones			
Ciprofloxacin	3	0	
Enrofloxacin	3	0	
Flumequin	2	0	
Quinolones			
Nalidixic acid	3	0	
Trimethoprim	3	0	
Sulfonamides	3 0		
Sulfonamide	3	0	
Aminoglycosides	_		
Streptomycin	3	1	
Gentamicin	3	0	
Neomycin	3	0	
Kanamycin	3	0	
Spectinomycin	3	0	
Trimethoprim +	3	0	
sulfonamides			
Penicillins	1		
Amoxicillin	3	0	
Amoxicillin/Clavulanic acid	3	0	
Ampicillin	3	0	

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - unspecified - at farm - animal

Number of resistant isolates (n) and number of isolates with the	solates with the concentration (μl/ml) or zone (mm) of inhibition equal to
S. Typhimurium	rium
Gallus gallus (fowl)	s (fowl) - unspecified - at farm - animal sample - organ/tissue - Clinical investigations
Isolates out of a monitoring programme	
Number of isolates available in the laboratory	
Antimicrobials: N = 0	32 33 33 33 34 35 37 37 37 37 37 37 37 37 37 37 37 37 37
lenicol 1	
Florfenicol 1 0	
rins	
Cefotaxim(6)	
sel	
-	
n(2)	
Flumequin 1	
Nalidixic acid	
Trimethoprim(3)	
Sulfonamide (4)	
Aminoglycosides  Streetomycin	
-	
Kanamycin 1 0	
Spectinomycin 1 0	
Trimethoprim + 0 sulfonamides(5)	
Penicillins	
-	
/Clavulanic acid	
Ampicillin 1 0	

(1):38 mm (2):38 mm (3):39 mm (4):40 mm (5):40 mm (6):40 mm

# Table Antimicrobial susceptibility testing of S.Typhimurium in animals

n = Number of resistant is	solates							
	S. Tv	phimuriur	n					
		(bovine	Pigs		Gallus	gallus (fowl)	Turke	ys
Isolates out of a	no				yes			
monitoring programme								
Number of isolates	1		0		1		0	
available in the								
laboratory								
Antimicrobials:	N	ln	N	n	N	n	N	n
Tetracyclines	1	1	1.4		1	0		
Amphenicols								
Chloramphenicol	1	1			1	0		
Florfenicol	1	1			1	0		
Cephalosporins	<u>'</u>				<u>'</u>			
Cefotaxim	1	0			1	0		
Fluoroquinolones						1-		
Ciprofloxacin	1	0			1	0		
Enrofloxacin	1	0			1	0		
Flumequin	0	0			1	0		
Quinolones		,	'	'	·	·		
Nalidixic acid	1	1			1	0		
Trimethoprim	1	0			1	0		
Sulfonamides		'		,	'	'		'
Sulfonamide (2)	1	1			1	0		
Aminoglycosides								
Streptomycin	1	1			1	0		
Gentamicin	1	0			1	0		
Neomycin	1	0			1	0		
Kanamycin	1	0			1	0		
Spectinomycin	1	1			1	0		
Trimethoprim + sulfonamides	1	0			1	0		
Penicillins		,	,	,		· ·		
Amoxicillin	1	1			1	0		
Amoxicillin/Clavulanic acid	1	0			1	0		
Ampicillin	1	1			1	0		
Fully sensitive	0				1			
Resistant to >4 antimicrobials	1	1						

<sup>(1) :</sup> cefotaxime (2) : 3 S

2. Typhimurium  Cattle (bovine animals) - unspecified - at farm - animal  o  i i i i i  i i i i i  i i i i i  i i i i i  i i i i i  i i i i i  i i i i i  i i i i i  i i i i i  i i i i i  i i i i i  i i i i i i  i i i i i i i  i i i i i i i i i  i i i i i i i i i i i i i i i  i	
Cattle (bovine animals) - unspecified - at farm - animal on the provine animals) - unspecified - at farm - animal on the provine animal on the province animal o	
22	al sample - organ/tissue - Clinical investigations
ZZ	
Second   S	
des des + + +	21
des	
des des + + + + + + + + + + + + + + + + + + +	
des + + + + + + + + + + + + + + + + + + +	
des + +	-
des + +	
\$ ab	
des	
des	
des + +	
des +	
des +	
des	
4 des	
+	
+	7
+	-
+	
-	-
1	
-	
Amoxicillin/Clavulanic acid 1 0	
Ampicillin 1 1 1	

Table Antimicrobial susceptibility testing of S. Typhimurium in offal - Meat from turkey - liver - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	n) and num	o Jac	f isol	ates	with	the c	ouce	ntratio	lu) nc	/ml)	or zon	ne (mr	n) of i	inhibi	tion e	dna	٩													
	S. Typhimurium	Ë	uri	Ę																										
	Meat from turkey - offal - liver	om	tur	'ke	) - /	offa	<u> </u>	ver																						
Isolates out of a monitoring programme	yes																													
Number of isolates available in the laboratory	1																													
. alcidozojmisa v	z	<u>9</u>	_		-	0	1	7	3	<b>†</b>	9	9		8	6	1	2	ε	Þ	9	9	2	8	6	0	2	3	<b>†</b>	9	
Tetracyclines		_	_	_	_		Ť	L _	L	ı	L	ı	_	_	_	_	_	_	Z	Z	Z	z	Z	_	_	_	_	ε	3	
i en acy en les		-	1	1	1	-	-	_	_					-	-	-	-	4				1	1	1	1	-	_			
Amphenicols	-	-	-	-		-	-								-	_	_	_												
Chloramphenicol	- 7	-	+	+	-	+	+	1	1				1	+	+	+	+	+				T	T	1	+	+	1			
Florfenicol	-		-	_	-			_							-										_	-				- 1
Cephalosporins			-																											
Cefotaxim(1)	1 0		_	_		_	_								_														-	
Fluoroquinolones			-											-																
Ciprofloxacin	1	1	+	-	_	-	-								-	-	4							-						
Enrofloxacin	1		-			-									-					-					-					
Flumequin	1 1										1																			
Quinolones																														
Nalidixic acid	-	-																												
Trimethoprim	0																								-					
Sulfonamides																														
Sulfonamide	1	-																												
Aminoglycosides																														
Streptomycin	1	-	-	-		-									-	_		_							_	_				
Gentamicin	1		-	-		-									-	_		_		-					_					
Neomycin	1 0	-	-													-			-											
Kanamycin	1																	-												
Spectinomycin	-	-													-															
Trimethoprim + sulfonamides	0																			<b>~</b>										
Penicillins	-	-	-	-		-	-		-				-	-		-	_		_				-		-	-	-			
Amoxicillin	-	-	H	H		-	-		L	L					H	H	L	L	L						H	H		L		
		-	-	-		-	-						-			-		-					-		-	-				

(1): 36 mm

Amoxicillin/Clavulanic acid Ampicillin

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from pig - meat products - Monitoring - quantitative data [Diffusion method]

Number of recistant isolates (	Nimber of resistant isolates (n) and number of isolates with the concentration (ul/ml) or zone (mm) of inhihition equal to
	S. Typhimurium
	Meat from pig - meat products - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1
Antimicrobials:	25 26 27 27 27 27 27 27 27 27 27 27
Tetracyclines	1 0
Amphenicols	
Chloramphenicol	1 0
Florfenicol	
Cephalosporins	
Cefotaxim(3)	1 0
Fluoroquinolones	
Ciprofloxacin(1)	1 0
Enrofloxacin(2)	1 0
Quinolones	
Nalidixic acid	
Trimethoprim	1
Sulfonamides	
Sulfonamide	1 0
Aminoglycosides	
Streptomycin	1 0
Gentamicin	1
Neomycin	1 0
Kanamycin	
Spectinomycin	1
Trimethoprim + sulfonamides	0
Penicillins	
Amoxicillin	1 0
Amoxicillin/Clavulanic acid	1 1

(1): 37 mm (2): 36 mm (3): 36 mm

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from pig - minced meat - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n)	Number of resistant isolates (n) and number of isolates with the concentration (ul/ml) or zone (mm) of inhibition equal to
S	S. Typhimurium
	Meat from pig - minced meat - Monitoring
Isolates out of a monitoring yes programme	S
Number of isolates available in the laboratory	
N Sutimicrobiale.	S   V   E   Z   V   O   G   8   L   O   G   8   L   O   G   8   L   O   G   8   L   O   G   8   L   O   G   8   L   O   G   8   L   O   G   8   L   O   G   8   L   O   G   8   L   O   G   6   8   L   O   G   6   8   L   O   G   6   8   L   O   G   6   8   L   O   G   6   8   L   O   G   6   8   L   O   G   6   8   L   O   G   G   O   O   G   O   O   O   O
called and a	
Amphenicols	
Chloramphenicol	
Florfenicol 1	0
Cephalosporins	
Cefotaxim(1)	0
Fluoroquinolones	
Ciprofloxacin 1	0
Enrofloxacin 1	0
Quinolones	
Nalidixic acid	
Trimethoprim	0
Sulfonamides	
Sulfonamide 1	
Aminoglycosides	
Streptomycin	0
Gentamicin 1	0
Neomycin 1	- 1
Kanamycin	0
Spectinomycin 1	1
Trimethoprim + sulfonamides	-7
Penicillins	
Amoxicillin 1	-
Amoxicillin/Clavulanic acid	

Table Antimicrobial susceptibility testing of S. Typhimurium in meat products - Meat from broilers (Gallus gallus) - raw

but intended to be eaten cooked - Monit	out intended to be eaten cooked - Monitoring - quantitative data [Diffusion method]	i
Number of resistant isolates (n) a	Number of resistant isolates (n) and number of isolates with the concentration (μl/ml) or zone (mm) of inhibition equal to	
<b>ω</b>	S. Typhimurium	
Σ	Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - Monitoring	
Isolates out of a monitoring yes programme	es	
Number of isolates available in the laboratory		
Antimicrobials:	33 33 34 35 37 37 37 37 37 37 37 37 37 37 37 37 37	
Tetracyclines 1		
Amphenicols		
nenicol	0	
Florfenicol 1	0	П
Cephalosporins		
Cefotaxim(1)		٦
Fluoroquinolones		
Enrolloxacin		
Nalidixic acid		
1 Trimethoprim		
Sulfonamides		
Sulfonamide 1		
Aminoglycosides		
Streptomycin 1	-	
_		
Neomycin 1	0	
Kanamycin 1	0	
Spectinomycin 1	T	
Trimethoprim + sulfonamides		
Penicillins		
Amoxicillin 1		
Amoxicillin/Clavulanic acid	-	_

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from turkey - mechanically separated meat (MSM) - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	) and num	ber	of isc	olates	s with	h the	conc	entra	tion (	(lm/lr	or zo	ne (n	o (mu	finhi	bition	) edu	al to													
	S. Typhimurium	hin	)uri	inn	_																									
	Meat from turkey - mechanically separated meat (MSM) - Monitoring	ο̈	ր tu	rke	- X	me	che	ınic	ally	sek	oara	atec	ŭ	eat	(MS	SM)	2	lon	itori	ng										
Isolates out of a monitoring programme	yes																													
Number of isolates available in the laboratory	7																													
	•	j	ľ	Ì	İ			ŀ	ľ	ŀ	•					Ì	Ì	ŀ	ŀ											
Antimicrobials:	_	u	9	L	8	6	01		13	14	S١	91	۲١	81	61	50	51	22	53	52 54	56	72	82	58	30	31	32	33	34	32
Tetracyclines	7		_				က	-											7											
Amphenicols																														
Chloramphenicol	7 5		2			П			$\vdash$	Н	Н					П		_	-		Н		Н							
Florfenicol	7 5		2						_		_									-	-									
Cephalosporins																														-
Cefotaxim(3)	7								_		_										_							_		9
Fluoroquinolones																														-
Ciprofloxacin(1)								+	+			-							+	4	-									2
Enrofloxacin(2)				-	_			+	+		_					7			+	4	-				-			``	2	က
Flumequin	2 0										_															2				
Quinolones																														
Nalidixic acid	7	İ							-	-	_					_				-	7	7								
Trimethoprim	7		_																					-		7		က		
Sulfonamides									,							,			,	,	,							,	,	
Sulfonamide	7										_																			
Aminoglycosides							-					-						-	-		-	-	-	-						-
Streptomycin			9	1			1	1	+		-					7														
Gentamicin				7				1	+	-	_					7				7										
Neomycin																														
Kanamycin		T					+										1 2	7	2	4		_								
Spectinomycin			9														-													
Trimethoprim + sulfonamides	7		7																	7	7	-								
Penicillins																														
Amoxicillin	7 5		2		П			$\exists$	-		-								-		Н									

Amoxicillin/Clavulanic acid	7	_	1		_	_	4
Ampicillin	2	9	9				_
(1): one strain 36 mm, two 37 mm, one 39 mm, one 40 mm	'o 37 mm,	one	39 mm, one	40 mm			

(2): one strain 36 mm (3): two strains 36 mm, one 37 mm, three 40 mm

Table Antimicrobial susceptibility testing of S. Typhimurium - qualitative data (Part A)

n = Number of resistant isolates	olates															
	S. Typhimurium	ohim	nrium													
	Meat from broilers (Gallus) -	E	Meat from broilers (Gallus	Meat from turkey - mechanically senarated		Meat from pig - fresh - Monitoring		Meat from pig - carcass - Monitoring	Meat from pig - minced meat -	inced	Meat from pig - meat products -		Meat from bovine animals -	Meat from rabbit - mechanica	ically o	Meat from Meat from rabbit - turkey - mechanically offal - liver -
	ganus) - meat products - raw but intended to be eaten cooked	d to	ganus) - mechanically separated meat (MSM) - Monitoring		oring								meat -	meat (MSM) - Monitoring		
Isolates out of a monitoring programme	yes		yes	yes		yes	yes		yes		yes	yes		yes	×	yes
Number of isolates available in the	~	,,	2	2	ro		7		_	~		~		~	~	
laboratory																
Antimicrobials:	z	u	<u>c</u>	z	_ u	c Z	z	۵	z	u	_ Z	z	и	z	Z	c
Tetracyclines			2 2	7 5	5	е	2	2	1	1	0	-	_	1	-	_
Amphenicols																
Chloramphenicol	1			7 5			7	_	-	0	0	_	0	_	_	_
Florfenicol	1 0		2 2	7 5	5 5	0	2	1	1 0	0 1	0	1	0	1 1	1	1
Cephalosporins																
Cefotaxim	1		2 0	7 0	0	0	2	0	1	0	0	_	0	1 0	_	0
Fluoroquinolones																
Ciprofloxacin	1		2 0	7 0		0	7	0	-	0	0	_	0	1	_	0
Enrofloxacin		0	2 0	7			7	0	-	0	0	_	0	1	_	0
Flumequin				2 0		0						1	0		1	1
Quinolones																
Nalidixic acid	_	_	2 0	7			7	2	_	_	0	_	0	1	_	_
Trimethoprim	_	_	2 0	7	- 2	7	7	~	1	0	0	_	_	1	_	0
Sulfonamides															-	
Sulfonamide	1		2 2	7 7	2	3	2	2	1 1	1 1	0	1	1	1 1	1	1
Aminoglycosides																

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	_	_		(	1					`	_					•	•	•	_	-
Streptomycin	_	-	7	7	,	0	ر م	7	. 7	_	<u> </u>	_	D	_	_	_	_	_	_	
Gentamicin	_	0	2	0	7	0	2	0	2	_	0	1	0	_	0	_	0	_	0	
Neomycin	_	0	2	0	7	0	2	0	2 0	0 1	<u>ی</u>	-	0	_	_	_	0	_	0	
Kanamycin	-	0	7	0	7	0	2	0		0		1	0	_	_	_	0	_	0	
Spectinomycin	-	0	2	2	7		2	1	2	1	0	1	0	1	0	_	_	_	-	
Trimethoprim +	_	_	7	0	7	7	2	2	7	_	_		0	_	_	_	0	~	0	
sulfonamides																				
Penicillins																				
Amoxicillin	_	_	7	2	7	2	2	2		2	_	_	0	_	_	_	_	_	_	
Amoxicillin/Clavulanic acid	~	0	7	0	7	_	2	0	2	_	0		0	_	0	_	_	_	0	
Ampicillin	_	_	2	2	7	9	2	2	2	2 1	_		0	_	_	_	_	_	_	

Table Antimicrobial susceptibility testing of S. Typhimurium - qualitative data (Part B)

n = Number of resistant isolates	olates	
	S. Typhimurium	
	Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat - Monitoring	onkeys, bison and water buffalos) - minced meat - Monitoring
Isolates out of a	yes	
monitoring programme		
Number of isolates	2	
avaılable ın the laboratory		
Antimicrobials:	Z	u
Tetracyclines	2	2
Amphenicols		
Chloramphenicol	2	2
Florfenicol	2	
Cephalosporins		
Cefotaxim	2	0
Fluoroquinolones		
Ciprofloxacin	2	0
Enrofloxacin	2	0
Flumequin		0
Quinolones		
Nalidixic acid	2	0
Trimethoprim	2	
Sulfonamides		
Sulfonamide	2	1
Aminoglycosides		
Streptomycin	2	1
Gentamicin	2	0
Neomycin	2	0
Kanamycin	2	0
Spectinomycin	2	1
Trimethoprim +	2	0
sulfonamides		
Penicillins		

Amoxicillin	2	2
Amoxicillin/Clavulanic	2	
acid		
Ampicillin	2	2

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from rabbit - mechanically separated meat (MSM) - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n	Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to
	S. Typhimurium
	Meat from rabbit - mechanically separated meat (MSM) - Monitoring
Isolates out of a monitoring brogramme	yes
Number of isolates available in the laboratory	
•	
Antimicrobials:	25   15   20   20   20   20   20   20   20   2
Tetracyclines	
Amphenicols	
Chloramphenicol 1	
Florfenicol 1	
Cephalosporins	
Cefotaxim(2)	0
sei	
(1)	0
Enrofloxacin 1	0
Nalidixic acid	-
Trimethoprim	0
Sulfonamides	
Sulfonamide 1	1 1
Aminoglycosides	
Streptomycin 1	-
Gentamicin 1	
Neomycin 1	
Kanamycin 1	0
Spectinomycin 1	
Trimethoprim + sulfonamides	-
Penicillins	
Amoxicillin 1	
Amoxicillin/Clavulanic acid	

(1):38 mm (2):38 mm

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from bovine animals - minced meat - Monitoring quantitative data [Diffusion method]

Number of resistant isolates (n)	Number of resistant isolates (n) and number of isolates with the concentration (ul/ml) or zone (mm) of inhibition equal to
	S. Typhimurium
2	Meat from bovine animals - minced meat - Monitoring
Isolates out of a monitoring   y <sup>(</sup>	yes
Number of isolates available in the laboratory	
2	# # # # # # # # # # # # # # # # # # #
Antimicrobiais:	3
Tetracyclines	
Amphenicols	
Chloramphenicol	
Florfenicol 1	
Cephalosporins	
Cefotaxim(1)	0
Fluoroquinolones	
Enrofloxacin 1	-
Flumequin 1	
Nalidixic acid	0
Trimethoprim 1	
Sulfonamides	
Sulfonamide 1	
sides	
Streptomycin	
_	
Neomycin	1
Kanamycin	
Spectinomycin	
Trimethoprim + sulfonamides	7
Penicillins	
Amovioillin	
AMOXICIIIII	

(1): 36 mm

Amoxicillin/Clavulanic acid Ampicillin

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from broilers (Gallus gallus) - mechanically

separated meat (MSM) - Monitoring - q	W - (W	onit	orii	- gu	nb	ant	uantitative data [Diffusion method]	Ne C	lata  -	<u> </u>	iffus	ion	Ĕ	thc	ਰੂ													
Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	and numb	er of i	solate	es wit	h the	conc	entrat	ion (µ	/ml)	or zon	e (mn	n) of i	nhibit	ion ec	qual t	0												
	S. Typhimurium	imu	riun	_																								
	Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - Monitoring	om k	oroil	ers	<u>Ö</u>	allus s	s ga	Ilus	n	nec	han	icall	y se	epai	rate	d L	eat	$\Xi$	SM	-	Jon	itori	ing					
Isolates out of a monitoring brogramme	yes																											
Number of isolates available 2 in the laboratory																												
Antimicrobials:		9	7	8	6	01	11	13	ÞΙ	SI	91	<u>ال</u>	81 61	20	12	22	53	54	52	9Z 7Z	82	52	30	31	32	33	34	32
Tetracyclines 2	5						7																					
								-	-		-	-	-	-	-			-		-	-	-	-				-	-
Chloramphenicol 2		2												-							-							
Florfenicol 2	- 5	2						_													_							
Cephalosporins								-					-		-					-		-						-
Cefotaxim(3)	0																				_						_	
les													-	-								-					•	-
		4				+	+	4			1		+	+					1	+	+	+	4				-	
Enrofloxacin(2)	0						$\dashv$														$\dashv$						_	
								_																				
Nalidixic acid																			-	-								
Trimethoprim 2	0																									-		
Sulfonamides																												
Sulfonamide 2	2	2																			_							
Aminoglycosides								-			-		-			-			-	-		-	-				-	
		7																			-							
Gentamicin 2																		.,	2									
Neomycin 2																-	-				-							
Kanamycin 2																	-		_									
Spectinomycin 2		2				+	-	_													-							
Trimethoprim + sulfonamides	0																				7							
Penicillins	-					-	-	-					-	-	_					-	-	-	_				-	-
Amoxicillin  2	2	2				H		L	_			H	-	-	_				Н	H	H	-	_	L			-	-
		-	L	I	T	$\dagger$	+	H	-	_	t	t	ł	H	ļ	ļ		t	t	H	+	+	ļ	ļ	İ	t	t	Т
Amoxicillin/Clavulanic acid						-		_				-	-	-					-	-	-	_	_					

Ampidilin (1):40 mm (2):38 mm (3):38 mm

Table Antimicrobial susceptibility testing of S. Tvohimurium in Meat. red meat (meat from bovines, pigs, goats, sheep,

	: : : :	: 5	) 5	<u> </u>	; :		:	<u>:</u>	5		, 5	<u>;</u>	) :	" :	, D	5	<u>.</u>	;	j	j	<u>.</u>	; ;	5	<u>;</u>	<u> </u>	₹		
Number of resistant isolates (n) and number of isolates with the concentration (μl/ml) or zone (mm) of inhibition equal to	and numbe	ır of is	solate	es wit	h the	conc	entra	tion (F	(lm/lr	or zo	ne (m	n) of	ididi	tion e	qual	2												
	S. Typhimurium	mu	riun	ے																								
	Meat, red meat (meat minced meat - Monitor	neg meg	near	t (m	nito		Б —	ovir	es,	from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) ing	s, g	oat	S, S	Jee	р, Һ	ors	es,	don	key	s, b	isor	an L	<u>≽</u>	ateı	r bu	ffalc		
Isolates out of a monitoring programme	yes																											
Number of isolates available in the laboratory	2																											
			_			-	-	-	-	_	9	_	-		_	-	8	t	9	-	-	_	-	1	7	-	-	
Antimicrobials:	_	9 ,	7	8	6	10		: L	71	il	16	۱.	31	50 18	2	22	53	77	56	56	22	56	30	3.	33	33	3E 7E	. <u>.</u> [
Tetracyclines	7	7																										
Amphenicols																												
Chloramphenicol	2	7																										
	2 1	-				$\exists$								$\dashv$				-		$\exists$	-							
rins																						-						
	0 0						-	_	_					-	_						-	_				-	.7_	4
sec	c							-					-	-	-												c	-
(1)		_				$\dagger$	+	+	-				+	+	+	1	1		$\dagger$	+	+	+			Ť	0		_
Enrofloxacin		-				+	+	+	+	1		$\dagger$	+	+	+	-	1		T	+	+	+	1		,	1	+	
Quinolones																					-	_				_	_	
	2 0							Н		Н		П	Н	Н			Ц			_	Н	H	-			Н	Н	Н
Trimethoprim	2					-																			-			
	,																											
Sulfonamide	2 1	-							-	_				-							_							
Aminoglycosides																						-						
		-				1	+	+	4	4	-	7	+	+	4	4	_		7	+	+	_						
_		_				7	+	+	-	4		7	+	+	4	_	_	-			-	_						
						+		-	+	_			+	+	-		۰ م		1.	+	+	_				+	+	
														-			-		_		+							
Spectinomycin	7 0	-							-				+	-					Ť	+	+	_	-		Ì	+	+	
Trimethoprim + sulfonamides																				_			-					
Penicillins																												

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Amoxicillin	2	7	2											
Amoxicillin/Clavulanic acid	2	2	_		-									
Ampicillin	2	7	2											
	:													

(1): one strain 38 mm, one 40 mm (2): one strain 37 mm

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from pig - carcass - Monitoring - quantitative data [Diffusion method]

Missels of sections (my section for the section of	Pub (u) 0	4	90	100	100	44 445		2	9	[m/ m/		3,000		1 4 5 5	10191	0.00	,												
	S. T. S. T	S. Typhimurium	i E	Iriu	<u>ا</u> ا		2	2			5					ed ca	2												
	Me	Meat from pig - carca	mc	pig	ა -	arce	SSE	ss - Monitoring	onit	orin	g																		
Isolates out of a monitoring programme	g yes																												
Number of isolates available in the laboratory	ole 2																												
;	<u> </u>	_	-	-	-		(		-	-	-	_	4	3	-	-	-	-	-	9	-	-	-	-	-	3	-	_	
Antimicrobials:	<u>z</u> ,	u ,	9		8	6	10	11	21	14 13	9 L	16	11	8 I	16	20	55	53	54	52	56	72	26 26	30	31	32	33	34	32
Tetracyclines	N	7		_				-																					
Amphenicols																													
Chloramphenicol	2	-	-	_							_							_		-									
Florfenicol	2	1	1																			1							
Cephalosporins																						-							-
Cefotaxim(1)	2	0																										2	
Fluoroquinolones																													
Ciprofloxacin	2	0									-										_	-							
Enrofloxacin	2	0																		2									
Quinolones									٠																				
Nalidixic acid	2	7	7	_	_																								
Trimethoprim	2	-	-																							-			
Sulfonamides																													
Sulfonamide	2	2	7	_																									
Aminoglycosides																													
Streptomycin	2	-	-							-	_											_							
Gentamicin	2	-	-								_								-			_							
Neomycin	2	0									_						-	-											
Kanamycin	2	0										-					-												
Spectinomycin	2	-	-	_	_	_											-												
Trimethoprim + sulfonamides	7	<del>-</del>	-																	-									
Penicillins		-	-	_			_		-	_	-	_			-	-	-	-	_			-	-	-	_		_		
Amoxicillin	2	2	7	-						H	-				Т	_	H	H			Т	Н	-	H				Н	H
Amoxicillin/Clavulanic acid	2	-		H	-						H	-										Н							

Ampicillin

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from pig - fresh - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (ul/ml) or zone (mm) of inhibition equal to	nuu duu	nber	of iso	lates	with	the c	once	ntratic	lu) uc	o (lm/	rzone	mm) e	of ir	hibiti	on ed	ual to													
	S. Typhimurium	hin	nuri	L L					-																				
	Meat from pig - fresh	ron	n pi	g -	fres		Mo	- Monitoring	ring																				
Isolates out of a monitoring programme	yes																												
Number of isolates available in the laboratory	2																												
		İ	ŀ	ŀ	ŀ		ŀ	•		į		ŀ	ŀ	ŀ	•				•	ŀ	-	•			•	-	-	•	
Antimicrobials:	z	u	<u>a</u>	7	8	6 0۱	11	15	13	ħ١	٩Į	91	۲۲ 81	61	50	12	22	53	54	52 52	27	82	53	30	31	33	34	32	ı
Tetracyclines	2	e e	က																	_		-							
Amphenicols																													
Chloramphenicol		0				-							-				-		2			-							
Florfenicol	9	0											_				1		-	က		_							
Cephalosporins																						-							
Cefotaxim(3)	9	0											_									_						2	
Fluoroquinolones																													
Ciprofloxacin(1)		0																									-	4	
Enrofloxacin(2)		0											-													-	-	ო	
Flumequin	3	0											_												_	-	-		
Quinolones	-										-	-		-						-	-		-		-	-	-		
Nalidixic acid			7		1	1	-												2										
Trimethoprim	D.	2	7																			-		-		-			
Sulfonamides																													
Sulfonamide	2	3	3														1		1										
Aminoglycosides									-			-	-	-					-	-	-		_			-	-	-	
Streptomycin			2					7		-																			
Gentamicin		0																_	3										
Neomycin		0															က		7										
Kanamycin		0															-	_	-						-				
Spectinomycin						-										-	ю												
Trimethoprim + sulfonamides	رم د	8	7															_	-							-			
Penicillins											-			-	-						-				-		-	-	
Amoxicillin	2	2	2																	က									

(1): two strains 36 mm, one 38 mm, one 40 mm (2): one strain 36 mm, one 37 mm (3): two strains 36 mm, two 38 mm, one 40 mm

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Table Antimicrobial susceptibility testing of S. Virchow in Meat from pig - carcass - Monitoring - quantitative data [Diffusion method]

	. P ()		36.	1000	4	1			,,,,,,,		,		11.4 = 1.5															
S. Virchow	S. Virchow	ich Ich	<u> </u>	Olates	M M	5 D	e concentration (primi) of 2016 (min) of minibinon equal to			5					edna	2												
	Meat from pig - carca	t fro	m p	ig - (	carc	cass	ss - Monitoring	loni	torir	g																		
Isolates out of a monitoring programme	<b>g</b> yes																											
Number of isolates available in the laboratory	2 ale																											
	2	_		-	-	-	-	z	2	_		-	8	-	-	-	ε	t	-		-	-	o	ı	-	-	_	
Antimicropiais:	<u>z</u> _ z	J o	9	<u>.</u>	8	ا 6	ı	ı	_	ı L	<u>۱</u> –	.L	ı	ı	Z Z	2	7	7	Z _	.Z .Z	7	2	3	3	3:	3	3	
Tetracyclines	1	>								_	-								_									
Amphenicols		-									-	-			-	-			-	-		-			-	-	-	
Chloramphenicol	2	0																-	-									
Florfenicol	2	0				_				_									2		_							
Cephalosporins						-					-				-	-	-			-	-	-			-			
Cefotaxim(4)	2	0				_				_											_					-	-	
Fluoroquinolones																												
Ciprofloxacin(1)	2	0				-				-											-						2	
Enrofloxacin(2)	2	0																									2	
Quinolones																												
Nalidixic acid	2	0				-	_												-		-							
Trimethoprim	7	0																						-	-			
Sulfonamides																												
Sulfonamide	2	0												_			-											
Aminoglycosides																												
Streptomycin	2	0				_				7					-													
Gentamicin	2	0																-	_									
Neomycin	2	0															-	-										
Kanamycin	2	0														-	-											
Spectinomycin	2	0				-	-									-	-											
Trimethoprim + sulfonamides(3)	8	0																									7	
										-	-			1							-					_		
Penicilins	2	_													-				_	-	-	-						
Amoxicillin	7 (	o (		+	+	+	-		1		+	1		+	+	4	4		-		+	4			+	+	1	
Amoxicillin/Clavulanic acid	2	0									_					_					_		7					

(1): one strain 36 mm, one 40 mm (2): both strains 36 mm (3): one strain 36 mm (4): 38 mm

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Table Antimicrobial susceptibility testing of S. Virchow in Meat from turkey - mechanically separated meat (MSM) - Monitoring - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	n) and num	per	of isc	olates	s with	h the	conc	entra	tion (	(Im/In	or zc	ne (n	lo (mr	finhil	bition	ı edu	al to														
	S. Virchow	ģ	>																												
	Meat from turkey - mechanically separated meat (MSM) - Monitoring	ō	ր tu	ırke	- X	me	che	ınic	ally	sek	oara	ateo	l me	eat	(MS	SM)	2	Jon	tori	ng											
Isolates out of a monitoring programme	yes																														
Number of isolates available in the laboratory	<del>-</del>																														
Antimicrobiale	z	ī	9		8	6	0	1	3	7	9	9	_	8	6	0	L	7	ε	<u>9</u>	9	2	8	6	0	ľ	2	ε	Þ	9	
Tetracyclines	1						_	_			_	_	ı	ı	ı	z	_	_	_		_			<u>z</u>	3	3	3	3	3	ε	
Amphenicols																					-		_			_					
Chloramphenicol	1 0						Н					Н			П	П		Н			-	Н									
Florfenicol	1 0										_										1										
Cephalosporins																															
Cefotaxim(3)	1 0																													-	
Fluoroquinolones																															
Ciprofloxacin(1)	0						7		-	-	_	_							+	-	4	4	_						Ì	_	
Enrofloxacin(2)	1 0								-	_	_								-	_	_	_	_							_	
Quinolones																															
Nalidixic acid	1						7		+	-	_							+	1	-	-	_				-					
Trimethoprim	0	_																											_		
Sulfonamides																													,	ľ	
Sulfonamide	1 0								-	_	_	_					-		-	-	_	-	_								
Aminoglycosides																															
Streptomycin	1		$\exists$				7		+	-	_	-						+	+	-	-										
Gentamicin	-0		$\exists$				1		+	-	_							+	+	-	-										
Neomycin	-0		7				7		+	-	_							-	+	-	+										
Kanamycin	1 0																	-											Ì		
Spectinomycin	1 0		$\exists$			$\exists$	$\dashv$	1	+	-	_						7	-	$\dashv$	-	$\dashv$	-									
Trimethoprim + sulfonamides	0	_																											_		
Penicillins																															
Amoxicillin	1																						-								
Amoxicillin/Clavulanic acid	1		$\exists$	$\exists$	$\exists$	$\neg$	$\dashv$	$\dashv$	$\dashv$	4	_	_					$\exists$	-	$\dashv$		-	$\dashv$	_	_	-						

(1): 40 mm (2): 36 mm (3): 38 mm

Table Antimicrobial susceptibility testing of S. Virchow in Meat from pig - meat products - Monitoring - quantitative data [Diffusion method]

	(a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c
Number of resistant isolates	Number of resistant isolates (ii) and number of isolates with the concentration (primit) of minibinon equal to  S. Virchow
	Meat from pig - meat products - Monitoring
Isolates out of a monitoring programme	
Number of isolates available in the laboratory	
Antimicrobiale	Si
Tetracyclines	
Amphenicols	
Chloramphenicol	
Florfenicol	
Cephalosporins	
Cefotaxim(1)	1 0
Fluoroquinolones	
Ciprofloxacin	0 7
Enrofloxacin	1 0
Quinolones	,
Nalidixic acid	
Trimethoprim	7-
Sulfonamides	
Sulfonamide	1 1 1
Aminoglycosides	
Streptomycin	
Gentamicin	
Neomycin	1 1 1
Kanamycin	
Spectinomycin	
Trimethoprim +	
sulfonamides	
Penicillins	
Amoxicillin	-
Amoxicillin/Clavulanic acid	

## Table Antimicrobial susceptibility testing of S. Virchow - qualitative data

n = Number of resistant is	solates					
ii – Nuilibei oli lesistalli is	S. Virchov	N				
	Meat from to mechanical		Meat from	m pig - carcass		om pig - meat s - Monitoring
Isolates out of a	yes		yes		yes	
monitoring programme						
Number of isolates available in the laboratory	1		2		1	
Antimicrobials:	N	n	N	n	N	n
Tetracyclines	1	0	2	0	1	1
Amphenicols	_					
Chloramphenicol	1	0	2	0	1	1
Florfenicol	1	0	2	0	1	1
Cephalosporins						
Cefotaxim	1	0	2	0	1	0
Fluoroquinolones						
Ciprofloxacin	1	0	2	0	1	0
Enrofloxacin	1	0	2	0	1	0
Quinolones						
Nalidixic acid	1	0	2	0	1	1
Trimethoprim	1	0	2	0	1	1
Sulfonamides		'		'	'	'
Sulfonamide	1	0	2	0	1	1
Aminoglycosides	•	•			*	·
Streptomycin	1	0	2	0	1	1
Gentamicin	1	0	2	0	1	1
Neomycin	1	0	2	0	1	1
Kanamycin	1	0	2	0	1	1
Spectinomycin	1	0	2	0	1	1
Trimethoprim + sulfonamides	1	0	2	0	1	1
Penicillins					1	
Amoxicillin	1	0	2	0	1	1
Amoxicillin/Clavulanic acid	1	0	2	0	1	1
Ampicillin	1	0	2	0	1	1

Table Antimicrobial susceptibility testing of S. enterica subsp. arizonae in Turtles - at zoo - Surveillance - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	) and numb	er o	isol	ates	with 1	the co	oncer	ntratio	lu) no	/ml)	ır zon	e (mr	n) of i	nhibit	tion e	qual	٥													
	S. enterica subsp. ari	ricg	3 SU	sqr	D. a	ırizc	zonae	Φ																						
	Turtles - at zoo - Surveillance	- a	t zc	- 00	Su	rve	illar	Jce																						
Isolates out of a monitoring programme	ou																													
Number of isolates available in the laboratory	1																													
Antimicrobials:	u z	9	2	8	6	01	11	12	13	Þl	SI	91	21	81	02	21	22	23	54	52	97	72	82	62	30	32	33	34	32	
Amphenicols		1	1	1	1	-	-							1	1	1	1					1	1	1	1	1	1	1		
Chloramphenicol	1	Н	Н	Н		H							Т	H	Н		L					Ť	_		Н	Н				
Florfenicol	1																									-				
Cephalosporins																														
Cefotaxim(3)	1 0					_									_										_	_			1	
Fluoroquinolones																														
Ciprofloxacin(1)	0		-	-		-	_								-										-				-	
Enrofloxacin	1 0																											-		
Flumequin	1 0	_	_			_																			-					
Quinolones																														
Nalidixic acid																						Ì	_							
Trimethoprim(2)	0																												-	
Sulfonamides																														
Sulfonamide	1 0	_	_			_																	1	_	_					
Aminoglycosides																														
Streptomycin	0												-																	
Gentamicin	0																			-										
Neomycin	1	_	-			-	_		_						-	_								-	_					
Kanamycin		_														_			-											
Spectinomycin	1		-			-									-	-														
Trimethoprim + sulfonamides	0																												-	
Penicillins		-		-		-		-	-				-			-	-	_					-	-		-	-	-		
Amoxicillin	0		_																		-									
Amoxicillin/Clavulanic acid	1					H																		-						
Ampicillin	1	$\dashv$	$\dashv$	$\dashv$	$\dashv$	-	$\dashv$	$\dashv$					$\exists$	$\dashv$	-							_								

Table Antimicrobial susceptibility testing of S. enterica subsp. arizonae in Snakes - zoo animal - at zoo - Surveillance quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	and numb	er of	isol	ates	with t	the co	oncer	ntratio	II) uo	/ml)	r zon	e (mr	n) of i	nhibit	ion e	qual t														
	S. enterica subsp. ari	ice	S SU	sqr	D. a		zonae	Ф																						
	Snakes - zoo animal	- 2	00	ani	ima	ુ - હ	at z	- at zoo -	. Sı	ırve	Surveillance	Jce																		
Isolates out of a monitoring represented programme	ou																													
Number of isolates available in the laboratory																														
Antimicrobials:	u z	9	2	8	6	01	11	12	13	ÞΙ	SI	91	۷۱	81 91	20	12	22	23	24	52	97	72	82	30	31	32	33	34	32	
Amphenicols		1	1	1	1	1	-							ł	ł	1	ļ	ļ			1	1	1	1	1	ł	ļ			
Chloramphenicol	0	Н	Н	Н		Н									Н				-			П			Н					
Florfenicol	0																					_	_							
Cephalosporins																														
Cefotaxim 1	0																							-						
Fluoroquinolones																														
Ciprofloxacin 1	0		-			-	_								-										_			-		
Enrofloxacin 1																				-										
Flumequin 1	0														_										-					
Quinolones																														
Nalidixic acid		-	+	+		-		-					7		-				-											
Trimethoprim	0																				_	_								
Sulfonamides																														
Sulfonamide 1	0		_			_														1			_							
Aminoglycosides														-																
Streptomycin 1											_																			
Gentamicin 1	0																		-											
Neomycin 1			-			-	_								-							_	_		_					
Kanamycin 1																		-												
Spectinomycin 1																-														
Trimethoprim + sulfonamides	0																													
Penicillins		-			-	-		-		_		-		-		-	_				-		-	-	-	-				
Amoxicillin 1	0																		_											
Amoxicillin/Clavulanic acid			H			H															-									
Ampicillin 1	0	$\dashv$	-		$\dashv$	-	=						$\exists$			-														

## Table Antimicrobial susceptibility testing of S. enterica subsp. arizonae - qualitative data

n = Number of resistant is	solates			
	S. enteric	a subsp. arizonae	9	
	Turtles - at z		Snakes - at	Z00
Isolates out of a monitoring programme	no		no	
Number of isolates available in the laboratory	1		1	
Antimicrobials:	N	n	N	ln
Tetracyclines	1	0	1	0
Amphenicols				
Chloramphenicol	1	0	1	0
Florfenicol	1	0	1	0
Cephalosporins	· ·	· · · · · · · · · · · · · · · · · · ·	'	
Cefotaxim	1	0	1	0
Fluoroquinolones				
Ciprofloxacin	1	0	1	0
Enrofloxacin	1	0	1	0
Flumequin	1	0	1	0
Quinolones				
Nalidixic acid	1	0	1	0
Trimethoprim	1	0	1	0
Sulfonamides			'	
Sulfonamide	1	0	1	0
Aminoglycosides				
Streptomycin	1	0	1	0
Gentamicin	1	0	1	0
Neomycin	1	0	1	0
Kanamycin	1	0	1	0
Spectinomycin	1	0	1	0
Trimethoprim +	1	0	1	0
sulfonamides				
Penicillins				
Amoxicillin	1	0	1	0
Amoxicillin/Clavulanic acid	1	0	1	0
Ampicillin	1	0	1	0

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Table Antimicrobial susceptibility testing of S. enterica subsp. diarizonae in Turtles - at zoo - Surveillance - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (ul/ml) or zone (mm) of inhibition equal to	and numb	oer o	f iso	lates	with (	the c	oncer	ntratic	lu) uc	/ml) o	r zone	e (mm	) of in	hibiti	on ec	ual t	١.													1
	S. enterica subsp. d	ri	a St	sqr	0.0	liari	iarizonae	ae	;	,																				
	Turtles - at zoo - Su	- a	t zc	- 00	Su	Ive	rveillance	Jce																						
Isolates out of a monitoring programme	ou																													
Number of isolates available in the laboratory	3																													
	_	-	-	-	-	_	_	-	8	1	9	-	-	_	<b>—</b>	_	7	8	1	9	-	_	_	-	-	7	8	1	9	
iais:		u	9	8 Z	6	1(	1	:1	1:	, L	il	1(	}↓ !↓	16	50	5,	7	5	7,	5	50	.z	56 56	3(	3,	33	33	γε	36	
						-								-								ŀ		-						
Chloramphenicol		+	+	-	+	+	_	4					-	-	_					-		-		-	_					
Florfenicol	3 0																			`	1			1		1				
Cephalosporins																														
	3 0		_			_	_															_							9	
Fluoroquinolones	,					,								,					•											
	3					_																							က	
Enrofloxacin																								-		7				
Flumequin	3 0																							1			1	1		
Quinolones																														
Nalidixic acid																				-	2			_						
Trimethoprim	0																								_	-				
Sulfonamides																														
Sulfonamide	3 0		_			_														`	1	_	_	1		1				
sides																					-									
							2	-																						
Gentamicin																		-	2											
Neomycin			-	-		_	_								_							-		-		-				
Kanamycin															_		-	-	_			-								
Spectinomycin															7		-													
Trimethoprim + sulfonamides(2)	0																											0	_	
						-							-	-								-	-	-						
				+			4							-	_				_	,	_									
Amoxicillin/Clavulanic acid				-			4													Ì	_	7								
Ampicillin	3	$\dashv$	-	$\dashv$	-	$\dashv$	4	4	_			$\exists$	$\dashv$	$\dashv$	_	_					-	-	-	$\dashv$	_					

(1): 36 mm (2): One strain 36 mm (3): All the tree strains 36 mm

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Table Antimicrobial susceptibility testing of S. enterica subsp. diarizonae in Snakes - zoo animal - at zoo - Surveillance - quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	and numbe	r of is	olates	s with	the c	once	ntratio	nd) uc	o (Im/	r zon	e (mn	n) of i	nhibit	ion ec	qual t	0													
	S. enterica subsp.	ca s	sqns		diarizonae	izor	ıae																						
	Snakes - zoo animal	. Z0	o ar	imic		at z	00	Su.	rve	- at zoo - Surveillance	Se																		
Isolates out of a monitoring represent of a programme	OU																												
Number of isolates available $\begin{vmatrix} 2 \end{vmatrix}$ in the laboratory																													
Antimicrobiale		9	_	8	6	0	z	3	Þ	9	9	<u>.</u>	8	0	L	2	ε	Þ	9	9	2	8	0	ľ	2	ε	<b>†</b>	9	
Idio.				1	1	┪	1	7	ı	ı	┪	┪	┪	1	┪	7	7	7	┪	┪	┪	┪	┪	┪	ε	ε	┪	3	- [
Amphenicols	0																			-	_	-							
			T		+	+	+	1				+	+	+	1	1				_		ł	-	+			Ť	T	
																							-						J
ins																													
Cefotaxim(2)	0																				_						1		
Fluoroquinolones																			,			,							
Ciprofloxacin(1)					-	_							_	-														2	
Enrofloxacin 2	0																						-		-				
Flumequin	0				-									_									-		-				
Quinolones																													
Nalidixic acid																			_	_		-							
Trimethoprim 2	0																							-	-				
Sulfonamides																													
Sulfonamide 2	0													_					-	1	_								
Aminoglycosides	-		-													-			-	-		-	-				-	-	
Streptomycin 2	-					-					-																		
Gentamicin																		_	_										
Neomycin 2																					-				-				
Kanamycin 2																	7												
Spectinomycin 2														-		-													
Trimethoprim +	0																										-	2	
sulfonamides																					_								
				+	-	_						-	1	4					-		-	+	4				$\exists$		
Amoxicillin/Clavulanic acid																					-			-					
Ampicillin 2	0			$\dashv$	$\dashv$	$\dashv$	4	_			$\exists$	-	-	_	_				_	_	-	-	4	_					

tracyclin	(1): Both strains 36 mm (2): One strain 36 mm
0	
_	
	ł

## Table Antimicrobial susceptibility testing of S. enterica subsp. diarizonae - qualitative data

n = Number of resistant is	solates			
	S. enterica subs	p. diarizonae		
	Turtles - at zoo - Sui		Snakes - zoo animal	- at zoo - Surveillance
Isolates out of a monitoring programme	no		no	
Number of isolates available in the laboratory	3		2	
Antimicrobials:	N	- In	N	ln .
Tetracyclines	3	0		
Amphenicols				
Chloramphenicol	3	0	2	0
Florfenicol	3	0	2	0
Cephalosporins		1	_	1
Cefotaxim	3	0	2	0
Fluoroquinolones				
Ciprofloxacin	3	0	2	0
Enrofloxacin	3	0	2	0
Flumequin	3	0	2	0
Quinolones	1	-	'	1
Nalidixic acid	3	0	2	0
Trimethoprim	3	0	2	0
Sulfonamides			I.	I
Sulfonamide	3	0	2	0
Aminoglycosides				•
Streptomycin	3	2	2	1
Gentamicin	3	0	2	0
Neomycin	3	0	2	0
Kanamycin	3	0	2	0
Spectinomycin	3	0	2	0
Trimethoprim +	3	0	2	0
sulfonamides				
Penicillins		·	J	1
Amoxicillin	3	0	2	0
Amoxicillin/Clavulanic acid	3	0	2	0
Ampicillin	3	0	2	0

Table Antimicrobial susceptibility testing of S. enterica subsp. salamae in Snakes - zoo animal - at zoo - Surveillance quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the	n) and n	nmbe	r of is	olates	s with		oncer	ntratic	/lrl) uc	o (Im,	r zone	e (mr	) of i	hibit	concentration (µl/ml) or zone (mm) of inhibition equal to	yual to	٥												
	S. enterica subsp.	ıteri	ca s	sqns	sp.	sala	amae	(I)																					
	Snakes - zoo animal	es -	. ZO	o ar	imic	- 1	at zoo	- 00		Surveillance	illan	Se																	
Isolates out of a monitoring programme	0																												
Number of isolates available in the laboratory	2																												
												ŀ			ŀ														
Antimicrobials:	z	u	9		8	6 01	11	15	13	ÞΙ	٩١	91	۵۲ ۲۱	81 61	20	12	22	53	54	 52	97	72 82	50	30	31	32	33	32 34	
Amphenicols																													
Chloramphenicol	2	0																		1 2		-	-	-					
Florfenicol	2	0																	1	1						2	1		
Cephalosporins																													
Cefotaxim(5)	2	0																				_		-		1	2	-	
Fluoroquinolones																												,	
Ciprofloxacin(1)	2	0													_							-				_	-	က	
Enrofloxacin(2)	2	0																							-	-		က	
Flumequin(6)	2	0					_															_		2		1		1	
Quinolones																													
Nalidixic acid	2	0				-								-						2	-		-	-					
Trimethoprim	2	0																				7			-		7		
Sulfonamides																													
Sulfonamide (3)	2	0				_								_		_						-	_	2			-	-	
Aminoglycosides																					-		-	-			-	-	
Streptomycin	2	0				+	-		-			2		1	-														
Gentamicin	2	0																-	_	.,	2								
Neomycin	2	0																					7	-		2			
Kanamycin	2	0																7	2	_									
Spectinomycin	2	0			1	+	+	4				7	$\dashv$	$\dashv$	4	-	7		-	-		+							
Trimethoprim +	2	0																						7		7		-	
suironamides(4)						-	-	_						-	_	_					1	-	-	_	_		1	-	4
Penicillins	-																												
Amoxicillin	2	0				+	4					1		1	4		-	-		7	T		+	_			+	+	
Amoxicillin/Clavulanic acid	2	0		7	1	+	+	4			7	7	+	$\dashv$	4	_	_				-	4						+	
Ampicillin	2	0			$\exists$	$\dashv$	$\dashv$	4				$\exists$	-	+	-	_	-	_		1 2		-	-	4	_		+	4	

Tetracyclin	0	5							
(1): One strain 36 mm, two 40 mm	vo 40 mm								
(2) : All the three strains 36 mm	36 mm								
(3): One strain 38 mm									
(4): One strain 37 mm									
(5): One strain 36 mm									
(6): One strain 36 mm									

## Table Antimicrobial susceptibility testing of S. enterica subsp. salamae - qualitative data

	S. enteric	a subsp. salamae			
	Reptiles - zo	oo animal - at zoo - Sur	veillance Snakes	s - zoo animal - at zoo - S	urveillance
Isolates out of a	no		no		
monitoring programme Number of isolates available in the laboratory	3		5		
Antimicrobials:	N	n	N	n	
Tetracyclines	3	0	5	0	
Amphenicols				-	
Chloramphenicol	3	0	5	0	
Florfenicol	3	0	5	0	
Cephalosporins		'	'		
3rd generation cephalosporins	3	0	5	0	
Cefotaxim	3	0	5	0	
Fluoroquinolones		'	'		
Ciprofloxacin	3	0	5	0	
Enrofloxacin	3	0	5	0	
Flumequin	3	0	5	0	
Quinolones					
Nalidixic acid	3	0	5	0	
Trimethoprim	3	0	5	0	
Sulfonamides			'		
Sulfonamide	3	0	5	0	
Aminoglycosides					
Streptomycin	3	0	5	0	
Gentamicin	3	0	5	0	
Neomycin	3	0	5	0	
Kanamycin	3	0	5	0	
Spectinomycin	3	0	5	0	
Trimethoprim + sulfonamides	3	0	5	0	
Penicillins		•	'	,	
Amoxicillin	3	0	5	0	
Amoxicillin/Clavulanic acid	3	0	5	0	
Ampicillin	3	0	5	0	

Table Antimicrobial susceptibility testing of S. enterica subsp. salamae in Reptiles - zoo animal - at zoo - Surveillance quantitative data [Diffusion method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	and numk	oer of	isola	ıtes w	ith th	le cor	centr	ation	m/lrl)	) or	zone	(mm)	of in	nibitio	וש ed	ual to													
	S. enterica subsp. salamae	rica	ns !	psp	. Se	ılan	Jae																						
	Reptiles - zoo animal	2 - S	200	ani	ma	- 0	- at zoo -			rvei	Surveillance	ce																	
Isolates out of a monitoring PO programme	0																												
Number of isolates available 3 in the laboratory																													
		-	-	_		0		_	-	_	_	_	_	6	(	<u> </u>	7	8	1	_	-	_	_	-	-	7	8	1	<u> </u>
Antimicrobials:	u	9	_	8	6	1(	ıı	١:	:1	71 71	) }	11	31 	31	50	2	7.7	53	77	56	56	22	56 56	33	3.	33	33	3°	36
		-	-										-									-	-	-		-			
Chloramphenicol	0	-									-								_	-	-		-						
Florfenicol	0																		_	_	-								
Cephalosporins	,							,																					
Cefotaxim 3	0		_																			_	-	-	-				
Fluoroquinolones					,			,																					
Ciprofloxacin 3	0		_								-	_	_									-			_		-	-	-
Enrofloxacin 3	0																									ო			
Flumequin 3	0																							1		2			
Quinolones																													
Nalidixic acid	0															-			-	_									
Trimethoprim 3	0																			-	_	_							
Sulfonamides																													
Sulfonamide	0		_												-				-	_									
Aminoglycosides	-	-																	-		-		-	-		-			
Streptomycin	0									-	2																		
Gentamicin	0																-	2											
Neomycin 3	0		4	_	_				1	+	+	+	-	_								-	7						
Kanamycin 3	0															-	2												
Spectinomycin	0		4	_	_	_		7	$\dashv$	$\dashv$	$\dashv$	+	4	_	_	ო									4				
Trimethoprim + sulfonamides	0																						-	_		-			
Penicillins																													
	0	4	_	_	_				+	+	+	4	_				-		-	_		+	+	4	_				
Amoxicillin/Clavulanic acid	0	4	_	_	_				+	+	+	4	_						$\exists$	-	-	+	+	-	_				
Ampicillin 3	0	4	-	_	_				$\dashv$	$\dashv$	-	-	-	_				_	2	$\neg$	$\exists$	$\dashv$	-	-	_				

Table Antimicrobial susceptibility testing of S. Chartres in carcass - Meat from turkey - chilled - in total - Monitoring quantitative data [Diffusion method]

S. Chartres   S. Chartres   S. Chartres   Meat from turkey - carcass - chilled - in total - Monitoring   Meat from turkey - carcass - chilled - in total - Monitoring   Measure available   1	f a monitoring plates available ory ials:  on ns  ns  ns  ns  refers	6Z 8Z 2Z 2Z 2Z 2Z 2Z 2Z 2Z 2Z 2Z 2Z 2Z 2Z 2Z	25
Meat from turkey - carcass - chilled - in total - Monitoring   168   168   169   1	f a monitoring blates available ory sol ials: ns nres ides the monitoring falls in the fall is the fal	6Z 8Z 4Z 9Z 9Z 9Z 7Z 7Z	25 33 46
Canonitoring   Mess available   Mess a	fa monitoring Yes ory lates available 1	1	33
10   10   10   10   10   10   10   10	Jates available 1	10	32 - 33
1	Salar   Sala	1	33
The state of the s	ides		E
1   0   1   1   1   1   1   1   1   1	nns		-
			7-
			-
			1
			-
1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		-	
		-	
1 0 0 1 1 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 0 0 0 0 1 1 0 0 0 0 1 0			-
iic acid 1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
1 0 0 1 1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1			
1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1	
Janic acid 1 0 0 1 1 0 0 1 1 1 1 1 1 1 1 1 1 1 1	-	-	
Clavulanic acid 1 0 1 1			
/Clavulanic acid	Penicillins		
/Clavulanic acid 1 0 1	-		
0	-		
	Ampicillin 1 0	-	

Tetracvolin 1

## Table Antimicrobial susceptibility testing of S. Chartres - qualitative data

n = Number of resistant is	solates	
	S. Chartres	
	Meat from turkey - carcass - chilled - Moni	itorina
Isolates out of a	yes	
monitoring programme		
Number of isolates	1	
available in the		
laboratory		
,		
Antimicrobials:	N	n
Tetracyclines	1	0
Amphenicols	1	'
Chloramphenicol	1	0
Florfenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Enrofloxacin	1	0
Quinolones	7	
Nalidixic acid	1	1
Trimethoprim	1	0
Sulfonamides		·
Sulfonamide	1	0
Aminoglycosides		
Streptomycin	1	0
Gentamicin	1	0
Neomycin	1	0
Kanamycin	1	0
Spectinomycin	1	0
Trimethoprim +	1	0
sulfonamides		
Penicillins		
Amoxicillin	1	0
Amoxicillin/Clavulanic acid	1	0
Ampicillin	1	0

# Table Antimicrobial susceptibility testing of S. enterica subsp. enterica, rough - qualitative data

n = Number of resistant is	solates		
	S. enterica subsp. enteric	a. rough	
	Meat from broilers (Gallus gallu		
Isolates out of a	yes		
monitoring programme			
Number of isolates	3		
available in the			
laboratory			
Antimicrobials:	ĺN .	ln	
	3	0	
Tetracyclines		0	
Amphenicols	12	0	
Chloramphenicol	3		
Florfenicol	3	0	
Cephalosporins	lo.		
Cefotaxim	3	0	
Fluoroquinolones	lo.		
Ciprofloxacin	3	0	
Enrofloxacin	3	0	
Quinolones	lo.		
Nalidixic acid	3	0	
Trimethoprim	3	1	
Sulfonamides			
Sulfonamide	3	0	
Aminoglycosides	_		
Streptomycin	3	0	
Gentamicin	3	0	
Neomycin	3	0	
Kanamycin	3	0	
Spectinomycin	3	0	
Trimethoprim +	3	0	
sulfonamides			
Penicillins	1	'	
Amoxicillin	3	0	
Amoxicillin/Clavulanic	3	0	
Ampicillin	3	0	
, unpionini	-	-	

Table Antimicrobial susceptibility testing of S. enterica subsp. enterica, rough in Meat from broilers (Gallus gallus) -

meat products - Monitoring - quantitative data [Diffusion method]	nitorin	. g	nb.	ant	tita	ti (	<u> </u>	ta .		fus	e data [Diffusion method]	Ē	sp.	ᅙ	<u> </u>	์ ว	<u> </u>	<u>.</u>		<u> </u>	=	5	<u> </u>	5	<u>0</u>	Ž		ີ້ ຄ	Š	6	
Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to	and numk	o Jac	f isol	ates	with	the c	once	ntrati	ou (F	(Im/I	or zo	ne (m	o (mı	inhi	bition	edn	al to														
	S. enterica subsp. enterica, rough	rica	ุ รเ	lsqı	p. 6	ınte	)ric	3, r	gnc	Ч																					
	Meat from broilers (Gallus gallus) - meat products - Monitoring	Om	bro	oile	rs (	Ga	Ilus	ga	Ilus	- (	meg	at p	od	acts	- 1	Aor	itor	ing													
Isolates out of a monitoring programme	yes																														
Number of isolates available in the laboratory	င																														
Antimicrobials:	z	u	9	8	6		11	15	13	14	12	91	2١	81	61	50	12	22	53	54	3e 32	25	28	58	30	31	32	33	34	32	
Tetracyclines	3																			7	-										
nenicol		+	$\dashv$	$\dashv$	+	$\dashv$	+	-	4	4	_					$\exists$	$\exists$	$\dashv$	က				+			_					
	3	-	-	$\dashv$					-										2		_										
rins		-				-	-		-									-			-	-	-	-	-	-					
	3	$\dashv$	-	$\dashv$	$\dashv$	-	$\dashv$	-	$\dashv$		_												_						.,	m	
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(1): one strain 36 mm, one 37 mm (2): both strains 36 mm (3): one strain 37 mm, two 38 mm

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## Table Breakpoints for antibiotic resistance testing of Salmonella in Animals

Test Method Used
Disc diffusion
Agar dilution
Broth dilution
E-test
Standards used for testing
NCCLS

Salmonella	Standard for	Breakpoint	concentration	(microg/ml)		tested	disk content	breakpo	int Zone diam	eter (mm)
	breakpoint	Susceptible <=	Intermediate	Resistant >	lowest	n (microg/ml) highest	microg	Susceptible >=	Intermediate	Resistant <=
Tetracyclines							30	19		14
Amphenicols										
Chloramphenicol							30	18		12
Florfenicol							30	20		16
Fluoroquinolones										
Ciprofloxacin							5	21		15
Enrofloxacin							5	20		16
Flumequin							30	20		16
Quinolones										
Nalidixic acid							30	19		13
Trimethoprim							5	16		10
Sulfonamides										
Sulfonamide							300	17		12
Aminoglycosides										
Streptomycin							10	15		11
Gentamicin							10	15		12
Neomycin							30	17		12
Kanamycin							30	18		13
Spectinomycin							100	18		14
Trimethoprim + sulfonamides							25	16		10
Cephalosporins						,			,	,
Cefotaxim							30	23		14
3rd generation										
cephalosporins										
Penicillins	1						40	47		40
Amoxicillin							10	17		13
Amoxicillin/Clavulanic acid							30	17		13
Ampicillin							10	17		13

## **Footnote**

in some cases instead of a disc a tablet was used for neomycin with brakpoints  $R \le 19$ ,  $S \le 23$  mm

## Table Breakpoints for antibiotic resistance testing of Salmonella in Food

#### Standards used for testing

Salmonella	Standard for	Breakpoint	concentration	(microg/ml)		e tested	disk content	breakpo	int Zone diam	eter (mm)
	breakpoint	Susceptible <=	Intermediate	Resistant >	lowest	on (microg/ml) highest	microg	Susceptible >=	Intermediate	Resistant <=
Tetracyclines							30	19		14
Amphenicols			'							
Chloramphenicol							30	18		12
Florfenicol							30	20		16
Fluoroquinolones										
Ciprofloxacin							5	21		15
Enrofloxacin							5	20		16
Flumequin							30	20		16
Quinolones										
Nalidixic acid							30	19		13
Trimethoprim							5	16		10
Sulfonamides										
Sulfonamide							300	17		12
Aminoglycosides						,				
Streptomycin							10	15		11
Gentamicin							10	15		12
Neomycin							30	17		12
Kanamycin							30	18		13
Spectinomycin							100	18		14
Trimethoprim + sulfonamides							25	16		10
Cephalosporins										
Cefotaxim							30	23		14
3rd generation cephalosporins										
Penicillins						,			,	
Amoxicillin							10	17		13
Amoxicillin/Clavulanic acid							30	17		13
Ampicillin							10	17		13

## **Footnote**

in some cases instead of disc a tablet was used for neomycin with brakpoints R <= 19 mm, S >= 23 mm

## Table Breakpoints for antibiotic resistance testing of Salmonella in Feedingstuff

Test Method Used
Disc diffusion
Agar dilution
Broth dilution
E-test
Standards used for testing
NCCLS

Salmonella	Standard for	Breakpoint	concentration	(microg/ml)		tested	disk content	breakpo	int Zone diam	eter (mm)
	breakpoint	Susceptible <=	Intermediate	Resistant >	lowest	on (microg/ml) highest	microg	Susceptible >=	Intermediate	Resistant <=
Tetracyclines							30	19		14
Amphenicols		,								1
Chloramphenicol							30	18		12
Florfenicol							30	20		16
Fluoroquinolones										
Ciprofloxacin							5	21		15
Enrofloxacin							5	20		16
Flumequin							30	20		16
Quinolones										
Nalidixic acid							30	19		13
Trimethoprim							5	16		10
Sulfonamides										
Sulfonamide							300	17		12
Aminoglycosides										
Streptomycin							10	15		11
Gentamicin							10	15		12
Neomycin							30	17		12
Kanamycin							30	18		13
Spectinomycin							100	18		14
Trimethoprim + sulfonamides							25	16		10
Cephalosporins						,			,	,
Cefotaxim							30	23		14
3rd generation										
cephalosporins										
Penicillins	1						40	47		40
Amoxicillin							10	17		13
Amoxicillin/Clavulanic acid							30	17		13
Ampicillin							10	17		13

## **Footnote**

in some cases instead of disc a tablet was used for neomycin with breakpoints: R < or = 19 mm, S > or = 23 mm

## 2.2. CAMPYLOBACTERIOSIS

#### 2.2.1. General evaluation of the national situation

## A. Thermophilic Campylobacter General evaluation

#### History of the disease and/or infection in the country

In 1986/87 the notification of Campylobacter enteritis started and became obligatory due to Law on Infectious diseases.

The number of notified cases decreased from 2000 to 2003 and increased from 2003 to 2005.

In 2004 number of notifications increased for 19,4% (compared to 2003);

in 2005 number of notifications increased for 2.3 %.

The incidence of infection in 2005 was 54 / 100 000 inhabitants.

No outbreaks were recordered in last years.

The real burden of disease is not known. (The incidence of infections is estimated from data on notifications).

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

In 2004 number of notifications increased for 19,4% (compared to 2003);

in 2005 number of notifications increased for 2,3 %.

The incidence of infection in 2005 was 54 / 100 000 inhabitants.

No outbreaks were recordered in last years.

The real burden of disease is not known. (The incidence of infections is estimated from data on notifications).

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

Poultry and eggs remain potential source of infection.

## 2.2.2. Campylobacter, thermophilic in foodstuffs

## A. Thermophilic Campylobacter in Broiler meat and products thereof

## **Monitoring system**

## Sampling strategy

#### At slaughterhouse and cutting plant

Broiler and turkey meat sampling is carried out in all the registered cutting plants, and bovine and porcine meat sampling in all the cutting plants of industrial type (EU-approved).

A meat sample constitutes an epidemiological unit.

Sampling is carried out by official veterinarians.

#### At retail

#### HIRS

Annual monitoring programme was prepared with respect to the results of programme/controls carried out in the previous year, epidemiological situation, Commission Recommendation concerning a coordinated programme for the official control of foodstuffs.

The majority of samples were taken in cities with 10000 inhabitants or more and number of samples taken was proportional with the population in the region.

There were taken at the retail level where sampling could give an overview over the situation.

Sampling carried out by health inspectors.

Programme: 100 samples of fresh poultry meat per annum.

#### Frequency of the sampling

#### At slaughterhouse and cutting plant

Other: In poultry cutting plants, 1 poultry meat sample per month is taken. According to plan, 70 % of broiler meat, and 30 % of turkey meat are sampled.

#### At retail

Sampling takes place during the months February - August

#### Type of specimen taken

#### At slaughterhouse and cutting plant

Fresh meat

#### At retail

Other: prepacked fresh meat

### Methods of sampling (description of sampling techniques)

#### At slaughterhouse and cutting plant

A meat sample weighing approximately 300 g is removed by a sterile instrument and stored in a sterile bag. In poultry, the thoracic section is removed.

Samples must be delivered to the laboratory in the shortest time possible, and normally, immediately upon sampling. The period of time elapsing from sampling to analysis shall by no means exceed 3 days. Prior to analysis, the sample must be chilled at +4 oC ( $\pm$  2 oC).

#### At retail

#### HIRS

A prepacked fresh meat sample is weighing approximately 300 g. Samples must be delivered to the laboratory in the shortest time possible, and normally, immediately upon sampling. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The transportation must be done not over +4 oC.

## **Definition of positive finding**

#### At slaughterhouse and cutting plant

Positive sample is a sample, where the zoonotic agent has been isolated.

#### At retail

Positive sample is a sample, where Campylobacter has been isolated.

## Diagnostic/analytical methods used

#### At slaughterhouse and cutting plant

Bacteriological method: ISO 10272:1995

#### **Preventive measures in place**

#### GMP, GHP, HACCP

At the moment food business operators introduce the system of additional labelling of poultry meat which includes special warning to the customers to treat poultry meat at requested temperature before any use.

#### Measures in case of the positive findings or single cases

Additional sampling (6 samples) was carried out and other necessary enforcement actions. Since product was no longer on the market at the time of receving analytical results of samples taken at the retail level in all cases in hourse control was required.

#### **Notification system in place**

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation and control results.

HIRS

Whenever zoonotic agent-Campylobacter is detected in samples taken, relevant authorities must be informed.

## Results of the investigation

In 2005, 99 poultry meat samples at cutting plant were taken.

Of 73 poultry/chick meat samples taken, and of 26 turkey meat samples taken, thermophylic campylobacters were isolated from 26 poultry/chick meat samples (35.6 %) and from 1 turkey meat sample (3.9 %). In most cases, C. jejuni was isolated (85.2 %).

HIRS

Monitoring in retail:

Out of 106 samples of poultry meat taken, 44% were positive on presence of thermophylic Campylobacter. Detailed evaluation of data shows that 38% (85% of all positive samples) of them were positive on presence of Campylobacter jejuni.

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

In comparison to the preceding year (production phase), the situation in 2005 got worse as the percentage of positive samples of fresh meat at processing plants increased for almost 16 %.

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

In the light of positive samples, poultry meat is a possible source of human infection, in particular in case of unsatisfactory thermal treatment or inappropriate food handling.

# B. thermophilic Campylobacter spp., unspecified in food - Meat from bovine animals and pig

#### **Monitoring system**

#### Sampling strategy

Bovine and porcine meat sampling is carried out in all the cutting plants of industrial type (EU-approved).

A meat sample constitutes an epidemiological unit.

Sampling is carried out by official veterinarians.

#### Frequency of the sampling

In bovine meat cutting plants, 1 bovine meat sample is taken every 2 months. According to plan, 20 % of veal, and 80 % of meat of animals for fattening are sampled.

In porcine meat cutting plants, 1 porcine meat sample is taken every 2 months. The meat of pigs for fattening is sampled as well.

#### Type of specimen taken

Meat

## Methods of sampling (description of sampling techniques)

A meat sample weighing approximately 300 g is removed by a sterile instrument and stored in a sterile bag. In poultry, the thoracic section is removed.

Samples must be delivered to the laboratory in the shortest time possible, and normally, immediately upon sampling. The period of time elapsing from sampling to analysis shall by no means exceed 3 days. Prior to analysis, the sample must be chilled at +4 oC ( $\pm$  2 oC).

## **Definition of positive finding**

Positive sample is a sample, where the zoonotic agent has been isolated.

#### Diagnostic/analytical methods used

Bacteriological test: ISO 10272: 1995

## Preventive measures in place

GMP, GHP, HACCP

#### **Notification system in place**

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation and control results.

## **Results of the investigation**

In 2005, 101 porcine meat samples were taken, and 109 bovine meat samples. Campylobacter was not isolated from the bovine or porcine meat samples.

# C. Campylobacter spp. in food - Other processed food products and prepared dishes - unspecified

#### **Monitoring system**

Sampling strategy

## Diagnostic/analytical methods used

ISO 10272: 1995

#### **Preventive measures in place**

GMP, GHP, HACCP

## Table Campylobacter in poultry meat

Meat from broilers (Gallus	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for thermophilic Campylobacter spp.	C. coli	C. lari	C. jejuni	C. upsaliensis	thermophilic Campylobacter spp., unspecified
gallus)									1	
fresh	VARS	single		73	26	3		23		
- at cutting plant - Monitoring - official sampling - objective sampling	VARS	Sirigle		73	20	3		23		
Meat from turkey										
fresh	VARS	single		26	1	1				
<ul> <li>at cutting plant -</li> <li>Monitoring - official</li> <li>sampling - objective</li> <li>sampling</li> </ul>	VAICO	Sirigie		20						
Meat from poultry, unspecified										
fresh	LIIDO	_t	05.	400	47	7		40		
chilled (1)	HIRS	single	25g	106	47	7		40		

(1): prepacked

## **Footnote**

Sample: surface 5 cm x 4 cm

## **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
Meat from pig										
fresh - at cutting plant - Monitoring - official sampling - objective sampling	VARS	single		101	0					
Meat from bovine animals										
fresh - at cutting plant - Monitoring - official sampling - objective sampling	VARS	single		109	0					

## **Footnote**

Sample: surface 5 cm x 4 cm

## 2.2.3. Campylobacter, thermophilic in animals

## A. Thermophilic Campylobacter in Gallus gallus

## **Monitoring system**

## Sampling strategy

Sampling is carried out continually throughout the year at all the registered poultry slaughter establishments of industrial type (EU-approved). Sampled are broilers raised in the Republic of Slovenia only.

Slaughter batch of more than 2000 animals constitutes an epidemiological unit, where a slaughter batch means animals originating from a single flock delivered to the slaughter establishment in a single means of transport.

Sampling is carried out by the slaughterhouse official veterinarians.

## Frequency of the sampling

## At slaughter

Other: At slaughter establishments, 1 slaughter batch is sampled twice a week, taking into account that all or most rearing establishments are included in the sampling.

## Type of specimen taken

## At slaughter

Other: Intact caecum

## Methods of sampling (description of sampling techniques)

#### At slaughter

Sampling is uniformly distributed during the slaughter procedure, depending on the slaughter batch. Sampling commences at the first quarter, and ends at the third quarter of slaughtering a slaughter batch. Example of sampling a slaughter batch including 2000 animals: the first animal to be sampled is the one following the 500-th animal slaughtered, and thereafter, each 100-th animal is sampled, and finally, the animal following the 1500-th animal slaughtered is sampled. A final sample must comprise samples taken from 10 animals.

The caecum is removed during evisceration by sterile scissors and stored in a sterile plastic bag. In the laboratory, samples are pooled into a pool sample.

Samples must be delivered to the laboratory in the shortest possible time, and normally, immediately upon sampling, i.e. within the same day. It is recommended that the analyses should commence immediately upon acceptance of samples in the laboratory. The period of time elapsing from sampling to analysis shall by no means exceed 3 days. Prior to analysis, the samples must be chilled at +4 oC ( $\pm$  2 oC) and not exposed to light.

In the laboratory, the caecum shall be opened aseptically and the content pooled

in 1 pool sample.

#### Case definition

#### At slaughter

Positive slaughter batch means a batch, where the zoonotic agent has been isolated from the sample taken.

#### Diagnostic/analytical methods used

## At slaughter

Bacteriological method: Modified on the basis of ISO 10272: 1995

## **Notification system in place**

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation and control results

## **Results of the investigation**

In 2005, the caecum samples from 306 slaughter batches were taken at slaughter establishments. Thermophylic campylobacters were detected in 199 samples/slaughter batches, i.e. in 65 %. C. jejuni was isolated from 132 samples, C. jejuni and C.coli were isolated from 26 samples, and C.coli was isolated from 41 samples.

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

A relatively high percentage of positive slaughter batches detected might lead to an increased meat contamination in case of a less strict observation of the good hygiene practice and internal control requirements in slaughterhouses. Contaminated meat poses a threat to public health.

## **Table Campylobacter in animals**

	Source of information	Sampling unit	Units tested	Total units positive for Campylobacter, thermophilic	C. jejuni	C. coli	C. lari	C. upsaliensis	thermophilic Campylobacter spp., unspecified
Gallus gallus (fowl)									
broilers	\/A.D.G		000	1400	150				
- at slaughterhouse - Monitoring - official sampling - objective sampling (1)	VARS	slaughter batch	306	199	158	41			

<sup>(1):</sup> Intact caeca

## **Footnote**

**Broilers:** 

Units positive for C.jejuni:

158 = 132 C.jejuni + 26 C.jejuni and C.coli

# 2.2.4. Antimicrobial resistance in Campylobacter, thermophilic isolates

## 2.3. LISTERIOSIS

## 2.3.1. General evaluation of the national situation

## A. Listeriosis general evaluation

## History of the disease and/or infection in the country

In last 5 years 0 to 7 human cases annually were notified. In 2005 three human cases were notified.

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

Most patients had meningitis.

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

/

Recent actions taken to control the zoonoses

epidemiological surveillance

Suggestions to the Community for the actions to be taken

no suggestions

#### 2.3.2. Listeria in foodstuffs

## A. L. monocytogenes in food

#### **Monitoring system**

## Sampling strategy

**HIRS** 

Monitoring at retail

Annual monitoring programme was prepared with respect to the results of programme/controls carried out in the previous year, epidemiological situation, Commission Recommendation concerning a coordinated programme for the official control of foodstuffs.

The majority of samples were taken in cities with 10000 inhabitants or more and number of samples taken was proportional with the population in the region.

There were taken at the retail level where sampling could give an overview over the situation.

Sampling carried out by health inspectors.

Programme:

Delicatessen, sweets, cheeses, processed food, vegetables, smoked fish, meat products, minced meat, fruits, Ice-crem..

## Frequency of the sampling

#### At retail

Sampling takes place during the months February - September

#### Methods of sampling (description of sampling techniques)

#### At retail

Sample is weighing 300-500g. It is prepacked or it is taken by a sterile instrument and stored in a sterile bag in a case the sample is not prepacked. Samples must be delivered to the laboratorij in the shortest time possible, and normally, immediatly upon sampling. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The transportation must be done by temperature under +4 oC.

#### **Definition of positive finding**

#### At retail

**HIRS** 

A sample from which Listeria monocytogenes has been isolated.

#### Diagnostic/analytical methods used

#### At retail

Bacteriological method: ISO 11290-1 and 2:1996, 1998

## Preventive measures in place

GMP, GHP, HACCP

## Measures in case of the positive findings

HIRS

Monitoring at retail

Additional sampling was carried out and other necessary enforcement actions.

#### **Notification system in place**

HIRS

Whenever zoonotic agent-Listeria monocytogenes is detected in samples taken, relevant authorities must be informed.

#### **Results of the investigation**

HIRS

At retail:

A total of 1390 samples were taken at restaurant, retail and catering.

Among all samples taken 1 sample of milk (n=10), 1 sample of vegetables (n=20), 3 samples of sweets (n=265), 4 samples of sandwiches (n=40), 4 samples of fruits (n=112), 6 samples of red meat (n=51), 8 samples of delicatessen (n=351) and 41 samples of minced meat (n=101) were unsuitable due to presence of L. monocytogenes.

Out of all 1390 samples taken, 4,8% were positive on presence of L. monocytogenes. The highest prevalence of Listeria monocytogenes was in samples of minced meat 41%.

All samples of ice-cream, ferment sausages, smoked fishes, cheeses, product in oil, pate' and prepacked vegetables were negative.

## Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Definition used	Units tested	=<100 cfu/g	>100 cfu/g	Total units positive for L.monocytogenes	Listeria monocytogenes presence in x g	
Milk, cows'										
raw										
intended for direct human consumption (1)	HIRS	single	25ml	Absence in 25g	10	0	1	2	2	
Cheeses made from cows' milk										
soft and semi-soft	HIRS	single	25g	Absence in 25g	40			0	0	

<sup>(1):</sup> from countryside turism

## Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Definition used	Units tested	=<100 cfu/g	>100 cfu/g	Total units positive for L.monocytogenes	Listeria monocytogenes presence in x g	
Fish										
smoked (1)	HIRS	single	25g	Absence in 25g	20			0	0	
Other processed food products and prepared dishes										
unspecified	HIRS	single	25g	Absence in 25g	403			9	9	
ices and similar frozen desserts	HIRS	single	25g	Absence in 25g	237			0	0	
Sweets	HIRS	single	25g	Absence in 25g	265			3	3	
Sprouted seeds	HIRS	single	25g	Absence in 25g	45			2	2	
Fruits										
pre-cut			1	1				1_		
ready-to-eat	HIRS	single	25g	Absence in 25g	67			2	2	
Fruits and vegetables										
precut		1 - 1 1 -	05	Al	00					
ready-to-eat (2)	HIRS	single	25g	Absence in 25g	60			1	1	
Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) fresh										
chilled (3)	HIRS	single	25g	Absence in 25g	51	6	0	6	6	
minced meat										
intended to be eaten cooked			05	100000000000000000000000000000000000000	404	00	0	4.4	laa l	
chilled (4)	HIRS	single	25g	Absence in 25g	101	32	9	41	41	
meat products	LIDE	cinala	25~	Absence in 25g	54			0	0	
fermented sausages Vegetables	HIRS	single	25g	Absence in 25g	54			0	U	
products (5)	HIRS	single	25g	Absence in 25g	42			0	0	

(1): prepacked(2): prepacked vegetables only(3): prepacked(4): prepacked

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(5): vegetables in oil

## 2.3.3. Listeria in animals

## 2.4. E. COLI INFECTIONS

#### 2.4.1. General evaluation of the national situation

## A. Verotoxigenic Escherichia coli infections general evaluation

## History of the disease and/or infection in the country

Human cases are notifiable by national Law on Infectious Diseases (official Gazette number 68/95).

Medical doctors, laboratories are obliged to notify cases on daily basis to local institutes of public health. Local institutes of public health notify disease to Institute of Public Health of R. Slovenia.

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

The real burden of infection is not known.

According to notifications of real VTEC (laboratory confirmed cases), infection is currently not a problem.

## 2.4.2. Escherichia coli, pathogenic in foodstuffs

## A. Verotoxigenic E. coli (VTEC) in food - Meat from bovine animals

## **Monitoring system**

## Sampling strategy

Bovine meat sampling is carried out in all the registered cutting plants of industrial type (EU-approved). A meat sample constitutes an epidemiological unit. Sampling is carried out by official veterinarians.

**HIRS** 

At retail

Annual monitoring programme was prepared with respect to the results of programme/controls carried out in the previous year, epidemiological situation, Commission Recommendation concerning a coordinated programme for the official control of foodstuffs.

The majority of samples were taken in cities with 10000 inhabitants or more and number of samples taken was proportional with the population in the region.

There were taken at the retail level where sampling could give an overview over the situation.

Sampling carried out by health inspectors.

## Frequency of the sampling

At cutting plants, 1 meat sample is taken every 2 months.

HIRS

Sampling takes place during the months from February to September.

#### Type of specimen taken

Meat

## Methods of sampling (description of sampling techniques)

A meat sample weighing 300-500 g is removed by a sterile instrument and stored in a sterile bag in a case the sample is not prepacked.

Samples must be delivered to the laboratory in the shortest possible time, and normally, immediately upon sampling, i.e. within the same day. During transport, samples must be chilled to +4 oC. Analyses should commence in the shortest possible time after sampling.

#### **Definition of positive finding**

Positive sample means a sample, where the zoonotic agent has been isolated from. Isolation of zoonotic agent in 25g.

#### Diagnostic/analytical methods used

Bacteriological test: ISO 16654: 2001

#### Preventive measures in place

GMP, GHP, HACCP

#### Measures in case of the positive findings or single cases

HIRS

Additional sampling was carried out and other necessary enforcement actions.

#### **Notification system in place**

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation and control results.

HIRS

Whenever zoonotic agent-VTEC is detected in samples taken, relevant authorities must be informed.

## **Results of the investigation**

In 2005, VTEC O:157 was detected in 6 bovine meat samples (5.9 %) of 101 samples taken. HIRS

A total 152 samples (minced meat-101 sample, fresh prepacked red meat-51 sample) were taken at restourants, retail and catering. VTEC was not detected from any sample.

## B. Verotoxigenic E. coli (VTEC) in food - Fruits and vegetables

#### **Monitoring system**

### Sampling strategy

Annual monitoring programme was prepared with respect to the results of programme/controls carried out in the previous year, epidemiological situation, Commission Recommendation concerning a coordinated programme for the official control of foodstuffs.

The majority of samples were taken in cities with 10000 inhabitants or more and number of samples taken was proportional with the population in the region.

There were taken at the retail level where sampling could give an overview over the situation.

Sampling carried out by health inspectors. 112 samples were taken in last year.

By programme: 80 samples of vegetables and 30 samples of cut fruit.

## Frequency of the sampling

Sampling takes place during the months from February to September.

## **Methods of sampling (description of sampling techniques)**

A sample weighing approximately 300 - 500 g is stored in sterile bag in case the sample is not pre-packaged. Samples must be delivered to the laboratory in the shortest time possible, and normally, immediately upon sampling. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The transportation must be done

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not over +4 oC.

## **Definition of positive finding**

A sample from which VTEC has been isolated.

## Diagnostic/analytical methods used

Biological method: ISO 16654:2001 Confirmation VT1 and VT2:RPLA test

## Preventive measures in place

GHP, HACCP

## **Notification system in place**

Whenever zoonotic agent-VTEC is detected in samples taken, relevant authorities must be informed.

## **Results of the investigation**

A total 112 (precut fruits and sprout seeds) samples were taken at restaurants, retail and catering in year 2005. VTEC was not detected from any sample.

## Table VT E.coli in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Escherichia coli, pathogenic	E. coli spp., unspecified	Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC 0157	Verotoxigenic E. coli (VTEC) - VTEC 0157:H7
Meat from bovine animals									
<ul> <li>at cutting plant -</li> <li>Monitoring - official</li> <li>sampling - objective</li> <li>sampling</li> </ul>	VARS	single	25g	101	6			6	
Fruits									
pre-cut									
ready-to-eat	HIRS	single	25g	67	0				
Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) minced meat intended to be eaten cooked	LUDG		las						
chilled (1)	HIRS	single	25g	101	0				
fresh									
chilled (2)	HIRS	single	25g	51	0				
Sprouted seeds									
ready-to-eat	HIRS	single	25g	45	0				

<sup>(1):</sup> prepacked(2): prepacked

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## 2.4.3. Escherichia coli, pathogenic in animals

## A. Verotoxigenic Escherichia coli in cattle (bovine animals)

## **Monitoring system**

## Sampling strategy

Sampling is carried out continually throughout the year at all the registered bovine slaughterhouses. Sampled are animals raised in the Republic of Slovenia only.

One slaughter animal constitutes an epidemiological unit.

Sampling is carried out by the slaughterhouse official veterinarians

## Frequency of the sampling

## Animals at slaughter (herd based approach)

Other: One (1) animal per month - 1 sample is sampled at slaughter establishments.

## Type of specimen taken

#### Animals at slaughter (herd based approach)

Faeces

## Methods of sampling (description of sampling techniques)

#### Animals at slaughter (herd based approach)

Faeces sample is taken prior to slaughter, and after slaughter, following the evisceration, the intestinal wall is aseptically opened and the intestinal content removed from the intestines and stored in a sterile plastic bag.

Samples must be delivered to the laboratory in the shortest possible time, and normally, immediately upon sampling, i.e. within the same day. During transport, samples must be chilled to +4 oC. Analyses should commence in the shortest possible time after sampling.

#### **Case definition**

## Animals at slaughter (herd based approach)

Positive animal means an animal, where a positive sample has been taken from. Positive sample means a sample, where the zoonotic agent has been isolated from.

### Diagnostic/analytical methods used

#### Animals at slaughter (herd based approach)

Bacteriological method: ISO 16654:2001

#### Other preventive measures than vaccination in place

Persons, who in carrying out a registered activity of breeding or production come into direct contact with animals, foodstuffs, raw materials, products or waste, must have thorough knowledge in contagious animal diseases, the prevention thereof and transmissibility to man, and in the regulations governing the protection against contagious diseases.

Animal holders must carry out preventive measures as for instance: providing potable water and feed that are fit for consumption; providing and maintaining the required conditions of hygiene in the animal breeding and auxiliary facilities; preventing the introduction into the breeding facilities of disease agents; implementing veterinary measures in the intensive animal rearing technology; handling as prescribed the animal carcasses and other waste, waste waters, faeces and urine; providing for the preventive disinfection, disinsectisation and deratisation (DDD) in the facilities, on public surfaces and in the means of transport.

#### **Notification system in place**

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation and control results.

## **Results of the investigation**

In 2005, VTEC 0:157 was detected in 12 samples (5.3 %) of 226 samples taken.

Table VT E.coli in animals

	Source of information	Sampling unit	Units tested	Total units positive for Escherichia coli, pathogenic	E. coli spp., unspecified	Verotoxigenic E. coli (VTEC) - VTEC 0157	Verotoxigenic E. coli (VTEC) - VTEC 0157:H7
Cattle (bovine animals)	VARS	animal	226	12		12	
- at slaughterhouse - animal sample - faeces - Monitoring - official sampling - objective sampling	VANO	aniinai	220	12		12	

## 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

Humans

Registry of TBC cases of Slovenia was founded in 1954 and has been functioning since then in Hospital in Golnik.

It is updated regularly. In 1995 it was updated -reorganized according to demands of WHO and Euro TB.

In Slovenia there are no human cases of M. bovis.

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

Since year 2000 the annual incidence of TBC in Slovenia was lower than  $20/100\ 000$  inhabitants.

About 75% of cases are autochtonous, 25% imported.

Imported cases were until recently mostly from Balkan, in last years also from Baltic countries, Chech republic, Slovakia, Romunia, Moldowa etc.

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

Tbc is not relevant as zoonotic disease.

#### 2.5.2. Mycobacterium in animals

#### A. Mycobacterium bovis in Bovine Animals

#### Status as officially free of bovine tuberculosis during the reporting year

#### The entire country free

The request for the recognition of status of the entire country was submitted on October 22nd 2004.

#### **Monitoring system**

#### Sampling strategy

All animals over 6 weeks of age, compulsory post- mortem examination of all bovines at slaughter.

#### Frequency of the sampling

Interval between routine tuberculin test: every two years

#### Methods of sampling (description of sampling techniques)

Intradermal TB testing accordance with Council Directive 64/432/EEC.

#### Diagnostic/analytical methods used

Diagnostic procedures

Mycobacterium bovis shall be confirmed by:

- 1. direct microscopic examination of smears of suspect tissues (Ziehl-Neelsen staining, auramine-rodamine staining),
- 2. detecting the characteristic pathohistological changes in the modified tissues (caseous necroses, epitheloid macrophagues, giant cells),
- 3. immunoperoxidase technique,
- 4. investigation on cell culture:
- a. homogenisation, decontamination and concentration of material under examination, cultivation, and selective cell cultures (Lowenstein/Jensen, Stonebrink, Middlebrook 7H10 or 11, MGIT or Middlebrook 7H12),
- b. cell cultures must be incubated for a minimum of 8 weeks (in the interim, the sediment shall be kept at  $-20^{\circ}$ C),
- c. isolate determination is carried out on the basis of the physical and biochemical characteristics, and on the basis of the characteristics of the nucleic acids,
- d. strain typing is possible by the method of spoligotyping or by the RFLP method,
- 5. detection of the presence of characteristic nucleic acids:
- a. by the PCR method (AMPLICOR, detection IS6110 or 16s rRNA)
- b. by the TMA method (GEN-PROBE).

TB diagnostics in live animals is based on tuberculin tests.

Tuberculin tests must be carried out in accordance with the Regulation No. 1226/2002/EC, which is in compliance with the OIE "Manual of standards for diagnostic

tests and vaccines, 4th edition, 2000".

Under Regulation No. 1226/2002/EC, the maximum number of contaminated animals may also be determined on the basis of the gamma interferon test, as detailed in the OIE "Manual of standards for diagnostic tests and vaccines, 4th edition, 2000".

In the NVI Laboratory of Bacteriology and Mycology, the methods are used that are indicated under items 1, 4a, b, c and 5 above. NVI Lab. is planning to introduce the typing of the M. bovis strains, or to cooperate with the reference laboratories that are carrying it out. At the same time, NVI Lab. intends to follow the new methods in the diagnostics, in particular in the field of confirmation of nucleic acids, and to simultaneously develop new methods on the basis of the quantitative PCR technique.

In 2005, NVI Lab. intends to apply for accreditation.

#### Measures in case of the positive findings or single cases

Measures at suspected presence of TB

When upon a sensitisation test with the bovine tuberculin TB is suspected in animals, the following measures shall apply:

- prohibiting the issuing of animal health certificates,
- listing all suspect animals,
- isolating animals,
- restricting the procreation of animals,
- banning the trade in milk and milk products,
- prohibiting the removal of animal feed,
- prohibiting the removal of manure,
- ordering the compulsory packaging of manure for at least 21 days,
- prohibiting the use of common watering points,
- carrying out tests with the bovine and avian tuberculins at the holding, and repeating the tests upon 6 weeks .

In case of a positive reaction to the repeated test, the animal shall be intended for slaughter, the viscera thereof shall be removed and submitted for investigation to the authorised laboratory.

When at slaughter the presence of TB is suspected in the bovine animals, the modified viscera shall be submitted for investigation to the authorised laboratory. The meat of slaughtered animals shall be assessed by the official veterinarian as unfit for human consumption, when changes are identified on several organs or parts of carcass, when increased temperature has been established in the animal prior to slaughter, and when upon slaughter TB-characteristic changes have been established. When TB-characteristic changes are localised on some organs or parts of carcass and pertaining lymph nodes, only the affected parts of carcass or organs with the pertaining lymph nodes shall be considered unfit for human consumption.

Measures at confirmed presence of TB:

Epizootiological investigation shall be carried out.

The following measures shall apply at the holding, where TB has been detected:

- slaughter of contaminated bovine animals at least within 30 days upon detection,
- cleaning and disinfection of stables, farmyard, watering points and other places, where the suspect or diseased animals have been kept, as well as of items and installations that have been in contact with such animals.
- other measures to sanitise the holding.

The official veterinarian at the slaughterhouse shall enter the data on the slaughtered animal in the CRBA, cancelling it from the register.

#### Cessation of disease:

It shall be considered that the disease has ceased, when all the measures required have been carried out, and when the next simultaneous tuberculin test upon at least 6 weeks has shown negative results in all animals at the holding.

The expenses for diagnostic testing are covered from the budget as well as compensation for culled animals (Rules on the compensations in the veterinary field - Ur. l. RS. st. 37/02). Other expenses for the sanitation of the herd are on the owner of the animals.

#### **Notification system in place**

Veterinary Practice Act (Ur. 1. RS, st. 33/01, 45/04) provides a general classification of the contagious animal diseases, in relation to which the general and specific preventive measures need to be implemented, and other measures prescribed in the Act, into the Groups A, B and C, in accordance with the OIE International Animal Health Code, and in accordance with the relevant epizootiological situation.

The classification is detailed in the Rules on the contagious animal diseases (Ur. l. RS, st. 54/02, 63/03 in 28/04), where TB is classified among the compulsorily notifiable animal diseases.

In the case of an outbreak of contagious animal disease or when signs of disease have been established, constituting reasonable doubt that an animal has taken ill with or died of a contagious disease, the holder of the animal in question must immediately and in the prescribed way notify thereof the veterinary organisation (Veterinary Practice Act, Article 12, point 1).

In the case of a suspected presence of TB, the relevant veterinary organisation shall notify thereof the Regional Office of the VARS, which shall perform all the necessary measures to prevent the possible spread of the disease.

A report on the outbreak of disease shall be prepared once a month by the tenth day in the month, for the past month and sent to the VARS HQ.

In the case of a zoonosis, the official veterinarian shall notify of the suspected presence of disease also the competent public health services.

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

Region	Total nu existing	Total number of existing bovine	Total number of Officially existing bovine herds	free	Infected	herds	Infected herds Routine tuberculin testing	uberculin ng	Number of tuberculin tests carried out before the introduction	Number of animals with suspicious lesions of tuberculosis	Number of animals with suspicious detected positive lesions of in bacteriological tuberculosis examination
	Herds	Animals	Animals Number % of herds		Number % of herds		Interval Numbe between of routine animal tuberculin tested tests	Number of animals tested	into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/432/EEC)	examined and submitted to histopathological and bacteriological examinations	
SLOVENIJA	44123	478511	44122		1						1
Total	44123	478511	44122 0		-	0	0	0			-

officially free herds: 99,998% infected herds: 0,002%

Interval between routine tuberculin tests: c

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#### 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

Human cases of brucellosis are notifiable by National law on infectious diseases (Official Gazette number 68/1995).

Medical doctors, laboratories are obliged to notify cases on daily basis to local institutes of public health. Local institutes of public health notify disease to Institute of Public Health of R. Slovenia

Brucellosis in Slovenia is notyfiable for more than 50 years.

Human infections were generally alimentary and between 1945 and

1954 549 cases were registered in littoral Slovenia (Slovensko Primorje) alone.

Brucelosis in bovine animals was eradicated in 1961. The disease in goat has been eradicated already in 1955.

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

Human brucellosis has been not considered as epidemiological problem for a long time. The danger of reimportation of disease still exists.

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

Source of infection was in most cases milk, cheese, and milk products.

#### Recent actions taken to control the zoonoses

Epidemiological and laboratory investigation of all suspected cases.

#### Suggestions to the Community for the actions to be taken

None

#### 2.6.2. Brucella in foodstuffs

#### 2.6.3. Brucella in animals

#### A. Brucella abortus in Bovine Animals

#### **Monitoring system**

#### Sampling strategy

All animals over 12 months of age.

#### Frequency of the sampling

Yearly

#### Type of specimen taken

Blood

#### **Vaccination policy**

Vaccination prohibited

#### Measures in case of the positive findings or single cases

Instructions on the detection, prevention and eradication of brucellosis (Ur. l. RS, st. 30/99) Measures at suspected presence of brucellosis

At suspected presence of brucellosis, the authorised veterinary organisation shall immediately confirm or reverse the suspicion, and immediately notify thereof the relevant Regional Office of the VARS, and the NVI. Measures to be implemented at suspect holding include:

- laboratory examination of carcasses and blood samples;
- epidemilogical investigation;
- harmless diaposal of dead animals
- quarantine of the infected holding
- census of all animals on the holding, susceptible for the disease, affected, suspected to be infected and dead; census shall be up to date, all newborn animals, and animals died during the infection have to be registered;
- isolation of animals susceptible for the disease,
- ban on movement of susuceptible animals inside the holding, taking into account possible vectors of the disease;
- ban on movement on and from the holding;
- ban on movement of all animals and stuff by which the disease can be transmitted;

The same measures can be introduced also for the holdings, which are suspected to be infected. Measures at confirmed presence of brucellosis

Once brucellosis is officially confirmed the following measures are introduced (beside the above mentioned):

- ban on trade with animals, animal products, b-products, waste, feeding stuff and all other stuff by which the disease can be transmitted;
- slaughter of infected acattle;

- harmless disposal of dead and culled animals, aborted foetuses, placentas and ovarial fluids;
- hrmless disposal of waste, manure, litter, by which the disease can be transmitted;
- testing of all susceptible animals on the holding;
- ban on use of milk from the infected holding;
- ban on use of animals from the infected holding in breeding purposes;
- DDD:

The same measures can be introduced also for the holdings, which are suspected to be infected. Cessation of disease

It shall be considered that the disease has ceased, when the serological investigation of animals upon three examinations in an interval of 3 months has shown negative results, and when all the prescribed measures have been implemented.

Procedures applicable to the fresh meat and viscera

The meat and viscera of seropositive or suspect animals shall not be fit for human consumption, when pathoanatomical changes have established and the agent of disease has been confirmed. When pathoanatomical changes have not been established and the agent of disease has not been confirmed, the udder, blood and genital organs shall not be fit for human consumption.

#### **Notification system in place**

In 1995, bovine brucellosis was classified among the contagious diseases under the then applicable Veterinary Practice Act, prescribing the implementation of the general and specific measures. These measures included also the compulsory notification in case of a suspected presence of brucellosis.

The new Veterinary Practice Act (Ur. 1. RS, st. 33/01, 45/04) provides a general classification of the contagious animal diseases, in relation to which the general and specific preventive measures need to be implemented, and other measures prescribed in the Act, into the Groups A, B and C, in accordance with the OIE International Animal Health Code, and in accordance with the relevant epizootiological situation.

The classification is detailed in the Rules on the contagious animal diseases (Ur. 1. RS, st. 54/02, 63/03 in 28/04), where bovine brucellosis is classified among the compulsorily notifiable contagious animal diseases. In case of an outbreak of contagious animal disease or when signs of disease have been established, constituting reasonable doubt that an animal has taken ill with or died of a contagious disease, the holder of the animal in question must immediately and in the prescribed way notify thereof the veterinary organisation (Veterinary Practice Act, Article 12, point 1).

In case of a suspected presence of bovine brucellosis, the relevant veterinary organisation shall notify thereof the Regional Office of the VARS only when the disease has been confirmed by the result of diagnostic investigation. A report on the outbreak of disease shall be prepared once a month by the tenth day in the month, for the past month.

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

Brucelosis was eradicated in 1961.

#### **B.** Brucella melitensis in Goat

Status as officially free of caprine brucellosis during the reporting year

The entire country free

Brucelosis was eradicated in 1961.

#### **Monitoring system**

#### Sampling strategy

All holdings with more than 10 animals, animals older than 6 months, random sampling; the sampling plan is a part of a regular monitoring system.

#### Type of specimen taken

Blood

#### Diagnostic/analytical methods used

- Rose Bengal test screening test
- Complement fixation test confirmatory test

#### **Vaccination policy**

Vaccination forbidden

#### Measures in case of the positive findings or single cases

Measures at suspected presence of brucellosis

At suspected presence of brucellosis, the authorised veterinary organisation shall immediately confirm or reverse the suspicion, and immediately notify thereof the relevant Regional Office of the VARS, and the NVI. Measures to be implemented at suspect holding include:

- laboratory examination of carcasses and blood samples;
- epidemilogical investigation;
- harmless diaposal of dead animals;
- quarantine of the infected holding
- census of all animals on the holding, susceptible for the disease, affected, suspected to be infected and dead; census shall be up to date, all newborn animals, and animals died during the infection have to be registered;
- isolation of animals susceptible for the disease,
- ban on movement of susuceptible animals inside the holding, taking into account possible vectors of the disease:
- ban on movement on and from the holding;
- ban on movement of all animals and stuff by which the disease can be transmitted;

The same measures can be introduced also for the holdings, which are suspected to be infected. Measures at confirmed presence of brucellosis

Once brucellosis is officially confirmed the following measures are introduced (beside the above mentioned):

- ban on trade with animals, animal products, b-products, waste, feeding stuff and all other stuff by which the disease can be transmitted;
- slaughter of infected acattle;
- harmless disposal of dead and culled animals, aborted foetuses, placentas and ovarial fluids;
- hrmless disposal of waste, manure, litter, by which the disease can be transmitted;
- testing of all susceptible animals on the holding;

- ban on use of milk from the infected holding;
- ban on use of animals from the infected holding in breeding purposes;
- DDD:

The same measures can be introduced also for the holdings, which are suspected to be infected. Cessation of disease

It shall be considered that the disease has ceased, when the serological investigation of animals upon three examinations in an interval of 3 months has shown negative results, and when all the prescribed measures have been implemented.

Procedures applicable to the fresh meat and viscera

The meat and viscera of seropositive or suspect animals shall not be fit for human consumption, when pathoanatomical changes have established and the agent of disease has been confirmed.

When pathoanatomical changes have not been established and the agent of disease has not been confirmed, the udder, blood and genital organs shall not be fit for human consumption.

#### **Notification system in place**

The Veterinary Practice Act (UL RS 33/01 and 45/04) provides a general classification of the contagious animal diseases, in relation to which the general and specific preventive measures need to be implemented, and other measures prescribed in the Act, into the Groups A, B and C, in accordance with the OIE International Animal Health Code, and in accordance with the relevant epizootiological situation.

The classification is detailed in the Rules on the contagious animal diseases (UL RS 54/02, 63/03 and 28/04), where brucellosis in ovine and caprine animals is classified among the compulsorily notifiable contagious animal diseases. In the case of an outbreak of contagious animal disease or when signs of disease have been established, constituting reasonable doubt that an animal has taken ill with or died of a contagious disease, the holder of the animal in question must immediately and in the prescribed way notify thereof the veterinary organisation (Veterinary Practice Act, Article 12, point 1).

In the case of a suspected presence of brucellosis, the relevant veterinary organisation shall notify thereof the Regional Office of the VARS, which shall perform all the necessary measures to prevent the possible spread of the disease.

A report on the outbreak of disease shall be prepared once a month by the tenth day in the month, for the past month.

In the case of zoonosis, the official veterinarian shall notify of the suspected presence of disease also the competent public health services.

#### Additional information

The diesease has been eradicated already in 1955. Ever since the compulsory monitoring programme has been in place.

Accdording to EU legislation the request for recognition of OF status of the country was submitted in autumn 2004.

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

Region	To	Total mber of	Total Officially umber of free herds	ially	Infected herds	ted		•	Surveillance	lance				드	Investigations of suspect cases	ations	of su	spect	cases		
	exis bov	existing bovine					Serolo	gical t	ests	Examination of Informatio	nation ilk sar	of nples	Inform abortic	Serological tests   Examination of   Information about   Epidemiological investigation   bulk milk samples   abortions	bout	:piden	iologi	cal in	/estiga	ıtion	
	Herds	Animals Number of herds	Number of herds	%	Number of herds	%	Number of bovine	Number of Number of animals infected	Number of infected	Number of bovine	Number of Number of animals infected	Number of infected	Number of Innotified in	Number of Number	umber of N bortions	umber of N	lumber of uspended	Number of po animals	positive als	Number of Number of animals	Number of animals
						1	herds	tested	herds tested	herds tested	or pools tested	herds	abortions cause	abortions of Brucella due to tested with whatever infection Brucella serological cause abortus blood tests	due to te Brucella se abortus bl		herds Se	Serologically	BST	examined microbio logically	positive microbio logically
SLOVENIJA	44123	478511 44123		100	0 0		42528	314520 (	0		-	149 0	0			2	0	0	_	3	8
Total	44123	478511	44123	100	0		42528	314520	0	0		149 0	0	0	0	2	0		_		80

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

Region	Total nu existing cap	Total number of existing ovine / caprine	Officia heı	lly free rds	Infected herds	d herds	Ō	Surveillance	Φ.	ln.	Investigations of suspect cases	ns of sus	pect case	S
	Herds	Animals	Animals Number of herds	%	Number of animals	<del>-</del>	Number of herds tested	Number of herds Number of tested animals tested	Number of infected herds		Number of number of animals tested animals positive with serological serologically blood tests	Number of animals examined microbio logically	Number of animals positive microbio logically	Number of Number of animals positive suspended herds microbio logically
SLOVENIJA	8563	143966	8563	100	0	0	2992	32930	0	0	0	0	0	0
Total	8563	143966	8563	100	0	0	2992	32930	0	0	0	0	0	0

#### 2.7. YERSINIOSIS

#### 2.7.1. General evaluation of the national situation

#### A. Yersinia enterocolitica general evaluation

#### History of the disease and/or infection in the country

Yersiniosis is rarely reported in Slovenia.

The average number of yearly notifications in last five years was 52 or average incidence, based on notifications, was cca 2,6/100 000 inhabitants.

From 1990 to 1999 the number of yearly notifications were low as well, except in 1995, the number of notifications increased to 1092 or incidence, based on notifications, was cca 54/100 000 inhabitants

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

Yersinia enterocolitica is notifiable by national Law on Infectious diseases. Medical doctors notify cases on daily basis to local institutes of public health. Local institutes of public health notify disease to Institute of Public Health of R. Slovenia. Notification since 1977.

### 2.7.2. Yersinia in foodstuffs

### 2.7.3. 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

Human cases are notifiable by National Law on Infectious Diseases (official Gazette number 68/1995).

Medical doctors are obliged to notify cases on daily basis to local institutes of public health. Local institutes of public health notify disease to Institute of Public Health of R. Slovenia. Notification since 1977.

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

Trichinellosis is a rare human disease in Slovenia. No one case was notified in 2004 and 05.

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

Trichinellosis is a rare zoonosis in Slovenia.

No human cases were recorded in last years, also 2005.

Most of sporadic cases in last 20 years were infected because of ingestion of imported meat.

#### 2.8.2. Trichinella in animals

### A. Trichinella in pigs

#### **Monitoring system**

#### Sampling strategy

#### General

The disease, or the larval stage of the agent of disease, is monitored within the scope of compulsory veterinary ante- and post-mortem examination of animals at slaughter.

Fresh meat of all porcine animals is systematically inspected for Trichinella at slaughterhouses. Likewise, any holder of a tourist farm activity must provide for the inspection of meat obtained from the on-farm slaughtered porcine animals for the presence of larvae. Epidemiological unit is the animal.

#### Frequency of the sampling

#### General

All porcine animals slaughtered are subjected to inspection - either at registered slaughterhouses or at tourist farms.

#### Type of specimen taken

#### General

In meat inspection accordance with Council Directive 77/96/EEC: Annex I: Trichinoscopy - the compression method, the artificial digestion method; samples are taken from the diaphragm, from the lingual muscle or the jaw muscle or from the abdominal muscles, as appropriate.

#### **Methods of sampling (description of sampling techniques)**

#### General

The methods used in meat inspection are laid down in Council Directives 91/497/EEC and 77/96/EEC.

#### **Case definition**

#### General

The disease shall be considered officially confirmed by identifying the agent of disease; in the opposite case it shall be considered that the disease has officially been ruled out.

Positive animal - animal where Trichinella spp. has been detected.

#### Diagnostic/analytical methods used

#### General

Methods specified and described on Council Directives 64/433 EEC and 77/96/EEC:

- the magnetic stirrer method for pooled sample digestion
- trichinoscopic examination

#### Preventive measures in place

Persons, who in carrying out a registered activity of breeding or production come into direct contact with animals, foodstuffs, raw materials, products or waste, must have thorough knowledge in contagious animal diseases, the prevention thereof and transmissibility to man, and in the regulations governing the protection against contagious diseases.

Animal holders must carry out preventive measures as for instance: providing potable water and feed that are fit for consumption; providing and maintaining the required conditions of hygiene in the animal breeding and auxiliary facilities; preventing the introduction into the breeding facilities of disease agents; implementing veterinary measures in the intensive animal rearing technology; handling as prescribed the animal carcasses and other waste, waste waters, faeces and urine; providing for the preventive disinfection, disinsectisation and deratisation (DDD) in the facilities, on public surfaces and in the means of transport.

#### Control program/mechanisms

#### The control program/strategies in place

National control programme is carried out in accordance with the national legislation, on the basis of the Rules on examination for trichinae and meat freezing procedure in order to destroy trichinae (transposing Council Directive 77/96/EEC), the Rules on conditions for production and processing the foodstuffs of animal origin at the farm for direct sale to the ultimate consumer, and the Instructions on measures for the detection, prevention and suppression of trichinellosis. The control programme envisages inter alia as follows:

Holder of a tourist farm activity shall at least 48 hours prior to slaughtering porcine animals notify an official veterinarian of the relevant Regional Office of VARS, who shall carry out the ante-mortem examination of animals prior to slaughter and a post-mortem examination of the meat upon slaughter. Holder of activity shall provide for the examination of porcine meat for the presence of trichinae.

Where the meat is intended for placing on the market it shall be ensured that the fresh meat, in case it has not been examined for trichinae in accordance with Annex I to Directive 77/96/EEC, is subjected to freezing process.

In case of a suspected presence of disease, the disease shall be confirmed or ruled out. Measures for the detection, prevention and suppression of disease.

#### Measures in case of the positive findings or single cases

At the infected holding there shall be:

- instituted an epizootiological investigation;
- provided and maintained the required conditions of hygiene in the facilities;
- banned the trade in and movements of animals, except for slaughter and provided that the health certificate includes an indication that the holding is suspected of being infected by trichinellosis;

- provided that the meat and parts of trichinae-infested animals do not come into contact with humans and animals, and shall be harmlessly destroyed;
- instituted the compulsory examination for trichinae of all on-farm slaughtered animals;
- carried out the DDD and other measures in order to sanitise the infected holding.

Measures shall be instituted at the infected holding as long as the final DDD measures have not been carried out.

Meat of the trichinae-infested animals shall be assessed as unfit for human consumption.

#### **Notification system in place**

In case of disease, the veterinary organisation must notify the Regional Office of VARS, within the area of which the disease has been diagnosed. The report on the occurrence of disease is to be submitted on a monthly basis by the tenth day in a month for the previous month.

The authorised laboratory submits the diagnostic test results to the relevant Regional Office of VARS, and to the consigner of samples.

Once a month and no later than the 20th day in the month, the authorised laboratories and Regional Offices of VARS must report on the diagnostic test results to the Office for Contagious Animal Diseases within VARS.

The Main Office of VARS collects the results of ante- and post-mortem examinations conducted by the official veterinarians, and applies them in relation to the diagnoses of diseases communicable to man.

Where a case of disease is established, the data on the case are reported as soon as possible to the veterinary organisation, duly licensed in accordance with the act governing the veterinary sector, which is supervising the herd of origin of the affected animal.

This method of reporting is carried out in accordance with the provisions of the Rules on contagious animal diseases (applicable since 2002), and the reporting as such has been compulsory since 1996.

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

In 2005, no case of trichinellosis in porcine animals was confirmed.

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

The last case of trichinellosis was confirmed in 1989. According to data, the positive animal was not of Slovenian origin.

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

In Slovenia, taking into account the findings in porcine animals, the possibility of transmission of the disease to humans is negligible.

#### **B.** Trichinella in horses

#### **Monitoring system**

Sampling strategy

The disease, or the larval stage of the agent of disease, is monitored within the scope of compulsory veterinary ante- and post-mortem examination of animals at slaughter. Systematic examinations for trichinae of the fresh meat of equidae are carried out at slaughterhouses. Epidemiological unit is the animal.

#### Frequency of the sampling

Examination is carried out on all equidae slaughtered at the registered slaughterhouses.

#### Type of specimen taken

In meat inspection accordance with Council Directive 77/96/EEC: Annex I: Trichinoscopy - the compression method, the artificial digestion method; samples are taken from the diaphragm, from the lingual muscle or the jaw muscle or from the abdominal muscles, as appropriate.

#### **Methods of sampling (description of sampling techniques)**

The methods used in meat inspection are laid down in Council Directives 91/497/EEC and 77/96/EEC.

#### Case definition

The disease shall be considered officially confirmed by identifying the agent of disease; in the opposite case it shall be considered that the disease has officially been ruled out. Positive animal - animal where Trichinella spp. has been detected.

#### Diagnostic/analytical methods used

Methods specified and described on Council Directives 64/433 EEC and 77/96/EEC:

- the magnetic stirrer method for pooled sample digestion
- trichinoscopic examination

#### Results of the investigation including the origin of the positive animals

In 2005, no case of trichinellosis in equidae was confirmed

#### **Control program/mechanisms**

#### The control program/strategies in place

National control programme is carried out in accordance with the national legislation, on the basis of the Rules on examination for trichinae and meat freezing procedure in order to destroy trichinae (transposing Council Directive 77/96/EEC), the Rules on conditions for production and processing the foodstuffs of animal origin at the farm for direct sale to the ultimate consumer, and the Instructions on measures for the detection, prevention and suppression of trichinellosis. The control programme envisages inter alia as follows:

Holder of a tourist farm activity shall at least 48 hours prior to slaughtering porcine animals notify an official veterinarian of the relevant Regional Office of VARS, who shall carry out the ante-mortem examination of animals prior to slaughter and a post-mortem examination of the meat upon slaughter. Holder of activity shall provide for

the examination of porcine meat for the presence of trichinae.

Where the meat is intended for placing on the market it shall be ensured that the fresh meat, in case it has not been examined for trichinae in accordance with Annex I to Directive 77/96/EEC, is subjected to freezing process.

In case of a suspected presence of disease, the disease shall be confirmed or ruled out.

Measures for the detection, prevention and suppression of disease.

#### Measures in case of the positive findings or single cases

At the infected holding there shall be:

- instituted an epizootiological investigation;
- provided and maintained the required conditions of hygiene in the facilities;
- banned the trade in and movements of animals, except for slaughter and provided that the health certificate includes an indication that the holding is suspected of being infected by trichinellosis:
- provided that the meat and parts of trichinae-infested animals do not come into contact with humans and animals, and shall be harmlessly destroyed;
- instituted the compulsory examination for trichinae of all on-farm slaughtered animals;
- carried out the DDD and other measures in order to sanitise the infected holding.

Measures shall be instituted at the infected holding as long as the final DDD measures have not been carried out.

Meat of the trichinae-infested animals shall be assessed as unfit for human consumption.

#### **Notification system in place**

In case of disease, the veterinary organisation must notify the Regional Office of VARS, within the area of which the disease has been diagnosed. The report on the occurrence of disease is to be submitted on a monthly basis by the tenth day in a month for the previous month.

The authorised laboratory submits the diagnostic test results to the relevant Regional Office of VARS, and to the consigner of samples.

Once a month and no later than the 20th day in the month, the authorised laboratories and Regional Offices of VARS must report on the diagnostic test results to the Office for Contagious Animal Diseases within VARS.

The Main Office of VARS collects the results of ante- and post-mortem examinations conducted by the official veterinarians, and applies them in relation to the diagnoses of diseases communicable to man.

Where a case of disease is established, the data on the case are reported as soon as possible to the veterinary organisation, duly licensed in accordance with the act governing the veterinary sector, which is supervising the herd of origin of the affected animal.

This method of reporting is carried out in accordance with the provisions of the Rules on contagious animal diseases (applicable since 2002), and the reporting as such has been compulsory since 1996.

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

In the past 16 years in Slovenia, no case of trichinellosis in equidae has been confirmed.

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

In Slovenia, taking into account the findings in equidae, the possibility of transmission of the disease to humans is negligible.

### C. Trichinella spp., unspecified in animal - Wild animals

#### **Monitoring system**

#### Sampling strategy

The disease, or the larval stage of the agent of disease, is monitored within the scope of compulsory veterinary post-mortem examination of killed wild game.

#### Frequency of the sampling

Compulsory is the examination of wild boars and other animals, which may be carriers of trichinae and the meat whereof is intended for public consumption.

#### Type of specimen taken

In meat inspection accordance with Council Directive 77/96/EEC: Annex I: samples are taken from the diaphragm, from the lingual muscle or the jaw muscle or from the abdominal muscles, as appropriate.

#### **Methods of sampling (description of sampling techniques)**

The methods used in meat inspection are laid down in Council Directive 77/96/EEC.

#### Case definition

The disease shall be considered officially confirmed by identifying the agent of disease; in the opposite case it shall be considered that the disease has officially been ruled out. Positive animal - animal where Trichinella spp. has been detected.

#### Diagnostic/analytical methods used

Methods specified and described in 77/96/EEC:

- the magnetic stirrer method for pooled sample digestion
- trichinoscopic examination

#### Control program/mechanisms

#### The control program/strategies in place

National control programme is carried out in accordance with the national legislation, on the basis of the Rules on examination for trichinae and meat freezing procedure in order to destroy trichinae (transposing Council Directive 77/96/EEC), and the Rules on conditions for the collection of killed wild game, veterinary inspection, production of meat and placing on the market of the meat of killed wild game. The control programme envisages inter alia as follows:

Wild game or wild game meat may be placed on the market only after the killed animals have visually been inspected by the official veterinarian and where the meat has been obtained from wild game that has been subjected to a post-mortem examination

(compulsory examination for trichinae) carried out by an official veterinarian, or by a hunter acting as the veterinary auxiliary and supervised by the official veterinarian. In case of a suspected presence of disease, the disease shall be confirmed or ruled out. VARS shall monitor the possible detection of contagious diseases in the individual hunting grounds. In case of detecting a contagious disease, measures appropriate to the type of disease shall be taken.

#### Measures in case of the positive findings or single cases

Meat of the trichinae-infested animals shall be assessed as unfit for human consumption.

#### **Notification system in place**

Where a zoonosis is detected in wild game, the official veterinarian must notify thereof the relevant Regional Office of VARS that is supervising the hunting ground of killing the particular wild animal, and that Regional Office must take the appropriate measures as prescribed.

#### Results of the investigation including the origin of the positive animals

In 2005, no case of trichinellosis in wiled animals was confirmed.

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

The last case of trichinellosis prior to 2004 was confirmed in a wild boar in 1996. According to data, the positive animal was not of Slovenian origin.

In 1998, a single positive case was detected in a wild animal. No positive cases were detected in the period 1999-2003. In 2004, trichinellosis was detected in a single animal.

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

In Slovenia, taking into account the findings in animals, the possibility of transmission of the disease to humans is negligible.

### **Table Trichinella in animals**

	Source of information	Sampling unit	Units tested	Total animals positive for Trichinella	T. spiralis	Trichinella spp., unspecified
Pigs	VARS	animal	421175	0		
Solipeds, domestic						
horses	VARS	animal	1651	0		
Wild boars						
wild	VARS	animal	1421	0		
Bears	VARS	animal	37	0		

### 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

According to notifications it is a rare disease in Slovenia.

From 1990 to 2005 from 0 to 8 cases yearly have been reported.

Most of cases in last years were imported from Balkan countries.

Animals

Hydatid cysts are detected from time to time by the compulsory ante- and post-mortem examinations at slaughterhouses.

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

A rare zoonosis. Infections are mostly imported.

#### 2.9.2. Echinococcus in animals

### A. Echinococcus spp., unspecified in animal

#### **Monitoring system**

#### Sampling strategy

Monitored are all slaughter animals and wild game intended for human consumption, and examined by the official veterinarians at slaughterhouses or wild game processing houses within the scope of the compulsory veterinary ante- and/or post-mortem examination.

#### Frequency of the sampling

Post-mortem examination of all animals and/or meat and organs upon slaughter or killing.

#### Type of specimen taken

Other: Visual examination of the slaughtered/killed animal and its organs, and palpation of the liver

#### **Case definition**

Detection of hydatid cysts in the liver, the lungs and some other organs of the slaughtered, killed or dead animals (porcines, small ruminants, bovines, equidae, and some wild game species)

#### Diagnostic/analytical methods used

Other: Pathoanatomic examination, visual examination and palpation on the slaughter line, or upon killing in case of wild game

#### Other preventive measures than vaccination in place

Persons, who in carrying out a registered activity of breeding or production come into direct contact with animals, foodstuffs, raw materials, products or waste, must have thorough knowledge in contagious animal diseases, the prevention thereof and transmissibility to man, and in the regulations governing the protection against contagious diseases.

Animal holders must carry out preventive measures as for instance: providing potable water and feed that are fit for consumption; providing and maintaining the required conditions of hygiene in the animal breeding and auxiliary facilities; preventing the introduction into the breeding facilities of disease agents; implementing veterinary measures in the intensive animal rearing technology; handling as prescribed the animal carcasses and other waste, waste waters, faeces and urine; providing for the preventive disinfection, disinsectisation and deratisation (DDD) in the facilities, on public surfaces and in the means of transport

#### **Control program/mechanisms**

#### The control program/strategies in place

National control programme is carried out in accordance with the national legislation, on

the basis of the Rules on veterinary conditions for the production and placing on the market of fresh meat (transposing Council Directive 64/433/EEC), Rules on conditions for the collection of killed wild game, veterinary inspection, production of meat and placing on the market of the meat of killed wild game, and the Instructions on measures for the detection, prevention and suppression of echinococcosis. The control programme envisages inter alia as follows:

The meat and/or wild game may be placed on the market after the slaughtered/killed animals have visually been inspected by the official veterinarian, or by a hunter acting as the veterinary auxiliary and supervised by the official veterinarian.

Systematic dehelminthisation of dogs along with anti-rabies vaccination

Measures for the detection, prevention and suppression of the disease.

#### Measures in case of the positive findings or single cases

Harmless disposal of hydatid cysts.

In the areas, where the disease is enzootic, double dehelminthisation of dogs

#### **Notification system in place**

In case of disease, the veterinary organisation must notify the Regional Office of VARS, within the area of which the disease has been diagnosed. The report on the occurrence of disease is to be submitted on a monthly basis by the tenth day in a month for the previous month.

The authorised laboratory submits the diagnostic test results to the relevant Regional Office of VARS, and to the consigner of samples.

Once a month and no later than the 20th day in the month, the authorised laboratories and Regional Offices of VARS must report on the diagnostic test results to the Office for Contagious Animal Diseases within VARS.

The Main Office of VARS collects the results of ante- and post-mortem examinations conducted by the official veterinarians, and applies them in relation to the diagnoses of diseases communicable to man.

This method of reporting is carried out in accordance with the provisions of the Rules on contagious animal diseases (applicable since 2002), and the reporting as such has been compulsory since 1996.

#### **Results of the investigation**

In 2005, Echinococcus was detected in bovine animals in 7 cases of 131640 animals tested, and in porcine animals in 187 cases (0.04 %) of 420417 animals tested. Tests on 10663 ovine animals detected the Echinococcus in 16 animals (0.15 %). Echinococcus was detected in 7 wild boars (0.46 %) of 1513 animals tested, and in 1 deer of 2701 animals tested.

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

In 2004, as compared to 2003, the number of Echinococcus cases doubled in porcine animals, whilst in 2005, the number of cases decreased by more than 20 %.

In bovine animals, the same number of positive cases was detected in 2005 as in 2001 (7 animals).

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

#### Slovenia 2005 Report on trends and sources of zoonoses

Generally speaking, no essential changes in the prevalence of Echinococcus in animal population have been noted over the most recent years. The percentage of positive cases in animal population is rather low, i.e. less than 0.5 %. Taking into account the rarity of cases in animal population it may be concluded that human population in general is not at risk.

### Table Echinococcus spp. in animals

	Source of information	Sampling unit	Units tested	Total units positive for Echinococcus spp.	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Cattle (bovine animals)	VARS	animal	131640	7			7
Sheep	VARS	animal	10663	16			16
Goats	VARS	animal	251	0			
Pigs	VARS	animal	420417	187			187
Solipeds, domestic	VARS	animal	1645	0			
Wild boars							
wild	VARS	animal	1513	7			7
Bears		1	'		J		
wild	VARS	animal	39	0			
Deer							
wild							
fallow deer	VARS	animal	153	0			
red deer	VARS	animal	2701	1			1
	VARS	animal	9860	0			
roe deer Mouflons							
	VARS	animal	204	0			
wild	VARS		192	0			
Alpine chamois (1)	VAKS	animal	192	U			

<sup>(1):</sup> wild

### 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

Human cases are notifiable by national Law on Infectious Diseases. Medical doctors, laboratories are obliged to notify cases on daily basis to local institutes of public health. Local institutes of public health notify disease to Institute of Public Health of R. Slovenia. Notification since 1977.

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

Number of notifications of human cases decreases.

#### Recent actions taken to control the zoonoses

Screening of pregnant women on routine basis.

## 2.10.2. Toxoplasma in animals

#### **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

From 1946 to 1950 13 human rabies cases-deaths were recorded. Since 1950 no human cases have been notified in Slovenia.

There were no human and animal cases from 1950 to 1973.

Dog-mediated rabies was eradicated soon after World War II, when compulsory vaccination of dogs against rabies came into force (1947). Since that time all dogs in Slovenia are compulsorily vaccinated against rabies.

Wildlife-mediated rabies has been present since 1973, when the first rabid animal (red fox) was detected in the NW of Slovenia. It had progressively spread trough the territory of the municipalities of Murska Sobota and Lendava, but it has never crossed the natural barrier of the Mura River.

The second wave of sylvatic rabies reached Slovenia in 1979 from Austria. From there it has been spread throughout the country and has persisted until the present.

Due to the inconvenient epizootiological situation regarding rabies in the 1980-ies, the Veterinary Administration decided to implement the oral vaccination of foxes against rabies. In 1988, when the pilot project of the manual distribution of baits (so-called Tübingen Model with the SAD type) was started, vaccination was conducted in a small part of Slovenia only. Thereafter, two vaccination campaigns (in spring and autumn) were performed as the strategy of pushing rabies from west to east. At that time, 40,000 to 60,000 baits were distributed in each campaign in a rate of 16 to 20 baits per km2. In a few years that followed, the whole territory of Slovenia was covered three times. It was found that if only a certain region was covered at one time, the success rate was poor.

And this was the reason that in 1995, we started with a new strategy to combat rabies. The aircraft distribution of baits has been performed twice per year - spring and autumn. The GPS was used to support bait distribution and is still used today as a prevailing strategy. Each year, 640,000 baits were deposited (320,000 per campaign, 20 baits/km2). The follow up investigations such as anti-body and marker investigations, have been carried out. Specific software has been developed in order to analyse data received from the computer (connected to the GPS). The results of new strategy were very encouraging. The number of rabies cases decreased from 1089 (996 foxes) in 1995 to only 6 cases (5 foxes) in 1999. All cases were detected near the border with Croatia.

In 2000, the number of cases increased again. Because of new tax policy the OVF budget decreased and at the same time there was a deteriorating situation regarding rabies in South - Eastern neighbourhood.

Therefore, the distribution pattern was changed again. The vaccination was not performed in the NW part of Slovenia, where rabies hasn't occurred for several years. For the first time, in autumn 2000 we used the "cross - flights", by which we increased the density and moreover, the dispersion of baits near the eastern and southern border.

In 2001, 135 cases were positive. But in 2002, as the result of new strategy, only 15 cases were positive.

The situation was very encouraging also in 2003, when only 8 cases were detected, all near the SE border. In this year additional 210.000 baits were purchased in the frame of PHARE Twinning Light project and in the frame of its Follow-up, additional 250.000 baits in 2004 were submitted. With this additional amount of baits the "cross-fligths" strategy has been expanded to the whole 30 km belt along the Croatian border, and the density increased to 30 per km2.

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

No human cases were recorded after 1950.

In 2004, only 2 positive animals (foxes) were detected. Both cases were on the SE border.

In 2005, two rabies cases on the border of vaccination area were detected. Emergency vaccination in 30 km radius around this two outbreaks and taking into account the natural barierrs was carrying out. The third case was detected in May in municipality Ilirska Bistrica on the border region with Croatia.

With emergency vaccination we tried to avoid the spread of the disease outside the vaccionation area. Nevertheless, the fear that rabies might spred over te vaccination area, even to the rabies-free (EU)countres, still remains present.

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

Epizootic situation improved since introduction of vaccination of wild animals; no human cases were recorded after 1950.

There is possibility of importation of human cases in spite of fact, that preexposure vaccination is available for foreign travellers.

#### Recent actions taken to control the zoonoses

Ongoing oral vaccination of wild animals (foxes) twice per year.

Slovenia 2005

## 2.11.2. Lyssavirus (rabies) in animals

#### **Table Rabies in animals**

	Source of information	Sampling unit	Units tested	Total units positive for Lyssavirus (rabies)	unspecified lyssavirus
Cattle (bovine animals)	NVI	animal	26	0	
Sheep	NVI	animal	10	0	
Goats	NVI	animal	5	0	
Pigs	NVI	animal	3	0	
Solipeds, domestic	NVI	animal	3	0	
Dogs	NVI	animal	60	0	
Cats	NVI	animal	97	0	
Bats					
wild	NVI	animal	2	0	
Foxes					
wild	NVI	animal	1248	3	
Wild animals	NVI	animal	149	0	

# 3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

### 3.1. ESCHERICHIA COLI, NON-PATHOGENIC

- 3.1.1. General evaluation of the national situation
- 3.1.2. Antimicrobial resistance in Escherichia coli, non-pathogenic isolates

Slovenia 2005

#### 4. 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

System for identification of foodborne outbreaks is:

mandatory and national.

It covers: family, general and international outbreaks;

and all classes of microbiological agents.

An outbreak of foodborne illness may be defined as two or more linked cases of the same illness or the situation, where the observed number of cases exceeds the expected number.

Oubreaks of foodborne infections are notifiable by national Law on Infectious diseases issued in 1995. Public health professionals in regional institutes are requested to report regularly all investigated outbreaks of infectious intestinal diseases to the Institute of public health of the Republic Slovenia, using a preliminary notification form.

At the end of investigation a final report is also forwarded by the lead investigator.

An outbreak of foodborne illness may be defined as two or more linked cases of the same illness or the situation, where the observed number of cases exceeds the expected number.

#### Description of the types of outbreaks covered by the reporting:

Reporting covers:

family, general and international outbreaks.

It covers all range of microbiological agents.

#### National evaluation of the reported outbreaks in the country:

#### Trends in numbers of outbreaks and numbers of human cases involved

In 2005 50 outbreaks with 1339 infected/ill persons were recorded.

Included are 15 outbreaks with 194 ill and 34 hospitalized persons of food intoxication (17%),

31 outbreaks transmitted contactly with 883 ill and 19 hospitalized persons(66%),

2 water borne outbreaks with 158 ill persons(11%),

2 other outbreaks.

Agents, which caused the outbreaks were:

Salmonella Enteritidis (11 outbreaks);

Calicivirus (26 outbreaks);

Rotavirus (7 outbreaks);

Cryptosporidium parvum (2 outbreaks);

Enterovirus (1 outbreak);

Gastroenterocolitis (3) (agent not identified).

(During 2004 in Slovenia 37 outbreaks of food intoxication (FI), resulting in at least 1075 people becoming ill (38% of all people ill in outbreaks), and 118 hospitalized, were reported.

The average number of outbreaks of food intoxication (FI) in last 5-year period was 35 (from 27 in year 2001 to 42 in year 2003).

The most frequent causative agent of FI outbreaks was Salmonella Enteritidis (31 outbreaks or 84%). Other agents were Staphyloccocus aureus (2), Clostridium perfringens (1); and other unknown agents. Most outbreaks were small in size, 5 of them were greater (more than 50 people were ill).

In 2004 also 41 outbreaks of infectious gastrointestinal diseases (IGI) with contact spread and one outbreak with waterborne spread (Calicivirus) were reported.

The average number of outbreaks of (IGI) with contact spread in last 5-year period was 31 (from 23 in year 2000 to 41 in year 2004).

The most notable feature of analysis of the IGI with contact spread outbreak data in the last 5 years is increase in the number of outbreaks, either confirmed or suspected to be due to viruses (Noroviruses), which caused at least 13 or 30% IGI outbreaks in 2004.

The reason for many Norovirus outbreaks are characteristics of virus. A virus has a low infectious dose, it can survive in environment and is easily transmitted from person to person. Congregate and enclosed settings on example Kindergarten, health care settings, homes for the elderly are perfect environments for the virus to spread.

Other agents of IGI outbreaks with contact spread were rotaviruses (11 outbreaks), Salmonella Enteritidis (2 outbreaks), hepatitis A (1) and other unknown agents.

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

Agents, which caused the outbreaks were:

Salmonella Enteritidis (11 outbreaks);

Calicivirus (26 outbreaks);

Rotavirus (7 outbreaks);

Cryptosporidium parvum (2 outbreaks);

Enterovirus (1 outbreak);

Gastroenterocolitis (3) (agent not identified).

Salmonellae were isolated from: poultry (4 outbreaks);

biscuits, cakes,.. (home made "tiramisu") (4 outbreaks);

home made pancakes, brought to mass gathering (1 outbreak);

food in hotel in Montenegro (1 outbreak);

food for lunch in primary school (1 outbreak).

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

Most outbreaks were small in size and occured mostly in Kindergarten, homes for the elderly, schools and self service restaurants.

#### Evaluation of the severity and clinical picture of the human cases

Most Norovirus infections have a short and mild course.

More severe clinical pictures are caused by Salmonellae.

#### Descriptions of single outbreaks of special interest

Two outbreaks occured in summer camps for children in Croatia. The causative agent was Salmonella Enteritidis.

#### Control measures or other actions taken to improve the situation

Hospitalizations of severe cases; general hygienic measures in Kindergartens, homes for the elderly, kitchens.. were implemented; control of HACCP system..

Table 12. Foodborne outbreaks in humans

Causative agent	General		Total N	al Number in	.i	Source			Type of evidence Location of	Location of	Contributing
	outbreak	outbreak outbreak	persons ———————————————————————————————————	∾ bəib	in hospital		Suspected	Confirmed		exposure	ractors
1	2	3	4	5	9	7			8	6	10
Unknown	×		285	0	26	roast chicken		×	unknown	factory	breakdown HACCP
Unknown	×		31	0	2	food-unknown	×		epidemiological evidence	collective excursion, dinner in the hotel	breakdown HACCP
Unknown	×		21	0	0	carrier	×		pidemiological evidence	pupils and childrens in the kindergarten	unknown
Salmonella - S. Enteritidis		×	က	0	2	biscuit	×		epidemiological evidenc	family	sôôe
Salmonella - S. Enteritidis		×		0	7	tiramisu		×	laborattory confirmed family	family	eggs
Salmonella - S. Enteritidis	×			0	27	cake		×	laborattory confirmed school	school	breakdown HACCP
Salmonella - S. Enteritidis	×	0,	ω.	0	32	roast chicken		×	laborattory confirmed school	school	breakdown HACCP
Salmonella - S. Enteritidis	×		12	0	4	food-unknown	×		epidemiological evidence	restaurant	breakdown HACCP
Salmonella - S. Enteritidis	×	7	4	0	3	scrambled eggs		×	aborattory confirmed hotel	hotel	breakdown HACCP
Salmonella - S. Enteritidis		×	14	0	14	cream cake		×	laborattory confirmed family celebration	family celebration	eggs
Salmonella - S. Enteritidis		×	8	0	2	roast turkey		×	laborattory confirmed family	family	underdone meat
Salmonella - S. Enteritidis		×		0	2	unknown	×		orattory confirmed	oratorio	unknown
Salmonella - S. Enteritidis	×		20	0	0	cream cake		×	laborattory confirmed factory	factory	home made cream cake
Salmonella - S. Enteritidis		×	19	0	10	home made tatarian beefsteak		×	laborattory confirmed family celebration	family celebration	raw meat
Cryptosporidium - C. parvum	×		0	0	16	unknown		×	laborattory confirmed patients in hospital	patients in hospital	unknown
Cryptosporidium - C. parvum	×		ن	0	61	unknown		×	laborattory confirmed patients in hospital	patients in hospital	unknown
Food borne viruses - calicivirus (including norovirus)	×		9	0	0	carrier	×		epidemiological evidence	restaurant	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×	4,	58	0	0	carrier	×		epidemiological evidence	home for the aged	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×		296	0	75	carrier	×		epidemiological evidence	resicences for disables	unknown
Food borne viruses - calicivirus (including norovirus)	×		10	0	9	carrier	×		epidemiological evidence	kindergarten	unknown
Food borne viruses - calicivirus (including norovirus)	×		122	0	22	carrier	×		epidemiological evidence	kindergarten	unknown

Food borne viruses - calicivirus (including norovirus)	×	30	0	0	carrier	×		epidemiological evidence	patients in hospital	unknown
Food borne viruses - calicivirus (including norovirus)	×	72	0	<del>-</del>	carrier	×		epidemiological evidence	invited persons and employed in the hotel	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×	89	0	~	carrier	×		epidemiological evidence	resicences for disables	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×	19	0	_	carrier	×		epidemiological evidence	school	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×	<b>o</b>	0	0	unknown	×		epidemiological evidence	open-air school	unknown
Food borne viruses - calicivirus (including norovirus)	×	2401	0	142	drinking water	×	_	aborattory confirmed residents of Mirna	residents of Mirna	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×	120	0	20	carrier	×		epidemiological evidence	esicences for disables	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×	36	0	0	carrier	×		epidemiological evidence	home for the aged	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×	23	0	0	carrier	×		epidemiological evidence	resicences for disables	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	*	15	0	0	carrier	×		epidemiological evidence	slovenian and croatian pupils and teachers in open-air school	unknown
Food borne viruses - calicivirus (including norovirus)	×	20	0	0	carrier	×		epidemiological evidence	restaurant	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×	19	0	0	carrier	×		epidemiological evidence	kindergarten	unknown
Food borne viruses - calicivirus (including norovirus)	×	7	0	0	carrier	×		epidemiological evidence	kindergarten	unknown
Food borne viruses - calicivirus (including norovirus)	×	7	0	~	carrier	×		epidemiological evidence	childrens in open-air school	unknown
Food borne viruses - calicivirus (including norovirus)	×	16	0	0	carrier	×		epidemiological evidence	tourist excursion	unknown
Food borne viruses - calicivirus (including norovirus)	×	187	0	29	carrier	×		pidemiological evidence	resicences for disables	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×	92	0	~	carrier	×		epidemiological evidence	school	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×	13	0	-	carrier	×		epidemiological evidence	restautrant	breakdown HACCP
Food borne viruses - calicivirus (including norovirus)	×	221	0	40	carrier	×		epidemiological evidence	resicences for disables	unknown
Food borne viruses - calicivirus (including norovirus)	*	10	0	0	carrier	×		epidemiological evidence	hotel-recreation center	unknown

Food borne viruses - calicivirus (including norovirus)	×	64	0	ဇ	drinking water	×	laborattory confirmed residents of Trnovska pla childrens an tutoress	onfirmed	residents of Trnovska plateau, childrens and tutoress	breakdown HACCP
Food borne viruses - rotavirus	×	338	0	20	carrier	×	epidemiological evidence		resicences for disables	unknown
Food borne viruses - rotavirus	×	26	0	င	carrier	×	epidemiological evidence	ical	kindergarten	unknown
Food borne viruses - rotavirus	×	4	0	က	carrier	×	epidemiological evidence		kindergarten	unknown
Food borne viruses - rotavirus	×	7	0	0	carrier	×	epidemiological evidence	ical	kindergarten	breakdown HACCP
Food borne viruses - rotavirus	×	2	0	2	carrier	×	epidemiological evidence	ical	kindergarten	unknown
Food borne viruses - rotavirus	×	17	0	~	carrier	×	epidemiological evidence		kindergarten	unknown
Food borne viruses - rotavirus	×	6	0	_	carrier	×	epidemiological evidence	ical	kindergarten	unknown
Food borne viruses - enterovirus	×	273	0	34	carrier	×	epidemiological evidence		hotel	unknown