European Food Safety Authority

ZOONOSES MONITORING

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, antimicrobial resistance in zoonotic agents and some pathogenic microbiological agents.

IN 2010

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: Slovenia

Reporting Year:

Laboratory name	Description	Contribution
Veterinary Administration of the Republic of Slovenia - VARS	Competent authority	Monitoring program-preparing, Collecting data in animals, food of animal origin and feed, National report-preparing, Contact point with EC.
Inspectorate of the Republic of Slovenia for Agriculture, Forestry and Food - IRSAFF	Competent authority	Monitoring program-preparing, Collecting data in food of non-animal origin.
Health Inspectorate of the Republic of Slovenia - HIRS	Competent authority	Monitoring program-preparing, Collecting data in foodstuffs intended for particular nutritional uses and catering.
National Veterinary Institute - NVI	Researches Laboratory	Scientific advice and support, Analysis and testing.
Institute of Public Health of the Republic of Slovenia - IPHRS	Researches Laboratory	Monitoring program-preparing, Collecting data in humans, Epidemiological investigation, Scientific advice and support, Analysis and testing

PREFACE

This report is submitted to the European Commission in accordance with Article 9 of Council Directive 2003/99/ EC*. The information has also been forwarded to the European Food Safety Authority (EFSA).

The report contains information on trends and sources of zoonoses and zoonotic agents in Slovenia during the year 2010 .

The information covers the occurrence of these diseases and agents in humans, animals, foodstuffs and in some cases also in feedingstuffs. In addition the report includes data on antimicrobial resistance in some zoonotic agents and commensal bacteria as well as information on epidemiological investigations of foodborne outbreaks. Complementary data on susceptible animal populations in the country is also given. The information given covers both zoonoses that are important for the public health in the whole European Community as well as zoonoses, which are relevant on the basis of the national epidemiological situation.

The report describes the monitoring systems in place and the prevention and control strategies applied in the country. For some zoonoses this monitoring is based on legal requirements laid down by the Community Legislation, while for the other zoonoses national approaches are applied.

The report presents the results of the examinations carried out in the reporting year. A national evaluation of the epidemiological situation, with special reference to trends and sources of zoonotic infections, is given. Whenever possible, the relevance of findings in foodstuffs and animals to zoonoses cases in humans is evaluated.

The information covered by this report is used in the annual Community Summary Report on zoonoses that is published each year by EFSA.

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* Directive 2003/ 99/ EC of the European Parliament and of the Council of 12 December 2003 on the monitoring of zoonoses and zoonotic agents, amending Decision 90/ 424/ EEC and repealing Council Directive 92/ 117/ EEC, OJ L 325, 17.11.2003, p. 31

List of Contents

1. ANIMAL POPULATIONS

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

A. Information on susceptible animal population

Sources of information

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
Number of flocks (Gallus gallus): Veterinary Administration of the Republic of Slovenia
Number of holdings (breeding flocks, flocks of laying hens, broiler flocks and turkey flocks): Ministry for Agriculture, Forestry and Food (Veterinary Administration of the Republic of Slovenia)
Number of holdings (cattle, pigs): Ministry for Agriculture, Forestry and Food (Animal Identification and Registration Sector).

Dates the figures relate to and the content of the figures

Reference day for year 2010 is 1 December 2010.
Livestock numbers and number of holdings: Reference date is the date the obtained data refer to.
Number of slaughtered animals: The number of slaughtered animals in 2010.

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.
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.

The following amendments were made:

Date of Modification	Row name	Old value	New value
2011-11-09	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 Number of flocks (Gallus gallus): Veterinary Administration of the Republic of Slovenia Number of holdings (breeding flocks, flocks of laying hens, broiler flocks and turkey flocks): Ministry for Agriculture, Forestry and Food (Veterinary Administration of the Republic of Slovenia) Number of holdings (cattle, pigs): Ministry for Agriculture, Forestry and Food (Animal Identification and Registration Sector). Veterinary Administration of the Republic of Slovenia	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 Number of flocks (Gallus gallus): Veterinary Administration of the Republic of Slovenia Number of holdings (breeding flocks, flocks of laying hens, broiler flocks and turkey flocks): Ministry for Agriculture, Forestry and Food (Veterinary Administration of the Republic of Slovenia) Number of holdings (cattle, pigs): Ministry for Agriculture, Forestry and Food (Animal Identification and Registration Sector).

Table Susceptible animal populations

* Only if different than current reporting year

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*
Cattle (bovine animals)	mixed herds			101716					
	calves (under 1 year)			23207		146770			
	- in total			124923		470151		36293	
	breeding bulls					1900			
	dairy cows (over 2 years)					109467			
	heifers (breeding - over 2 years)					20231			
	heifers (fattening - over 2 years)					1501			
	meat production animals (fattening bulls and steers - over 2 years)					3967			
	others (cows - unspecified - over 2 years)					63887			
	young cattle (1-2 years)					122428			
Deer	farmed - in total					4803	2007	263	2007
	farmed - at slaughterhouse			7					
	farmed - fallow deer [1)]			1					

Table Susceptible animal populations

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*
Deer	farmed - roe deer [2)]			2					
Ducks	- in total					10069			
Gallus gallus (fowl)	mixed flocks/holdings			403925		480141			
	breeding flocks, unspecified - in total [3)]	165						20	
	broilers	2153		32626366		2528825		347	
	laying hens [4)]	202				1503972		144	
	- in total			33030291		4512938			
Geese	- in total					2117			
Goats	animals over 1 year [5)]			66					
	animals under 1 year [6)]			352		4409			
	- in total			418		26197		4133	2007
	- unspecified (female breeding goats)					19435			
	- unspecified (male goats)					1756			
	- unspecified (sterile goats)					597			

Table Susceptible animal populations

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*
Pigs	breeding animals					34996			
	fattening pigs			265634		360597			
	breeding animals - unspecified - sows and gilts			3648					
	- in total			291511		395593		21591	
	- at farm [7)]			391					
	- unspecified (piglets - under 20kg)			21838					
Sheep	animals over 1 year [8)]			414					
	animals under 1 year (lambs) [9)]			9407		32535			
	- in total			9839		129788		5923	2007
	- at farm [10)]			18					
	- unspecified (breeding sheep)					90851			
	- unspecified (rams)					4920			
	- unspecified (sterile sheep)					1482			
Solipeds, domestic	horses - in total			1772		19623	2007	5081	2007

Table Susceptible animal populations

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*
Turkeys	meat production flocks	122		463086		68850			
	- in total	112		463086		68850		46	
Rabbits	farmed - at farm [11)]			120					
	farmed - at slaughterhouse			17730					

Comments:

[1)] at tourist farm

[2)] at tourist farm

[3)] Number of flocks represents the number of adult breeding flocks. Number of holdings: 10 holdings with adult breeding flocks, 6 holdings with rearing breeding flocks and 4 hatcheries.

[4)] Number of flocks represents the number of adult laying hens flocks. Number of holdings: 100 holdings with adult laying hens and 44 holdings with laying hens in rearing period.

[5)] at slaughterhouse

[6)] at slaughterhouse

[7)] at tourist farm

[8)] at slaughterhouse

[9)] at slaughterhouse

[10)] at tourist farm

[11)] at tourist farm

Table Susceptible animal populations

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2011-11-09	Gallus gallus (fowl) - in total	Livestock numbers (live animals) - Data	4618223	4512938

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 most 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 and 2006. In 2009 the number of notifications further dropped to 627. The incidence of notified Salmonella cases dropped to 31 per 100 000 inhabitants. Until 2009 salmonella was most frequent bacterial agent, after Campylobacter spp, in 2009, 2010 campylobacter was most frequent.
Most frequent serotypes are: Salmonella Enteritidis (most of isolates), Salmonella Typhimurium, Salmonella Coeln, Salmonella Stanleyville, Salmonella Infantis.

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

Poultry and eggs of slovenian origin are not important source of infection any more due to improved epizoonotic situation.
As Salmonella Enteritidis remains most common serotype in humans, but not in animal population, other sources / ways of infection are possible.

Recent actions taken to control the zoonoses

Action plan to improve intersectoral collaboration between human- and veterinary medicine. A three years research project for comparison of Salmonella Enteritidis strains of human, food and animal origin ended in 2010.

Suggestions to the Community for the actions to be taken

Improvement of the intersectoral collaboration between veterinary and human medicine.

2.1.2 Salmonellosis in humans

A. Salmonellosis in humans

Reporting system in place for the human cases

Human cases are notifiable by national Law on Infectious Diseases (Official Gazette number 69/95, revised 33/2006).
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 in place after the second World War.

Case definition

According to standard case definitions definitions of EC/ECDC from 2008.

Diagnostic/analytical methods used

Serologic and biochemical identification: isolation on SS agar and selen medium, serotypisation O and H according to Kauffman White scheme.
Laboratory of Institute of Public Health of Celje developed PFGE method for Salmonella isolates from whole Slovenia.

Notification system in place

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 after second World War.

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 82 742 notifications of Salmonella gastroenteritis in Slovenia.
In last years Salmonella Enteritidis encounters most of human Salmonella isolates in Slovenia. Salmonella Typhi, S.Paratyphi are notified only as imported infections.

Results of the investigation

The number of notified human Salmonella cases declined from 3307 notifications in 2004 to 1519 in 2005 and 2006 and to 627 in 2009 and 347 in 2010. The incidence of notified Salmonella cases dropped to 17

per 100 000 inhabitants.
Most frequent serotypes are: Salmonella Enteritidis, Salmonella Typhimurium, Salmonella Coeln, Salmonella Mbandaka.

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

The incidence of human Salmonella infections has recently decreased according to notified number of Salmonella human cases. Poultry and eggs as source of infection are less important as epizootiological situation in Slovenia has improved recently. Salmonella Enteritidis is far more common in humans than in poultry, other sources should be identified as well.

Relevance as zoonotic disease

Salmonella human infections are still important as zoonotic disease. According to notification, Salmonella in 2009 and 2010 was the second most frequent bacterial enteropathogen, Campylobacter was the first one.

Table Salmonella in humans - Species/serotype distribution

Species/serotype Distribution	Cases	Cases Inc.	Autochthon cases	Autochthon Inc.	Imported cases	Imported Inc.	Unknown status
Salmonella	347	16.99	0	0	0	0	347
S. Enteritidis	184	9.01					184
S. Typhimurium	44	2.15					44
S. Mbandaka	12	0.59					12
S. Coeln	20	0.98					20
Salmonella spp.	8	0.39					8
Other serovars	69	3.38					69
S. group B	10	0.49					10

Table Salmonella in humans - Age distribution

Age distribution	S. Enteritidis			S. Typhimurium			Salmonella spp.			Other serovars			S. Coeln		
	All	M	F	All	M	F	All	M	F	All	M	F	All	M	F
<1 year	7	5	2	1	1	0	1	1	0	8	6	2	2	0	2
1 to 4 years	22	9	13	9	4	5	2	2	0	8	3	5	2	1	1
5 to 14 years	35	21	14	12	7	5	1	1	0	12	5	7	4	0	4
15 to 24 years	34	14	20	6	5	1	1	0	1	7	2	5	3	2	1
25 to 44 years	26	13	13	8	5	3	2	0	2	16	7	9	4	3	1
45 to 64 years	28	16	12	5	2	3	0	0	0	11	5	6	4	3	1
65 years and older	32	15	17	3	2	1	1	0	1	7	4	3	1	1	0
Age unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total :	184	93	91	44	26	18	8	4	4	69	32	37	20	10	10

Age distribution	S. Mbandaka			S. group B		
	All	M	F	All	M	F
<1 year	0	0	0	1	0	1
1 to 4 years	2	2	0	3	2	1
5 to 14 years	1	1	0	2	1	1
15 to 24 years	0	0	0	3	2	1
25 to 44 years	3	1	2	0	0	0
45 to 64 years	4	0	4	0	0	0

Table Salmonella in humans - Age distribution

Age distribution	S. Mbandaka			S. group B		
	All	M	F	All	M	F
65 years and older	2	0	2	1	0	1
Age unknown	0	0	0	0	0	0
Total :	12	4	8	10	5	5

Table Salmonella in humans - Seasonal distribution

Seasonal Distribution / Months	S. Enteritidis	S. Typhimurium	Salmonella spp.
	Cases	Cases	Cases
January	7	2	1
February	7	3	0
March	11	2	2
April	8	2	1
May	15	3	0
June	15	7	1
July	17	2	1
August	32	4	0
September	36	5	1
October	18	2	0
November	15	5	0
December	3	7	1
not known	0	0	0
Total :	184	44	8

2.1.3 Salmonella in foodstuffs

A. Salmonella spp. in pig meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

VARS
Subjected to sampling shall be the meat of porcine animals in establishments approved for the cutting of fresh meat and/or production of minced meat and meat preparations.
Sampling is carried out by official veterinarians throughout the year.
One meat sample is an epidemiological unit.

Frequency of the sampling

At slaughterhouse and cutting plant

In the porcine meat cutting plants, 1 meat sample is taken every 1 to 3 months or twice a year - depends on capacity of production.

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 stored in a sterile bag.
Samples must be delivered to the laboratory in the shortest time possible, as a rule, immediately after sampling or within 24 hours after sampling. In exceptional cases (holidays, weekend), the samples can be delivered to the laboratory within 80 hours after sampling. The laboratory must start with the investigation within 24 hours after receiving the material. If samples are delivered to the laboratory within 72 to 80 hours after taking, they must be tested immediately after the receip. In the period from the sampling to the beginning of the analysis, the sampled material must be stored in a cold place at the temperature of 4oC(+/- 2oC) and may not be exposed to light.

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, Serotipization: Kauffman-White scheme

Preventive measures in place

GMP, GHP, HACCP

Control program/mechanisms

The control program/strategies in place

- Registration and/or approval of establishments subjected to veterinary controls,
- Identification of animal products and their traceability,
- Veterinary controls in establishments.

Notification system in place

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation.
On monthly basis the laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

Results of the investigation

Sampling at cutting plants.
In 2010, 292 porcine meat samples were taken. Salmonella was not detected.

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

Situation concerning Salmonella spp. in the fresh porcine meat in production remains favourable also in 2010.
On the basis of results obtained in production, the pig meat does not pose a major threat to public health.

B. Salmonella spp. in bovine meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

VARS
Subjected to sampling shall be the meat of bovine animals in establishments approved for the cutting of fresh meat and/or production of minced meat and meat preparations.
Sampling is carried out by official veterinarians troughout the year.
One meat sample is an epidemiological unit.

At retail

Frequency of the sampling

At slaughterhouse and cutting plant

In the bovine meat cutting plants, 1 meat sample is taken every 1 to 3 months or twice a year- depends on capacity of production.

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 stored in a sterile bag.
Samples shall be delivered to the laboratory as soon as possible, as a rule, immediately after sampling or within 24 hours after sampling. In exceptional cases (holidays, weekend), the samples can be delivered to the laboratory within 80 hours after sampling. The laboratory must start with the investigation within 24 hours after receiving the material. If samples are delivered to the laboratory within 72 to 80 hours after taking, they must be tested immediately after the receip. In the period from the sampling to the beginning of the analysis, the sampled material must be stored in a cold place at the temperature of 4oC(+/- 2oC) and may not be exposed to light.

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, Serotipization: Kauffman-White scheme

Preventive measures in place

GMP, GHP, HACCP

Control program/mechanisms

The control program/strategies in place

VARS
- Registration or approval of establishments subjected to veterinary control,
- identification of animal products and their tracebillity,
- veterinary control in establishments.

Notification system in place

VARS Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation.
On monthly basis the laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

Results of the investigation

Sampling at cutting plants.
In 2010, 291 bovine meat samples were taken. Salmonela was not detected.

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

Situation concerning Salmonella spp. in the fresh bovine meat in production remains favourable also in 2010.
On the basis of results obtained in production, the meat of bovine animals does not pose a major threat to public health.

C. Salmonella spp. in broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

VARS
Subjected to sampling shall be the meat of broiler animals in establishments approved for the cutting of fresh meat.
Sampling is carried out by official veterinarians throughout the year. One meat sample is an epidemiological unit.

Frequency of the sampling

At slaughterhouse and cutting plant

Frequency of the sampling depends on capacity of production:
Once a week, sampling shall be implemented in the approved establishments producing more than 10.000 tons of fresh broiler meat/year.
Every two weeks, sampling shall be implemented in the approved establishments producing less than 10.000 tons of fresh broiler meat, but more than 1000 tons of fresh broiler meat/year.
Every three months, samples shall be taken in the approved establishments producing less than 1000 tons of fresh broiler meat/year.

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 sterile instrument and the thoracic section with or without skin (in the same proportion as it is placed on the market) is removed and stored in a sterile bag.
Samples must be delivered to the laboratory in the shortest possible time, as a rule, immediately upon sampling, i.e. within the same day. During transport, samples must be chilled to +4oC. Analyses should commence in the shortest possible time after sampling.

Definition of positive finding

At slaughterhouse and cutting plant

A sample shall be considered as positive when the Salmonella has been isolated from.

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method ISO 657:2002, Serotipisation: Kauffman-White scheme.

Preventive measures in place

GMP, GHP, HACCP

Control program/mechanisms

The control program/strategies in place

VARS
- Registration or approval of establishments subjected to veterinary control,
- identification of animal products and their tracebillity,

- veterinary control in establishments.

Notification system in place

VARS

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

On monthly basis the laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

Business operator must notify VARS of the presence of Salmonellae in the establishment.

Results of the investigation

VARS

In 2010, 100 broiler meat samples were taken. Salmonella was detected in two (2) meat samples.

In both positive samples S. Infantis was identified.

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

SAMPLING AT CUTTING PLANT

Results of the broiler meat testing for the presence of Salmonella are all recent years very favourable.

In the frame of the monitoring programme from 2005 to 2009 we have detected only one positive broiler meat sample (in year 2007).

D. Salmonella spp. in turkey meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

VARS
Samples of turkey meat were taken at one approved cutting plant operating within the only slaughterhouse where the sloughter of turkeys is conducted.
Sampling is carried out by the official veterinarians throughout the year.
A meat sample constitutes an epidemiological unit.

Frequency of the sampling

At slaughterhouse and cutting plant

At cutting plants, 1 random sample is taken every week.

Type of specimen taken

At slaughterhouse and cutting plant

Fresh meat

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

Approximately 300 g of meat is taken with sterile tools and put into a sterile bag. A part of meat with the skin on is taken, if possible.
Samples are delivered to the laboratory as soon as possible, as a rule, immediately after sampling (on the same day) or within 24 hours of the sampling. In exceptional cases (holidays, weekend), the samples can be delivered to the laboratory within 80 hours after sampling. The laboratory must start with the investigation within 24 hours after receiving the material. If samples are delivered to the laboratory within 72 to 80 hours after taking, they must be tested immediately after the receipt. In the period from the sampling to the beginning of the analysis, the sampled material must be stored in a cold place, at the temperature of 4 oC (+/-2 oC).

Definition of positive finding

At slaughterhouse and cutting plant

Meat: sample shall be considered positive where the causative agent has been isolated from the sample. Isolation of agent in 25g.

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002, Serotipization: Kauffman-White scheme

Preventive measures in place

GMP, GHP, HACCP

Control program/mechanisms

The control program/strategies in place

- Registration or approval of establishments subjected to veterinary control,
- identification of animal products and their tracebillity,
- veterinary control in establishments.

Notification system in place

Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation.
On monthly basis the laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

Results of the investigation

In 2010, 49 turkey meat samples were taken. Salmonella was not detected.

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

In comparison to the preceding year (production phase) the percentage of positive samples of fresh turkey meat decresed (from 4,05% in 2008 to 0% positive samples in 2009 and in 2010) however the number of tested samples in 2009 (26) and in 2010 (49) was in comparison with 2008 (74) lower. Nevertheless the situation regarding turkey meat at production stage is estimated as favourable.

E. Salmonella spp. in food

Monitoring system

Sampling strategy

VARS

Monitoring at processing and at retail

Sampling of RTE meat products, dairy products for Salmonella spp. was conducted in the approved and in registered establishments and at retail.

Sampling of shellfishs was conducted at dispatch centres.

Sampling of crustaceans (cooked) was conducted at processing plants.

HIRS

Monitoring (foodstuffs intended for particular nutritional uses and catering)

Annual monitoring programme was prepared with respect to the risk analysis, legislative criteria, results of programme/controls carried out in the previous year, epidemiological situation.

Samples were taken at producer, wholesalers and at retail level and it was carried out by the health inspectors.

Programme:

- dried infant formulae intended for infants below six months of age: 10 samples/year;
- dried dietary foods for special medical purposes intended for infants below six months of age: 5 samples/year;
- dried follow-on formulae: 15 samples/year;
- ready-to-eat foods intended for infants: 10 samples/year;
- ready-to-eat foods for special medical purposes: 10 samples/year;
- precut RTE fruits and vegetables: 100 samples/year;
- unpasteurised fruit and vegetable juices (RTE): 25 samples/year;
- ice cream: 100 samples/year;
- RTE cakes, deserts and pastry: 100 samples/year;
- RTE deli dishes (salads, sliced cooked meat products and sausages, sauces etc.): 200 samples/year.

IRSAFF

Monitoring (foodstuff of non-animal origin except intended for particular nutritional uses and catering)

Annual monitoring programme was prepared with respect to the risk analysis, legislative criteria, results of programme/controls carried out in the previous year.

Samples were taken at producer, wholesalers and at retail level and it was carried out by the inspectors for quality control

Programme:

- sprouting seeds: 9 samples/year
- tea: 40 samples/year
- spices: 20 samples/year
- precut RTE fruits and vegetables: 30 samples/year;
- unpasteurised fruit and vegetable juices (RTE): 18 samples/year;
- frozen fruits and vegetables (RTE): 30 samples/year
- RTE deli dishes : 50 samples/year.

Frequency of the sampling

VARS

Sampling was distributed evenly throughout the months: June - December.

The number of samples to be taken had been defined in advance and for every particular VARS Regional Office separately.

HIRS
Sampling was distributed evenly throughout the months: March - October.

IRSAFF
Sampling was distributed evenly throughout the months: April -December.

Type of specimen taken

VARS:
- meat products, ready-to-eat,
- shellfishs,
- dairy products, ready-to-eat.

HIRS:
- dried infant formulae intended for infants below six months of age,
- dried dietary foods for special medical purposes intended for infants below six months of age,
- dried follow-on formulae,
- ready-to-eat foods intended for infants,
- ready-to-eat foods for special medical purposes,
- precut RTE fruits and vegetables,
- unpasteurised fruit and vegetable juices (RTE),
- ice cream,
- RTE cakes, deserts and pastry,
- RTE deli dishes (salads, sliced cooked meat products and sausages, sauces etc.).

IRSAFF:
- sprouting seeds
- tea
- spices
- precut RTE fruits and vegetables
- unpasteurised fruit and vegetable juices (RTE)
- frozen fruits and vegetables (RTE)
- RTE deli dishes

Methods of sampling (description of sampling techniques)

VARS
A single sample of a meat product, shellfish, crustaceans and dairy product shall be composed of five units (n=5), and every unit shall weigh at least 200 g (dairy products - at least 300g/ml).
Samples were delivered to the laboratory in the shortest time possible, as a rule, immediately after sampling (in 24 hours after sampling at the latest). In time between sampling and delivery to the laboratory, samples shall be kept at 4°C(+-2°C).
As precedence dairy products made frome raw milk shall be sampled. In cases where business operators produce dairy products using the different types of milk (raw, thermally treated, pasteurised), the dairy products obtained from the raw milk and thermally treated milk shall have precedence in sampling.

HIRS
Sampling plan (n = number of units comprising the sample):
- dried infant formulae intended for infants below six months of age: n=30;
- dried dietary foods for special medical purposes intended for infants below six months of age: n=30;
- dried follow-on formulae: n=30;
- ready-to-eat foods intended for infants: n=10;

- ready-to-eat foods for special medical purposes: n=10;
- precut RTE fruits and vegetables: n=1;
- unpasteurised fruit and vegetable juices - RTE: n=1;
- ice cream: n=1;
- RTE cakes, deserts and pastry: n=1;
- RTE deli dishes (salads, sliced cooked meat products and sausages, sauces etc.): n=1.

Every unit of the sample weighed at least 100 g. If a sample was analysed in one unit and was not prepacked, a sample weighing 300-500 g was taken by sterile instrument and stored in a sterile bag or other sterile container. Samples had to be delivered to the laboratory in the shortest time possible. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The temperature during storage and transport should not exceed + 4°C for samples of chilled products and -18°C for samples of ice cream.

IRSAFF
Sampling plan (n = number of units comprising the sample):
- sprouting seeds (n=1)
- tea (n=1)
- spices (n=1)
- precut RTE fruits and vegetables (n=5)
- unpasteurised fruit and vegetable juices (RTE) (n=5)
- frozen fruits and vegetables (RTE) (n=5)
- RTE deli dishes (n=5)

Every unit of the sample weighed at least 100 g. If a sample was analysed in one unit and was not prepacked, a sample weighing 300-500 g was taken by sterile instrument and stored in a sterile bag or other sterile container. Samples had to be delivered to the laboratory in the shortest time possible. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The temperature during storage and transport should not exceed + 4°C for samples of chilled products and -18°C for frozen samples.

Definition of positive finding

Positive sample is a sample in which Salmonella spp. has been isolated in 25g.

Diagnostic/analytical methods used

Bacteriological method: EN/ISO 6579:2002/A1:2007

Preventive measures in place

GMP, GHP, HACCP

Control program/mechanisms

The control program/strategies in place

VARS
- Registration and/or approval of establishments subjected to veterinary controls
- Identification of animal products and their traceability
- Veterinary controls in establishments

HIRS
Registration of establishments and official control.

IRSAFF

Registration of establishments and official control.

Measures in case of the positive findings or single cases

Informing the owner of the sample and necessary enforcement action in accordance with Commission Regulation (EC) No 2073/2005 on microbiological criteria for foodstuffs and Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.

Notification system in place

VARS
The laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

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

IRSAFF
Whenever zoonotic agent-Salmonella is detected in sample taken, relevant authority must be informed.

Results of the investigation

VARS
In 2010:
196 samples of RTE meat products, 94 samples of dairy products, three (3) samples of shellfish and two(2) samples of crustaceans were taken.
Salmonella was not detected in any sample.

HIRS
Monitoring (foodstuffs intended for particular nutritional uses and catering)
In 2010, 575 samples of above described food groups were taken. Salmonella spp. was not detected in any sample.

HIRS
Monitoring (foodstuffs intended for particular nutritional uses and catering)
In 2010, 197 samples of above described food groups were taken. Salmonella spp. was not detected in any sample.

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

Situation concerning Salmonella spp. in concerned food product groups is favourable.

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
Meat from broilers (Gallus gallus) - fresh - at cutting plant - Monitoring - official sampling	VARS	Single	25g	100	2	0	0	0	2
Meat from turkey - fresh - at cutting plant - Monitoring - official sampling	VARS	Single	25g	49	0				

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Dairy products, unspecified (RTE) [1)]	VARS	Batch	25g	94	0			

Comments:

[1)] n=5

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Foodstuffs intended for special nutritional uses - dried dietary foods for special medical purposes intended for infants below 6 months [1)]	HIRS	Batch	25g	5	0			
Fruits and vegetables - precut - ready-to-eat [2)]	IRSAFF	Batch	25g	30	0			
Infant formula - dried - intended for infants below 6 months [3)]	HIRS	Batch	25g	10	0			
Juice - fruit juice - unpasteurised [4)]	IRSAFF	Batch	25g	18	0			
Seeds, sprouted - ready-to-eat	IRSAFF	Single	25g	9	0			
All foodstuffs - at retail - domestic production - Monitoring - official sampling - convenience sampling [5)]	IRSAFF	Single	25	50	0			
Bakery products - cakes - at catering - Monitoring - official sampling (n=1, cakes, desserts and pastry)	HIRS	Single	25g	100	0			
Cheeses made from cows' milk - unspecified - at catering - Monitoring - official sampling (n= 1, grated or sliced cheese) [6)]	HIRS	Single	25g	12	0			
Crustaceans - unspecified - cooked (RTE)	VARS	Single	25g	2	0			
Foodstuffs intended for special nutritional uses - dietary foods for special medical purposes - at retail - Monitoring - official sampling (n=10, ready-to-eat foods)	HIRS	Single	25g	10	0			
Foodstuffs intended for special nutritional uses - non-ready-to-eat - at retail - Monitoring - official sampling (n=30, dried follow-on formulae)	HIRS	Single	25g	15	0			

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Foodstuffs intended for special nutritional uses - ready-to-eat - at retail - Monitoring - official sampling (n=10, foods intended for infants)	HIRS	Single	25g	10	0			
Fruits and vegetables (frozen) [7]	IRSAFF	Batch	25g	30	0			
Fruits and vegetables - precut - ready-to-eat - at catering - Monitoring - official sampling (n=1)	HIRS	Single	25g	100	0			
Juice - fruit juice - unpasteurised - at catering - Monitoring - official sampling (n=1)	HIRS	Single	25g	25	0			
Meat, mixed meat - meat products - at catering - Monitoring - official sampling (n=1, sliced cooked meat products and sausages) [8]	HIRS	Single	25g	31	0			
Molluscan shellfish - raw - at processing plant (at dispatch centre) [9]	VARS	Single	25g	3	0			
Other processed food products and prepared dishes - ices and similar frozen desserts - at catering - Monitoring - official sampling (n=1)	HIRS	Single	25g	100	0			
Other processed food products and prepared dishes - unspecified - ready-to-eat foods - at catering - Monitoring - official sampling (n=1, sandwiches and spreads) [10]	HIRS	Single	25g	8	0			
Ready-to-eat salads - at catering - Monitoring - official sampling (n=1) [11]	HIRS	Single	25g	127	0			
Sauce and dressings - at catering - Monitoring - official sampling (n=1) [12]	HIRS	Single	25g	22	0			
Spices and herbs - dried - non-irradiated - at retail - domestic production - Monitoring - official sampling - convenience sampling	IRSAFF	Single	25	44	0			

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Spices and herbs - dried - non-irradiated - at retail - imported - Monitoring - official sampling - convenience sampling	IRSAFF	Single	25g	16	0			

Comments:

[1] n=30

[2] n=5

[3] n=30

[4] n=5

[5] delicates dishes with long shelf life

[6] from sample group RTE deli dishes

[7] n=5

[8] from sample group RTE deli dishes

[9] n=5

[10] from sample group RTE deli dishes

[11] from sample group RTE deli dishes

[12] from sample group RTE deli dishes

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
Meat from bovine animals - fresh - at cutting plant - Monitoring - official sampling	VARS	Single	25g	291	0			
Meat from pig - fresh - at cutting plant - Monitoring - official sampling	VARS	Single	25g	292	0			
Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - meat products (RTE) [1)]	VARS	Batch	25g	196	0			

Comments:

[1)] n=5

2.1.4 Salmonella in animals

A. Salmonella spp. in Gallus Gallus - breeding flocks

Monitoring system

Sampling strategy

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

VARS
Sampling was carried out in all parent breeding flocks.
There are no grandparent and elite breeding flocks in Slovenia.

Sampling shall be conducted on the incentive of the business operator, i.e. in rearing breeding flocks at the holding, and in adult breeding flocks at the hatchery.

Animal owner or holder of activity of the hatchery shall at his own expence take samples for analysis in order to detect the presence of Salmonella.
Sampling was carried out at the iniciative of the operator: at the holding (day old chicks and rearing flocks sampling) and every two weeks at the hatcheries (adult flocks sampling).

Routine official control sampling is carried out at the holdings and at the hatcheries (adult flock sampling).
Sampling is carried out in each adult flock every 16 weeks at hatchery and on the holdings at two occasions:
- during the production cycle (within four weeks following moving to laying phase
- at the end of the laying phase, not earlier than 8 weeks before the end of production cycle).

Confirmatory sampling by the official veterinarian is carried out:
- at the holding folowing detection of relevant salmonella at the hatchery
- at the holding following detection of relevant salmonella in the samples taken in rearing flocks by business operator.
In case of official confirmatory sampling at the holding following detection of Salmonella Enteritidis, Salmonella Typhimurium, Salmonella Infantis, Salmonella Hadar and/or Salmonella Virchow serotypes at the hatchery additional samples shall be collected for antimicrobial testing. To this end, at least 5 animals per house or 12 eggs per flock shall be taken.

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

Every flock is sampled. Firstly at four week of age and secondly two weeks prior to entering the laying phase or moving into laying unit.

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

Every two weeks.

Type of specimen taken

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

Internal linings of delivery boxes and/or dead chicks.

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

Faeces or boot swabs.

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

Eggshell

Methods of sampling (description of sampling techniques)

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

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

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

Sampling at the initiative of the operator and confirmatory sampling by official veterinarian is carried out as specified in Annex of Commission Regulation (EC) No.200/2010, point 2.2.2.2.(a)

Breeding flocks: Production period

Sampling at the initiative of the operator at the hatchery:
- 10g broken eggshells is taken from 25 separate hatcher baskets, chrushed, mixed and a 25g sub sample taken.

Routine official sampling at the holdings is carried out as specified in Annex of Commission Regulation (EC) No.200/2010, point 2.2.2.2.(a)

Routine official sampling at the hatchery:
- 10g broken eggshells is taken from 25 separate hatcher baskets, chrushed, mixed and a 25g sub sample taken.

Official confirmatory sampling is carried out as specified in Annex of Commission Regulation (EC) No.200/2010, point 2.2.2.2.(b)

Official sampling for detection of the presence of antimicrobials or of bacterial growth inhibitory effect in samples: at least five birds from each house or 12 eggs from the flock.

Case definition

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

Flock is considered positive where the presence of:
- Salmonella Enteritidis or Salmonella Typhimurium (other than vaccine strains) is detected in samples of internal linings of delivery boxes or in dead chicks taken by business operator or during official sampling; or
- Salmonella Enteritidis, Salmonella Typhimurium, Salmonella Infantis, Salmonella Hadar and/or Salmonella Virchow (other than vaccine strains) is detected in samples taken at the holding during official sampling

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

Flock is considered positive where the presence of Salmonella Enteritidis, Salmonella Typhimurium, Salmonella Infantis, Salmonella Hadar and/or Salmonella Virchow (other than vaccine strains) is detected in samples taken at the holding during official sampling.

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

A breeding flock is considered positive
- when the presence of the Salmonella Enteritidis, Salmonella Typhimurium, Salmonella Infantis, Salmonella Hadar and/or Salmonella Virchow (other than vaccine strains) has been detected in one or more samples taken in the flock, or
- when the confirmatory sampling as part of official controls in accordance with point 2.2.2.2(b) does not confirm the detection of relevant Salmonella serotypes but antimicrobials or bacterial growth inhibitors have been detected in the flock.

Diagnostic/analytical methods used

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

Bacteriological method:
Method in accordance with the OIE Manual, 5th ed.,2004;
Amendment 1 of EN/ISO 6579-2002/Amd 1:2007

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

Bacteriological method:
Amendment 1 of EN/ISO 6579-2002/Amd 1:2007

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

Bacteriological method:
Amendment 1 of EN/ISO 6579-2002/Amd 1:2007

Vaccination policy

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

Vaccination programme in breeding flocks is not applied in the Republic of Slovenia.
As vaccination against Salmonella is not prohibited under national legislation, business operators – owners of breeding flocks conduct voluntary vaccination against Salmonella to ensure higher safety and protection of their own animals.
In 2010, voluntary vaccination against Salmonella was conducted in all breeding flocks. In total, 122 rearing flocks were vaccinated. Business operators conduct the vaccination exclusively during the rearing period (rearing flocks only are vaccinated). Vaccination is conducted three times, where the vaccination with live vaccine administered through water for watering is conducted twice, and inactivated vaccine is used (once) as booster vaccination and administered i/m to every individual animal. The last (third) vaccination is conducted at the age of 18-19 weeks. Vaccination with live vaccine is carried only against S.Enteritidis, while third (last) vaccination with inactivated vaccine is carried out against S.Enteritidis (Salenvac T) or against S.Enteritidis and S.Typhimurium (Gallimune SE+ST).

Other preventive measures than vaccination in place

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

Person, who is 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.
In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GAP, GHP, and record keeping.

In slaughterhouses: GMP,GHP,HACCP

Control program/mechanisms

The control program/strategies in place

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

National control programme for breeding flocks is carried out in accordance with the national Rules on monitoring and control of salmonella and relevant Community legislation.
The control mechanisms envisages inter alia as follows:
- Registration or approval of holdings who are subjected to veterinary control,
- Regular official veterinary checks on holdings,
- Movements of animals accompanied by prescribed documents,
- Veterinary referral form to accompany flocks infected with salmonella,
- Regular sampling in each breeding flock ,
- Compulsory notification in case salmonella is detected by FBO and laboratory,
- Measures in the suspect holdings and in case the flocks is consedered as positive due to detection of S.Enteritidis,
S.Typhimurium, S.Hadar, S.Virchow and/or S.Infantis.

Measures in case of the positive findings or single cases

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

Where Salmonella Enteritidis, Salmonella Typhimurium, Salmonella Infantis, Salmonella Hadar and/or Salmonella Virchow (hereinafter referred to as relevant Salmonella serovars) is detected in eggshell samples taken at the hatchery on the initiative of the business operator, or during the official routine sampling at the hatchery, there shall be conducted at the holding:
• official confirmatory sampling of relevant breeding flock in compliance with point 2.1.2.1 (c) of Annex to Regulation (EU)
No 200/2010. Samples shall be taken by the method detailed in point 2.2.2.2 (b) of the same Regulation. In official
confirmatory sampling of adult breeding flocks there shall additionally be taken the samples (5 animals or 12 eggs) for
detecting the presence of antimicrobials;
• epizootiological investigation with the objective of establishing the source of infection;
• feed sampling for tests for the presence of Salmonella spp., where applicable for establishing the source of infection.

In addition to official confirmatory sampling that is conducted by VARS official veterinarian, there shall apply the following measures for the “suspect flock”:
• ban on animal movements from the suspect flock, unless for slaughter or destruction of the flock;
• ban on circulation of, trade in and export of eggs from the suspect flock, unless handled as defined in point 3 of Part C of
Annex II to Regulation (EC) No 2160/2003;
• ban on placing eggs from suspect flock into the hatcher in case of detected Salmonella Enteritidis or Salmonella
Typhimurium;
• where eggs from a suspect flock in which the Salmonella Hadar, Salmonella Virchow or Salmonella Infantis serovars
have been detected are placed into the hatcher, the business operator shall ensure that hatching is carried out in
segregated hatchers and provide for the traceability of such hatching eggs.

Measures instituted in “suspect” breeding flocks shall apply pending the results of official confirmatory sampling.
I) Where Salmonella Enteritidis and/or Salmonella Typhimurium is detected in a positive breeding flock, measures laid down in Annex II, Part C, to Regulation (EC) No 2160/2003 shall be carried out:

1) Non-incubated eggs from the flock must be destroyed. However, such eggs may be used for human consumption under the following conditions:
- Eggs must me marked as defined in point 2(b) Part D Annex II of Regulation (EC) No 2160/2003;
- Eggs may be delivered only to approved egg processing establishment and must be treated in a manner that guarantees the elimination of Salmonella;

2) Incubated eggs, still present in a hatchery, must be destroyed or treated in accordance with Regulation (EC) No 1774/2002.
3) All birds, including day-old chicks, in the flock must be slaughtered or destroyed so as to reduce as much as possible the risk of spreading salmonella. At slaughter or destruction of a flock, business operator shall carry out the following measures:
a. Slaughtering must be carried out in accordance with Community legislation on food hygiene, where the business operator of food business activity of slaughter shall ensure that the slaughter of animals originating from the positive flock is conducted as the last series in the slaughter process of that production day. Products derived from such birds may be placed on the market for human consumption if they are treated in a manner that guarantees the elimination of Salmonella.
If not destined for human consumption, such products must be used or disposed of in accordance with Regulation (EC) No 1774/2002;
b. At killing or destruction of the flock, the business operator shall ensure that the killing and destruction are conducted in compliance with the regulations governing animal welfare in accordance with Regulation (EC) No 1774/2002.
4) Upon removal or dispatch of the flock in which Salmonella spp. has been identified, the manure and/or bedding shall be removed in accordance with regulations governing the handling of animal by-products and thorough cleaning and disinfection must be carried out; before restocking, the bacteriological control shall be carried out as to the effectiveness of cleaning and disinfection, with negative results.

II) Where Salmonella Infantis, Salmonella Hadar and/or Salmonella Virchow is detected in a positive breeding flock, the business operator shall:

1. prepare the flock sanitisation programme and provide for implementation of all the flock sanitising measures. The flock sanitisation programme shall be submitted by the business operator to the relevant VARS Regional Office;

2. by the end of flock sanitisation, ensure that eggs are hatched in segregated hatchers and provide for the traceability of
eggs and day-old chicks.
On completion of flock sanitisation, VARS official veterinarian shall conduct the official sampling using the method referred to in point 2.2.2.1 of Annex to Regulation (EU) No 200/2010.

In case of presence of other Salmonella serovars, the business operator shall conduct measures laid down in the internal monitoring and control plan.

Notification system in place

Notification:
In the case of detection of Salmonella Enteritidis, Salmonella Typhimurium Salmonella Infantis, Salmonella Hadar and/or Salmonella Virchow during sampling at the initiative of business operator, operator must inform VARS regional office within two working days after receipt of the laboratory results, by email, telephone or by fax.
Laboratory must inform VARS regional office in the case of detection of Salmonella Enteritidis, Salmonella Typhimurium Salmonella Infantis, Salmonella Hadar and/or Salmonella Virchow in the samples taken by business operator or in the official samples the next working day after the analysis is completed.
In case of detection of other serovars laboratory must inform VARS regional office within five working days after the analysis is completed.

Reporting:
Upon the receipt of the sample, the laboratory issues a confirmation of the receipt of the sample and keeps the original form - sampling minutes. The laboratory sends a copy of the form, together with the copy of the investigation report, to the main office of the VARS and the original to the business operator and, in the event of official sampling, also to the official veterinarian.

Results of the investigation

There were 165 adult parent breeding flocks, and 122 rearing breeding flocks included in the Salmonella control programme of 2010.

Adult breeding flocks
Of a total of 165 adult parent flocks tested, Salmonella was not identified in any flock at the holding. In adult breedingt flocks, S.Saintpaul was identified in eggshell samples in two flocks; however, the presence of Salmonella was not confirmed by the confirmatory official sampling of both the flocks at the holding.

Rearing breeding flocks
Salmonella spp. was identified in 5 rearing breeding flocks. In one rearing flock, in day-old chicks, the S.Cotham and S.Derby serovars were identified, and three weeks later, in official faeces sampling, also the S.Tennessee serovars; in the other four rearing flocks, in day-old chicks (carcasses), S.Montevideo was identified, and in internal linings, Salmonella O:6,7 was identified. During sampling at the age of 4 weeks, Salmonella was not detected in any of the rearing flocks anymore.
The Community target for adult breeding flocks was achieved also in the 2010. In the same period, also the prevalence of Salmonella spp. was below 1 %, and therefore, the situation concerning the prevalence of Salmonella in breeding flocks is regarded as favourable.
In 2010 Salmonella was detected in two eggshell samples, however, Salmonella serovars for which the Community target had been set were not identified in any sample.

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

The Community target for adult breeding flocks was achieved already by the end of 2007, as Salmonella was not identified in any breeding flock. In 2008, the S.Typhimurium serovar was identified in a single adult breeding flock; however, Salmonella prevalence was still < 1 % (0.7 %). The Community target for adult breeding flocks was achieved also in the period 2009 – 2010. In the same period, also the prevalence of Salmonella spp. was below 1 %, and therefore, the situation concerning the prevalence of Salmonella in breeding flocks in the Republic of Slovenia is regarded as favourable.
In 2010 the declining trend of infections with Salmonella Enteritidis/Salmonella Typhimurium continued in laying hen flocks also, as S.Enteritidis was identified in a single adult laying hen flock, and in rearing flocks the infection with Salmonella Enteritidis/Salmonella Typhimurium was not identified at all.
In 2010 Community target for broilers was achieved also in broiler flocks as Salmonella spp. was identified in less then 2%.
Since 2004, the number of reported salmonellosis cases has been decreasing and decreasing trend of reported cases of salmonellosis in humans continues also in 2010.
The number of Salmonella outbreaks has gradually been decreasing ever since 2005. In 2009, 4 Salmonella outbreaks were reported, and eggs were the supposed source of infection in all these cases. Considering the data in the CNB news of 2010, including the framework data on the number of outbreaks of communicable diseases reported, there were 74 communicable disease outbreaks reported in 2010. According to the preliminary data collected, in none of the 65 outbreaks, where final reports have already been available, Salmonella is found as the cause of disease. In 9 outbreaks, a final report has not been issued yet to date.

Additional information

Use of antimicrobials:
Use of antimicrobials in breeding flocks is authorised in accordance with Commission Regulation (EC) No 1177/2006:
•Antimicrobials are not used as a specific Salmonella control method in poultry;
•Used may be those antimicrobials only, which have a marketing authorisation in the Republic of Slovenia;
•Antimicrobials may be used only in exceptional circumstances specified in Article 2(2), points (a), (b) and (c) of Regulation
(EC) No 1177/2006. Use of antimicrobials in exceptional circumstances is allowed only on the basis of authorisation by
Veterinary Administration of the Republic of Slovenia. However, treatment without prior authorisation by VARS shall be
permissible in cases of excessive animal suffering on account of clinical signs of disease, or where the omission of
treatment could lead to spreading the disease or to great economic losses;
•Use of antimicrobials shall be based wherever possible on the results of bacteriological sampling and of susceptibility
testing.
•On conclusion of treatment, the veterinary organisation with concession, which had conducted the treatment, shall on
account of exceptional circumstances send a report in writing to relevant VARS Regional Office, including the data on the
flock under treatment, data on the use of antimicrobials, resistance testing results if conducted, and reasons for having
used relevant antimicrobials;

B. Salmonella spp. in Gallus Gallus - broiler flocks

Monitoring system

Sampling strategy

Broiler flocks

VARS
SAMPLING ON HOLDING
Sampling was carried out at the holdings within three weeks before broilers are leaving for slaughter in approved slaughterhouses. The results of the analysis of the samples must be known before animals leave for slaughterhouse.
Animal owner or holder of activity of the holding keeping broilers shall at his own expence take samples for analysis in order to detect the presence of Salmonella.
Official sampling was carried out in at least one flock of broilers at 10% of holdings with more than 5000 birds.

SAMPLING AT SLOUGHTERHOUSE
Sampling of broilers was carried out continually throughout the year in three (3) approved poultry slaughterhouses.
Sampling of carcases (neck skin) was carried out with the aim of establishing the level of contamination of poultry carcases in slaughterhouses with salmonella.
Slaughter batch of more than 2000 animals constitutes an epidemiological unit, if this is not possible, smaller batches was sampled. Slaughter batch means animals originating from a single flock delivered to the slaughter establishment in a single means of transport.
Sampled were broilers raised in the Republic of Slovenia only.
Sampling was carried out by the slaughterhouse official veterinarians.

Frequency of the sampling

Broiler flocks: Before slaughter at farm

Every flock is sampled
Official sampling: at least one flock on 10% of holdings with more than 5000 birds.

Broiler flocks: At slaughter (flock based approach)

In three (3) slaughterhouses where more than 2,000,000 broilers are slaughtered per year, the samples were taken each month. The number of samples was equally distributed on the basis of the annual quantity of slaughtered animals.

Type of specimen taken

Broiler flocks: Before slaughter at farm

Faeces or boot swabs.

Broiler flocks: At slaughter (flock based approach)

Neck skin

Methods of sampling (description of sampling techniques)

Broiler flocks: Before slaughter at farm

In every broiler flock at the holding, at least two pairs of boot/sock swabs shall be taken. All boot/sock swabs may be pooled into one sample.

Broiler flocks: At slaughter (flock based approach)

Slaughter batch samples were taken, after cooling but before any other handling of carcasses (e.g. cutting, packaging), a whole carcass or a skin sample was taken from the neck of one carcass or, if this is not enough, also part of the skin from one side of the carcass. It is recommended that, if possible, the whole carcass is sent to the laboratory because of potential crosscontamination of the carcass during the sampling.
A sample is taken with sterile tools (sterile knife, scissors, use of sterile gloves, etc.) and put into a sterile plastic bag. If skin is sampled, the sample must weigh approximately 50 g.
Samples were delivered to the laboratory as soon as possible, as a rule, immediately after sampling (on the same day) or within 24 hours of the sampling. In exceptional cases (holidays, weekend), the samples can be delivered to the laboratory within 72 hours after sampling. In the period from the sampling to the beginning of the analysis, the sampled material must be stored in a cold place, at the temperature of 4 oC (+/ 2 oC).

Case definition

Broiler flocks: Before slaughter at farm

Flock shall be considered positive where the S. Enteritidis or/and S. Typhimurium has been identified in the sample.

Broiler flocks: At slaughter (flock based approach)

A positive carcass sample is a sample from which salmonella was isolated.

Diagnostic/analytical methods used

Broiler flocks: Before slaughter at farm

Bacteriological method:
Amendment 1 of EN/ISO 6579-2002/Amd 1:2007

Broiler flocks: At slaughter (flock based approach)

Bacteriological method:
ISO 6579:2002

Serotypisation:
Kauffman-White-Le Minor

Other preventive measures than vaccination in place

Broiler flocks

Person, who is 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.
In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GAP, GHP, and record keeping.

Control program/mechanisms

The control program/strategies in place

Broiler flocks

National control programme for broilers is carried out in accordance with the national Rules on monitoring and control of salmonella in poultry of Gallus Gallus.

The control mechanisms envisages inter alia as follows:

- Registration of holdings, who are subjected to veterinary checks
- Regular official veterinary checks on holdings
- Movements of animals accompanied by prescribed documents
- Veterinary referral form must accompany flocks infected with salmonella
- Sampling of every flocks before leave for slaughter
- Compulsory notification in case salmonella is detected
- Measures if S.Enteritidis and/or S.Typhimurium was detected

Measures in case of the positive findings or single cases

Broiler flocks: Before slaughter at farm

SAMPLING ON HOLDING

On having identified the presence of serovars Salmonella Enteritidis and/or Salmonella Typhimurium, the business operator shall, based on the internal monitoring and control plan, provide for the implementation of the following measures shall apply:

1. no bird from the flock, in which Salmonella has been detected, shall be moved from the holding, unless for

slaughter to the slaughterhouse or for killing and destruction under official veterinary control, where:

-slaughter shall be carried out at the slaughterhouse as the last batch in the slaughtering process of that particular production day, by a method minimising the possibility of spreading Salmonella, and in accordance with the food hygiene law;

-products obtained from such poultry may be placed on the market or put into circulation if they have been subjected to processing guaranteeing the elimination of Salmonella, or they shall be removed and

used in accordance with the regulations governing the handling of animal by-products; the entire procedure shall be carried out under the control of official veterinarian;

2. on removal and/or dispatch of the flock, in which Salmonella has been detected, the manure and bedding shall be removed in accordance with the regulations governing the handling of animal by-products, followed by thorough cleaning and disinfection;
3. prior to repopulation, bacteriological control of the efficiency of cleaning and disinfection shall be carried out, with negative results.

In case of confirmed presence of other Salmonella serovars, the business operator shall conduct measures laid down in the internal monitoring and control plan.

Notification system in place

Notification and reporting must be carried out in accordance with the provisions of the Rules on monitoring and control of salmonella in poultry of Gallus Gallus.

Notification:

In the case of detection of Salmonella Enteritidis or Salmonella Typhimurium during sampling at the initiative of business operator, operator must inform VARS regional office within two working days after receipt of the laboratory results, by email, telephone or by fax.

Laboratory must inform VARS regional office in the case of detection of Salmonella Enteritidis or Salmonella Typhimurium in the samples taken by business operator or in the official samples the next working day after the analysis is completed.

In case of detection of other serovars laboratory must inform VARS regional office within five working days after the analysis is completed.

Reporting:

The laboratory sends a copy of the form, together with the copy of the investigation report, to the main office of the VARS (once per month) and the original sampling report to the business operator and, in the

event of official sampling, also to the official veterinarian.

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 ON HOLDING

In 2010, 2153 flocks were sampled. Salmonella was detected in 24 flocks.
Following serovars were identified: S. Chartres in seven (7) flocks, S. Saintpaul in one (1) flock, S. Infantis in 13 flocks, S. Typhimurium in one (1) flock and in two (2) flocks S. Coeln and S. Infantis were identified.

SAMPLING AT SLAUGHTERHOUSE

In 2010, 98 neck skin samples from 98 sloughter batches were analysed. Salmonella was detected in 5 samples/slaughter batches (5,1%). In all flocks S. Infantis was identified.

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

SAMPLING ON HOLDING

In 2010, Community target for broilers was achieved as Salmonella spp. was identified in less than 2% of broiler flocks.

SAMPLING AT SLAUGHTERHOUSE

As compared to 2009 (1,3% of positives) the percentage of positive samples in 2010 increased to 5,1% however, 35% less samples were analysed.

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

Monitoring system

Sampling strategy

Laying hens flocks

VARS
Sampling shall be conducted in all laying hen flocks at all the holdings with registered houses for rearing laying hens.
Animal owner or holder of activity of the holding keeping laying hens, shall at his own expence take samples for analysis in order to detect the presence of salmonella.

Sampling at the initiative of operators is carried out at day old chicks, at rearing flocks and at adult laying hens flocks.

Official sampling shall be conducted in accordance with point 2.1. of Annex to the Regulation(EC)No.1168/2006.
Official sampling may replace one sampling at the initiative of the operator.

Physical checks of the laying hen holdings are carried out on the basis of risk analysis. Each holding is assesed according to harmonised criteria. Based on the results of assesment holdings are checked every 6 months, once per year or every 2 years.

Frequency of the sampling

Laying hens: Day-old chicks

Every flock is sampled

Laying hens: Rearing period

Two weeks prior to entering the laying phase or two weeks before moving into laying unit.

Laying hens: Production period

Every 15 weeks. The first sampling is conducted at the age of 24+/-2 weeks.

Type of specimen taken

Laying hens: Day-old chicks

Internal linings of delivery boxes and/or dead chicks.

Laying hens: Rearing period

Faeces or boot swabs.

Laying hens: Production period

Faeces or boot swabs.

Methods of sampling (description of sampling techniques)

Laying hens: Day-old chicks

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

Laying hens: Rearing period

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

the cages in the dropping pits.

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

Two samples of faeces or two pairs of bootswabs may be pooled for analysis at the laboratory.

Laying hens: Production period

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

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

In the case of sampling by the official veterinarian, 250 ml containing at least 100 gram of dust shall be collected from prolific sources of dust throughout the house. If there is not sufficient dust, an additional sample of 150 grams naturally pooled faeces or an additional pair of boot swabs or socks shall be taken.

Case definition

Laying hens: Day-old chicks

Flock is considered positive where the presence of Salmonella Enteritidis and Salmonella Typhimurium (other than vaccine strains) is detected in samples of internal linings of delivery boxes or in dead chicks.

Laying hens: Rearing period

Flock is considered positive where the presence of Salmonella Enteritidis and Salmonella Typhimurium (other than vaccine strains) is detected in one or more sample taken by official veterinarian at the holding.

Laying hens: Production period

A laying flock is considered positive where the presence of Salmonella Enteritidis and Salmonella Typhimurium (other than vaccine strains) is detected in one or more samples in the laying flock.
A laying flock is considered positive also where the presence of Salmonella enteritidis and Salmonella typhimurium is not detected but antimicrobials or bacterial growth inhibitory have been detected in the official samples.

Diagnostic/analytical methods used

Laying hens: Day-old chicks

Bacteriological method:
Method in accordance with the OIE Manual, 5th ed., 2004;
Amendment 1 of EN/ISO 6579-2001/Amd 1:2007

Laying hens: Rearing period

Bacteriological method:
Amendment 1 of EN/ISO 6579-2001/Amd 1:2007

Laying hens: Production period

Bacteriological method:
Amendment 1 of EN/ISO 6579-2001/Amd 1:2007

Vaccination policy

Laying hens flocks

Vaccination programme referred to in Article 3(3) is not applied as the prevalence of S.Enteritidis/S.Typhimurium in laying hen flocks is below 10 %. Vaccination against Salmonella is not prohibited under national legislation, and thus, business operators may decide on performing voluntary vaccination. Vaccination by business operators is conducted on the basis of recommendations obtained from veterinary clinic veterinarians.

Currently, laying hen flocks are vaccinated against S.Enteritidis only. Live vaccine only is used in the vaccination of laying hen flocks, which is conducted during the rearing phase (rearing flocks).

Based on data obtained through inspection of laying hen holdings in 2010, approximately on 68 % of the holdings flocks are vaccinated against Salmonella, on 17% of the holdings flocks are not vaccinated and for 16% of holdings data on vaccination wasn't available. On holdings where flocks are not vaccinated approximately 10% of all flocks in 2010 was housed.

Use of vaccines in laying hen flocks is authorised in accordance with Commission Regulation (EC) No 1177/2006:

- Live salmonella vaccines may be used only if the manufacturer provides an appropriate method to distinguish bacteriologically wild-type strains of salmonella from vaccine strains;
- Live salmonella vaccines may be used in laying hens during production if the safety of the use has been demonstrated and they are authorised for such purpose in accordance with Directive 2001/82/EC;
- Authorised shall be the use of vaccines only, which have marketing authorisation for circulation in the Republic of Slovenia;
- Vaccination of animals may be prescribed or conducted by a veterinary clinic veterinarian. However, the veterinarian may dispense the vaccines accompanied by written use instructions to the animal owner, who may himself administer or continue administering vaccines to the animals. Animal owner shall follow the veterinarian's instructions.

Other preventive measures than vaccination in place

Laying hens flocks

Person, who is 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.

In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GAP, GHP, and record keeping.

Control program/mechanisms

The control program/strategies in place

Laying hens flocks

National control programme for laying hens is carried out in accordance with the national legislation, on the basis of the Rules for monitoring and control of salmonella.

The control mechanisms envisages inter alia as follows:

- Registration or approval of holdings, establishments, transporters, collection centres and dealers, who are subjected to veterinary control
- Regular official veterinary checks on holdings
- Movements of animals accompanied by prescribed documents
- Veterinary referral form must accompany flocks infected with salmonella
- Regular sampling of flocks
- Compulsory notification in case salmonella is detected

- Measures in the suspect holdings and in case the flocks is considered as positive due to detection of S.Enteritidis and/or S.Typhimurium

Measures in case of the positive findings or single cases

Laying hens flocks

Where S.Enteritidis or S.Typhimurium is detected, the the following measures to be implemented:

1) ban on animal movements from the positive flock, unless for slaughter or destruction of the flock. All birds in the flock must be slaughtered or destroyed so as to reduce as much as possible the risk of spreading Salmonella. If the flock is slaughtered or destroyed, the business operator shall provide for the following measures:

a. Slaughtering must be carried out in accordance with Community legislation on food hygiene, where the business operator of food business activity of slaughter shall ensure that the slaughter of animals originating from the positive flock is conducted as the last series in the slaughter process of that production day. Products derived from such birds may be placed on the market for human consumption if they are treated in a manner that guarantees the elimination of Salmonella. If not destined for human consumption, such products must be used or disposed of in accordance with Regulation (EC) No 1774/2002;

b. At killing or destruction of the flock, the business operator shall ensure that the killing and destruction are conducted in compliance with the regulations governing animal welfare in accordance with Regulation (EC) No 1774/2002.

2) eggs must not be placed on the market for human consumption. However eggs may be used for human consumption under the following conditions:

• eggs are considered as Class B eggs as defined in Article 2(4) of Commission Regulation (EC) No 557/2007 laying down detailed rules for implementing Council Regulation (EC) No 1028/2006 on marketing standards for eggs;
• eggs must be marked with the indication referred to in Article 10 of Commission Regulation (EC) No 557/2007 which clearly distinguishes them from Class A eggs prior to being placed on the market;
• eggs must not be delivered to packaging centres unless the VARS is satisfied with the measures to prevent possible cross-contamination of eggs from other flocks;
• eggs may be delivered only to approved egg processing establishment and must be treated in a manner that guarantees the elimination of Salmonella;

3) at the holding, epizootiological investigation shall be conducted and feed samples taken for testing for the presence of Salmonellae, where applicable for establishing the source of infection.

4) In order to exclude false-positive initial results if S.Enteritidis and/or S.Typhimurium is detected in samples taken by business operators, official veterinarian shall carry out official sampling, using the sampling protocol defined in point 4(b)(i, ii or iii) of Part D of Annex II to Regulation (EC) No 2160/2003. In addition to sampling in point 4(b), samples to verify the absence of use of antimicrobials, potentially affecting the results of analyses of sampling, shall be taken by official veterinarian. Since the detection of Salmonellae in samples taken by business operators, and until the results of official sampling are obtained, the protective measures shall apply to the flocks

5) In case that Salmonella enteritidis or Salmonella typhimurium is detected in a single laying flock at the holding, official sampling is carried out in all the other laying hen flocks at the holding. Official sampling shall be carried out according to point 2.2 of Annex 1 of Regulation (EC) No. 1168/2006.

In addition to sampling in point 2.2., samples to verify the absence of use of antimicrobials, potentially affecting the results of analyses of sampling, shall be taken by official veterinarian.

6) upon removal or dispatch of the flock in which Salmonella spp. has been identified, the manure and/or bedding shall be removed in accordance with regulations governing the handling of animal by-products and thorough cleaning and disinfection must be carried out;

before restocking, the bacteriological control shall be carried out as to the effectiveness of cleaning and disinfection, with negative results.

In case of presence of other Salmonella serovars, the business operator shall conduct measures laid down in the internal monitoring and control plan.

Notification system in place

Notification and reporting must be carried out in accordance with the provisions of the Rules on monitoring and control of salmonella in poultry of Gallus Gallus.

Notification:
In the case of detection of Salmonella Enteritidis or Salmonella Typhimurium during sampling at the initiative of business operator, operator must inform VARS regional office within two working days after receipt of the laboratory results, by email, telephone or by fax.
Laboratory must inform VARS regional office in the case of detection of Salmonella Enteritidis or Salmonella Typhimurium in the samples taken by business operator or in the official samples the next working day after the analysis is completed.
In case of detection of other serovars laboratory must inform VARS regional office within five working days after the analysis is completed.

Reporting:
The laboratory sends a copy of the form, together with the copy of the investigation report, to the main office of the VARS (once a month) and the original sampling report to the business operator and, in the event of official sampling, also to the official veterinarian.

Results of the investigation

There were 202 adult laying hen flocks, and 153 rearing laying hen flocks included in the Salmonella control programme of 2010. Salmonella spp. was identified in 9 adult laying hen flocks, and in 12 rearing flocks.

Adult flocks
Salmonella spp. was identified in 9 adult laying hen flocks. In 5 adult flocks Salmonella was detected during official routine sampling and, in 5 adult flocks in samples taken at the initiative of business operators. In one flock, Salmonella was detected during the official routine sampling and during the sampling at the initiative of business operators (same serotype). S. Enteritidis was detected in 1 adult laying hen flock, S.Tenneesse in 4 adult laying hen flocks, S. Montevideo in 2 adult laying hen flocks, S. Infantis and S.Chatres were detected in 1 flock each.

Rearing flocks:
The presence of Salmonella in rearing flocks was detected in 12 flocks. In eight flocks, Salmonella spp. was identified during sampling conducted on arrival of day-old chicks to the holding and in four flocks during sampling conducted two weeks before moving to laying phase. At day old chicks S.Chartres and S.

Saintpaul were detected in 4 flocks each. In the flocks sampled two weeks before laying period S.Ohio, Salmonella O6,7, S.Tennessee and S.Bovismorbificans were detected in 1 flock each.

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

The declining trend of infections with Salmonella Enteritidis/Salmonella Typhimurium in laying hen flocks continued in 2010, as S.Enteritidis was identified in a single adult laying hen flock, and in rearing flocks the infection with Salmonella Enteritidis/Salmonella Typhimurium was not identified at all.
As compared to 2008, where the Republic of Slovenia did not fully achieve the EU targets, the EU targets were fully met in 2009 and in 2010, as the number of adult laying hen flocks with identified Salmonella Enteritidis or Salmonella Typhimurium decreased by more than 10 % in each year.
Since 2004, the number of reported salmonellosis cases has been decreasing and decreasing trend of reported cases of salmonellosis in humans continues also in 2010.
The number of Salmonella outbreaks has gradually been decreasing ever since 2005. In 2009, 4 Salmonella outbreaks were reported, and eggs were the supposed source of infection in all these cases.
Considering the data in the CNB news of 2010, including the framework data on the number of outbreaks of communicable diseases reported, there were 74 communicable disease outbreaks reported in 2010. According to the preliminary data collected, in none of the 65 outbreaks, where final reports have already been available, Salmonella is found as the cause of disease. In 9 outbreaks, a final report has not been issued yet to date.

Additional information

Use of antimicrobials:
Use of antimicrobials in laying hen flocks is authorised in accordance with Commission Regulation (EC) No 1177/2006:

- •Antimicrobials are not used as a specific Salmonella control method in poultry;
- •Used may be those antimicrobials only, which have a marketing authorisation in the Republic of Slovenia;
- •Antimicrobials may be used only in exceptional circumstances specified in Article 2(2), points (a), (b) and (c) of Regulation (EC) No 1177/2006. Use of antimicrobials in exceptional circumstances is allowed only on the basis of authorisation by Veterinary Administration of the Republic of Slovenia. However, treatment without prior authorisation by VARS shall be permissible in cases of excessive animal suffering on account of clinical signs of disease, or where the omission of treatment could lead to spreading the disease or to great economic losses;
- •Use of antimicrobials shall be based wherever possible on the results of bacteriological sampling and of susceptibility testing.
- •On conclusion of treatment, the veterinary organisation with concession, which had conducted the treatment, shall on account of exceptional circumstances send a report in writing to relevant VARS Regional Office, including the data on the flock under treatment, data on the use of antimicrobials, resistance testing results if conducted, and reasons for having used relevant antimicrobials;

D. Salmonella spp. in bovine animals

Monitoring system

Sampling strategy

Disease is monitored on the basis of clinical signs and/or detection of salmonellosis in other animals at the same holding in accordance with national legislation on the basis of the Instructions on measures for the detection, prevention and suppression of salmonellosis.

Type of specimen taken

Animals at farm

Carcasses, rectal swabs, litter, feed.

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.

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.

Diagnostic/analytical methods used

Animals at farm

Bacteriological method: ISO/FDIS 6579, Anex D:2007, Serotipisation: Kauffman-White scheme

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. In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GAP, GHP, and record keeping.

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.
- Registration and/or approval of holdings, establishments, transporters, collection centres and dealers, who are subjected to veterinary checks
- Identified and registrated animals
- Regular official veterinary checks on holdings
- Movements of animals accompanied by prescribed documents

- Veterinary referral form to accompany sick animals and animals coming from holdings with an unverified or suspect epizootiological situation.

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

In case of presence of salmonelosis, or signs by which it may be suspected that an animal has become sick with or died of Salmonella infection, the animal keeper shall immediately notify thereof the veterinary organisation, and the latter shall notify thereof the relevant VARS Regional Office, submitting also monthly reports on the developments concerning the disease.

Results of the investigation

In 2010, no case of salmonelosis in bovine animals was confirmed.

E. Salmonella spp. in pigs

Monitoring system

Sampling strategy

Breeding herds

Active monitoring - at slaughterhouse
Sampling was carried out in all approved slaughterhouses with capacity of the slaughter more than 500 porcine animals per year (88% of all yearly porcine slaughter).
Sampling was carried out by the slaughterhouse official veterinarians.

Passive monitoring - at holding
Disease is monitored on the basis of clinical signs and/or detection of salmonellosis in other animals at the same holding in accordance with national legislation on the basis of the Instructions on measures for the detection, prevention and suppression of salmonellosis.

Multiplying herds

See breeding herds

Fattening herds

See breeding herds.

Frequency of the sampling

Breeding herds

At slaughterhouse: Sampling distributed evenly throughout the year

Multiplying herds

See breeding herds

Fattening herds at farm

See breeding herds

Type of specimen taken

Breeding herds

At slaughterhouse:
Faeces, ileocaecal lymph nodes, muscle sample for serology

At holding:
Carcasses, rectal swabs, litter, feed

Multiplying herds

See Breeding herds.

Fattening herds at farm

See Breeding herds.

Methods of sampling (description of sampling techniques)

Breeding herds

At slaughterhouse:
Lymph nodes are removed by hand with sterile glowes and stored in a sterile bag. Lymph nodes sample

should weight at least 25g (without surrounding tissue).
A faeces sample is taken prior to slaughter or a sample of intestinal content is taken after slaughter, upon the evisceration from the intestines, upon the aseptic opening of the intestinal wall, or a tied-up portion of the caecum containing an adequate quantity of faeces is submitted to the laboratory. The sample shall be stored in a sterile bag. At least 50g of faeces shall be taken.
A meat sample (pillar of the diaphragm) is taken with sterile tools and stored in a sterile bag. Approximately 50g of sample shoud be taken.
All three types of samples shall be taken from the same carcass.

At holding:
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.

Samples must be delivered to the laboratory in the shortest possible time, as a rule, immediately after sampling (on the same day) or within 24 hours after sampling. In the period from the sampling to the beginning of the analysis the sample material must be stored in a cold place, at the temperature of 4oC (+/ - 2oC).

Multiplying herds

See Breeding herds

Fattening herds at farm

See Breeding herds

Case definition

Breeding herds

At slaughterhouse:
Positive sample means a sample of lymph nodes or/and faeces where the zoonotic agent has been isolated from 25g.
Meat sample - positive sample means the sample where the result of ELISA testing is positive.

At holding:
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

Diagnostic/analytical methods used

Breeding herds

Bacteriological method: ISO 6579, Anex D:2007,
Serotipisation: Kauffman-White-Le Minor
Serological method: ELISA

Multiplying herds

See Breeding herds

Fattening herds at farm

See Breeding herds

Other preventive measures than vaccination in place

Breeding herds

Persons, who are 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. In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GAP, GHP, and record keeping.

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,
- Registration of holdings who are subjected to veterinary checks,
- Identified and registrated animals,
- Regular official veterinary checks on holdings,
- Movements of animals accompanied by prescribed documents,
- Veterinary referral form to accompany sick animals and animals coming from holdings with an unverified or
suspect epizootiological situation.

Multiplying herds

See Breeding herds

Fattening herds

See Breeding herds

Measures in case of the positive findings or single cases

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

In case of presence of salmonelosis, or signs by which it may be suspected that an animal has become sick with or died of Salmonella infection, the animal keeper shall immediately notify thereof the veterinary organisation, and the latter shall notify thereof the relevant VARS Regional Office, submitting also monthly reports on the developments concerning the disease.

Results of the investigation

At slaughterhouse

In 2010, 384 lymph nodes and faeces samples were analysed and 382 meat juice samples were serologicay tested.

52 meat juice samples were found serologicaly positive.

Salmonella was detected in 18 lymph nodes samples and in 21 faeces samples.

The following serovars were identified:

Lymph nodes - Typhimurium(7), Paratyphi B(3), Ohio(2), Tennessee(2), Enteritidis(1), Derby(1), Mbandaka(1), Stanleyville(1).

Faeces - Typhimurium(6), Ohio(4), Derby(4), Tennessee(3), Enteritidis(2), Stanleyville(1), Infantis(1)

At holding

In 2010, no case of salmonelosis in porcine animals was confirmed.

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

As compared to the results of Baseline survey in slaughter pigs which was conducted in 2006/2007 and where the salmonella was isolated from 6,09% of limph node samples, the results from 2010 monitoring are quite favourable as to the fact that percentage of salmonella positive limph node samples decreased to 4,7%.

The serological investigation results of meat juice samples indicate slight increase in the percentage of positive samples (13,6%) as to compared with results in 2006/2007 Baseline survey (10,9%).

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

Monitoring system

Sampling strategy

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

VARS

There are no breeding flocks in the Republic of Slovenia.

Meat production flocks

SAMPLING ON HOLDING

Sampling was carried out on holdings within three weeks before birds are moved to the slaughterhouse.
Results of the analysis of the sampling must be known before animals leave for slaughter.
The results remain valid until maximum six weeks after sampling and therefore repeated sampling of the same flock might be required.
Animal owner shall at his own expences take samples for analysis in order to detect the presence of Salmonella.

Official routine sampling is carried out in all flocks on 10 % of the holdings with at least 500 fattening turkeys once a year.
In addition, official sampling is carried out in:
— all flocks on the holding when one flock tested positive for Salmonella enteritidis or Salmonella typhimurium in samples taken by the food business operator, unless the meat of the turkeys in the flocks is destined for industrial heat treatment or another treatment to eliminate salmonella, and
— all flocks on the holding when one flock tested positive for Salmonella enteritidis or Salmonella typhimurium during the previous round in samples taken by the food business operator

SAMPLING AT SLOUGHTERHOUSE

Sampling of turkeys was carried out continually throughout the year in one (1) approved poultry slaughterhouse.
Sampling of carcases (neck skin) was carried out with the aim of establishing the level of contamination of turkey carcases in slaughterhouses with salmonella.
Slaughter batch of more than 2000 animals constitutes an epidemiological unit, if this is not possible, smaller batches was sampled. Slaughter batch means animals originating from a single flock delivered to the slaughter establishment in a single means of transport.
Sampled were turkeys raised in the Republic of Slovenia only.
Sampling was carried out by the slaughterhouse official veterinarians.

Frequency of the sampling

Meat production flocks: Before slaughter at farm

Within tree weeks prior to slaughter.

Meat production flocks: At slaughter (flock based approach)

Sampling distributed evenly throughout the year

Type of specimen taken

Meat production flocks: Before slaughter at farm

Two pairs of boot swabs.

Meat production flocks: At slaughter (flock based approach)

Neck skin

Methods of sampling (description of sampling techniques)

Meat production flocks: Before slaughter at farm

At least two pairs of boot/sock swabs shall be taken. For free range flocks of turkeys, samples shall only be collected in the area inside the house. All boot/sock swabs may be pooled into one sample.

Meat production flocks: At slaughter (flock based approach)

Slaughter batch samples were taken, after cooling but before any other handling of carcasses (e.g. cutting, packaging), a whole carcass or a skin sample was taken from the neck of one carcass or, if this is not enough, also part of the skin from one side of the carcass. It is recommended that, if possible, the whole carcass is sent to the laboratory because of potential crosscontamination of the carcass during the sampling.
A sample is taken with sterile tools (sterile knife, scissors, use of sterile gloves, etc.) and put into a sterile plastic bag. If skin is sampled, the sample must weigh approximately 50 g.
Samples were delivered to the laboratory as soon as possible, as a rule, immediately after sampling (on the same day) or within 24 hours of the sampling. In exceptional cases (holidays, weekend), the samples can be delivered to the laboratory within 72 hours after sampling. In the period from the sampling to the beginning of the analysis, the sampled material must be stored in a cold place, at the temperature of 4 oC (+/ 2 oC).

Case definition

SAMPLING ON HOLDING
A flock of fattening turkeys is considered positive where the presence of Salmonella Enteritidis and/or Salmonella Typhimurium (other than vaccine strains) was detected in the flock at any occasion.

Monitoring system

Case definition

Meat production flocks: Before slaughter at farm

A flock of fattening turkeys is considered positive where the presence of Salmonella Enteritidis and/or Salmonella Typhimurium (other than vaccine strains) was detected in the flock at any occasion.

Meat production flocks: At slaughter (flock based approach)

A positive carcass sample is a sample from which salmonella was isolated.

Diagnostic/analytical methods used

Meat production flocks: Before slaughter at farm

Bacteriological method:
Amendment 1 of EN/ISO 6579-2002/Amd 1:2007

Meat production flocks: At slaughter (flock based approach)

Bacteriological method:
ISO 6579:2002

Serotypisation:
Kauffman-White- Le Minor

Other preventive measures than vaccination in place

Meat production flocks

Person, who is 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.
In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GAP, GHP, and record keeping.

Control program/mechanisms

The control program/strategies in place

Meat production flocks

National control programme for turkeys is carried out in accordance with the national Rules on monitoring and control of salmonella in turkeys.

The control mechanisms envisages inter alia as follows:
- Registration of holdings, who are subjected to veterinary checks
- Regular official veterinary checks on holdings
- Movements of animals accompanied by prescribed documents
- Veterinary referral form must accompany flocks infected with salmonella
- Sampling of every flocks before leave for slaughter
- Compulsory notification in case salmonella is detected
- Measures if S. Enteritidis and/or S. Typhimurium was detected

Measures in case of the positive findings or single cases

SAMPLING ON HOLDING
On having identified the presence of serovars Salmonella Enteritidis and/or Salmonella Typhimurium, the business operator shall, based on the internal monitoring and control plan, provide for the implementation of the following measures shall apply:
1. no bird from the flock, in which Salmonella has been detected, shall be moved from the holding, unless for
slaughter to the slaughterhouse or for killing and destruction under official veterinary control, where:
- slaughter shall be carried out at the slaughterhouse as the last batch in the slaughtering process of that particular production day, by a method minimising the possibility of spreading Salmonella, and in accordance with the food hygiene law;
- products obtained from such poultry may be placed on the market or put into circulation if they have been subjected to processing guaranteeing the elimination of Salmonella, or they shall be removed and
used in accordance with the regulations governing the handling of animal by-products; the entire procedure shall be carried out under the control of official veterinarian;

2. on removal and/or dispatch of the flock, in which Salmonella has been detected, the manure and bedding shall be removed in accordance with the regulations governing the handling of animal by-products, followed by thorough cleaning and disinfection;
3. prior to repopulation, bacteriological control of the efficiency of cleaning and disinfection shall be carried out, with negative results.

In case of confirmed presence of other Salmonella serovars, the business operator shall conduct measures laid down in the internal monitoring and control plan.

Notification system in place

Notification and reporting must be carried out in accordance with the provisions of the Rules on monitoring and control of salmonella in turkeys.

Notification:
In the case of detection of Salmonella Enteritidis or Salmonella Typhimurium during sampling at the initiative of business operator, operator must inform VARS regional office within two working days after receipt of the laboratory results, by email, telephone or by fax.
Laboratory must inform VARS regional office in the case of detection of Salmonella Enteritidis or Salmonella Typhimurium in the samples taken by business operator or in the official samples the next working day after the analysis is completed.
In case of detection of other serovars laboratory must inform VARS regional office within five working days after the analysis is completed.

Reporting:
The laboratory sends a copy of the form, together with the copy of the investigation report, to the main office of the VARS (once per month) and the original sampling report to the business operator and, in the event of official sampling, also to the official veterinarian.

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 ON HOLDING
In 2010, 112 fattening turkey flocks were tested before slaughter. Salmonella spp. was identified in one flock only (S.Saintpaul).

SAMPLING AT SLAUGHTERHOUSE
In 2010, 50 neck skin samples from 50 sloughter batches were analysed. Salmonella was detected in 2 samples/slaughter batches (4%). In one (1) flock S. Chartres and in one (1) S. Typhimurium was identified.

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

SAMPLING ON HOLDING
The Community target for turkeys was achieved during the first year of implementation of the National control programmes as Salmonella was detected in less than 1% of turkey flocks and S. Enteritidis and/or S. Typhimurium was not identified in any of the turkey flocks.

SAMPLING AT SLAUGHTERHOUSE
As compared to 2008 (12,5% of positives), the percentage of positive samples in 2010 decreased to 4% therefore, we find the situation concerning Salmonella in turkeys favourable.

Table Salmonella in breeding flocks of Gallus gallus

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	S. 1,4,[5],12:i:-
Gallus gallus (fowl) - parent breeding flocks for egg production line - day-old chicks	4	VARS	Flock	4	0						
Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period	4	VARS	Flock	4	0						
Gallus gallus (fowl) - parent breeding flocks for egg production line - adult	6	VARS	Flock	6	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks	81	VARS	Flock	81	5	0	0	0	0	0	0
Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period	90	VARS	Flock	90	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - adult	159	VARS	Flock	159	0						

	Salmonella spp., unspecified	S. Cotham	S. Derby	S. Montevideo	S. group O:7
Gallus gallus (fowl) - parent breeding flocks for egg production line - day-old chicks					
Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period					
Gallus gallus (fowl) - parent breeding flocks for egg production line - adult					
Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks	0	1	1	4	4

Table Salmonella in breeding flocks of Gallus gallus

	Salmonella spp., unspecified	S. Cotham	S. Derby	S. Montevideo	S. group O:7
Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period					
Gallus gallus (fowl) - parent breeding flocks for broiler production line - adult					

Footnote:

Parent breeding flocks for broiler production line - day old chicks:
5 flocks were found positive:
In four (4) flocks S. Montevideo and S.O:6,7 were identified and in one (1)flock S. Cotham and S. Derby were identified.

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Derby	S. Infantis	S. Mbandaka
Pigs - at slaughterhouse - animal sample - faeces - Monitoring - official sampling	VARS	Animal	384	21	2	6	0	0	4	1	0
Pigs - at slaughterhouse - animal sample - lymph nodes - Monitoring - official sampling	VARS	Animal	384	18	1	7	0	0	1	0	1

	S. Ohio	S. Paratyphi B	S. Stanleyville	S. Tennessee
Pigs - at slaughterhouse - animal sample - faeces - Monitoring - official sampling	4	0	1	3
Pigs - at slaughterhouse - animal sample - lymph nodes - Monitoring - official sampling	2	3	1	2

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Bovismorbificans	S. Chartres
Gallus gallus (fowl) - laying hens - day-old chicks	114	VARS	Flock	114	8	0	0	0	0	0	4
Gallus gallus (fowl) - laying hens - during rearing period	114	VARS	Flock	114	4	0	0	0	0	1	0
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling	202	VARS	Flock	202	9	1	0	0	0	0	1
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry	202	VARS	Flock	202	4	0	0	0	0	0	1
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling	202	VARS	Flock	66	5	1	0	0	0	0	0
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - suspect sampling	202	VARS	Flock	4	0						
Gallus gallus (fowl) - broilers - before slaughter - at farm - Control and eradication programmes - official and industry sampling	2153	VARS	Flock	2153	24	0	1	0	0	0	7
Turkeys - fattening flocks - before slaughter - at farm - Control and eradication programmes - official and industry sampling	112	VARS	Flock	112	1	0	0	0	0	0	0
Gallus gallus (fowl) - broilers - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling	2153	VARS	Slaughter batch	99	5	0	0	0	0	0	0

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Bovismorbificans	S. Chartres
Turkeys - fattening flocks - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling	112	VARS	Slaughter batch	50	2	0	1	0	0	0	1

	S. Coeln	S. Infantis	S. Montevideo	S. Ohio	S. Saintpaul	S. Tennessee	S. group O:7
Gallus gallus (fowl) - laying hens - day-old chicks	0	0	0	0	4	0	0
Gallus gallus (fowl) - laying hens - during rearing period	0	0	0	1	0	1	1
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling	0	1	2	0	0	4	0
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry	0	0	2	0	0	1	0
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling	0	1	0	0	0	3	0
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - suspect sampling							
Gallus gallus (fowl) - broilers - before slaughter - at farm - Control and eradication programmes - official and industry sampling	2	15	0	0	1	0	0

Table Salmonella in other poultry

	S. Coeln	S. Infantis	S. Montevideo	S. Ohio	S. Saintpaul	S. Tennessee	S. group O:7
Turkeys - fattening flocks - before slaughter - at farm - Control and eradication programmes - official and industry sampling	0	0	0	0	1	0	0
Gallus gallus (fowl) - broilers - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling	0	5	0	0	0	0	0
Turkeys - fattening flocks - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling	0	0	0	0	0	0	0

Footnote:

In two (2) broiler flocks (sampling before slaughter), two (2) Salmonella serovars were identified: Coeln and Infantis.

2.1.5 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.

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)

In 2010, out of 77 official feed samples tested, no positive samples were detected.

Recent actions taken to control the zoonoses

Feedingstuffs
Monitoring system:
- sampling strategy: target sampling (in accordance with the Programme of feed control in 2010),
-in approved and registred FBOs (including agricultural holdings, import),
-preventive measures: own controls by holders of activity (HACCP),
-control programme: Program of feed control in 2010 in accordance with Article 7(2) and Article 78(4) of the Veterinary Compliance Criteria Act (VCCA; UL RS 93/05), and Articles 41, 43, and 45(2a) of the Regulation (EC) No. 882/2004 (OJ L 165/04),
-measures in case of positive findings: in accordance with Article 4(2) and Article 8(5) of the Rules of feed safety criteria (UL RS 101/06, 70/07, 10/09, 44/09, 52/10),
-notification system in place: RASFF system and mutual notification between the CA in the sector of food safety, in accordance with the Decree coordinating the operation of ministries and agencies within ministries, which are competent for food and feed safety, animal health and welfare, and plant health (UL RS 82/10).

Additional information

Feedingstuffs
-frequency of the sampling - phases: approved feed manufacturers (20 samples), other approved FBOs (placing on the market) + registered FBOs (30 samples), agricultural holdings (20 samples), import (10 samples)
-description of sampling techniques: in accordance with Annex I of the Commission Regulation (EC) No 152/2009 laying down the methods of sampling and analysis for the official control of feed (UL L 54/2009)
-definision of positive finding: analysis result (1= positive, 0= negative)
-analytical methods used: ISO/FDIS 6579:2002 SOP 221

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Compound feedingstuffs for cattle - final product	VARS	Batch	25g	12	0			
Compound feedingstuffs for pigs - final product	VARS	Batch	25g	17	0			
Compound feedingstuffs for poultry - laying hens - final product	VARS	Batch	25g	14	0			
Compound feedingstuffs for poultry - broilers - final product	VARS	Batch	25g	15	0			
Compound feedingstuffs for fish - final product	VARS	Batch	25g	1	0			
Compound feedingstuffs for turkeys - final product	VARS	Batch	25g	1	0			
Compound feedingstuffs, not specified - final product (for bees)	VARS	Batch	25g	1	0			
Pet food - final product (Compound feedingstuffs for dogs)	VARS	Batch	25g	2	0			

Table Salmonella in feed material of animal origin

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

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of cereal grain origin - wheat derived	VARS	Batch	25g	1	0			
Feed material of oil seed or fruit origin - rape seed derived	VARS	Batch	25g	1	0			
Feed material of oil seed or fruit origin - soya (bean) derived	VARS	Batch	25g	7	0			
Other feed material - other plants [1)]	VARS	Batch	25g	1	0			
Other feed material (feed aditive)	VARS	Batch	25g	1	0			
Premixtures (for laying hens)	VARS	Batch	25g	1	0			
Silage (maize)	VARS	Batch	25g	1	0			

Comments:

[1)] Oats

2.1.6 Salmonella serovars and phagetype distribution

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

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
Sources of isolates	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Number of isolates in the laboratory						40				6		60	
Number of isolates serotyped	0	0	0	0	0	40	0	0	0	6	0	60	0
Number of isolates per serovar													
S. Bovismorbificans						0				0		1	
S. Chartres						0				0		13	
S. Coeln						0				0		2	
S. Cotham						0				0		1	
S. Derby						5				0		1	
S. Enteritidis						3				0		2	

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
Sources of isolates	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Number of isolates in the laboratory						40				6		60	
Number of isolates serotyped	0	0	0	0	0	40	0	0	0	6	0	60	0
Number of isolates per serovar													
S. Infantis						2				6		13	
S. Mbandaka						1				0		0	
S. Montevideo						0				0		8	
S. Ohio						6				0		1	
S. Paratyphi B var. Java						3				0		0	
S. Saintpaul						0				0		8	
S. Stanleyville						2				0		0	
S. Tennessee						5				0		8	
S. Typhimurium						13				0		1	
S. group O:7						0				0		1	

Table Salmonella serovars in animals

Serovar	Other poultry		
Sources of isolates	Monitoring	Clinical	Surveillance
Number of isolates in the laboratory	2		1
Number of isolates serotyped	2	0	1
Number of isolates per serovar			
S. Bovismorbificans	0		0
S. Chartres	1		0
S. Coeln	0		0
S. Cotham	0		0
S. Derby	0		0
S. Enteritidis	0		0
S. Infantis	0		0
S. Mbandaka	0		0
S. Montevideo	0		0
S. Ohio	0		0
S. Paratyphi B var. Java	0		0

Table Salmonella serovars in animals

Serovar / Sources of isolates	Other poultry		
	Monitoring	Clinical	Surveillance
Number of isolates in the laboratory	2		1
Number of isolates serotyped	2	0	1
Number of isolates per serovar			
S. Saintpaul	0		1
S. Stanleyville	0		0
S. Tennessee	0		0
S. Typhimurium	1		0
S. group O:7	0		0

Footnote:

In some cases for single flock more than one isolate was reported.

2.1.7 Antimicrobial resistance in Salmonella isolates

A. Antimicrobial resistance in Salmonella in foodstuff derived from cattle

Sampling strategy used in monitoring

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.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

MIC was determined by broth dilution method using CRL AR recommended antimicrobial pannel:
minoglycosides: Streptomycin, Gentamycin.
Amphenicols: Chloramphenicol.
Beta-lactamic: Ampicillin.
Cephalosporins: Cefotaxim,Ceftazidim.
Quinolones: Nalidixinic acid.
Fluoroquinolones: Ciprofloxacin.
Sulphonamides: Sulfonamides.
Trimethoprim.
Tetracyclines: Tetracycline.

Cut-off values used in testing

According to CLSI (former NCCLS) and CRL AR recommendations.

Control program/mechanisms

Recent actions taken to control the zoonoses

Introduced monitoring.

Results of the investigation

Four (4) strains of Salmonella enterica from mixed meat from FBO internal control, belonging to three (3) serovars were tested. One (1) strain of serovar Thompson was fully sensitve as well as one (1) of two (2) strains of Enteritidis. The other Enteritidis strain was resistant to Ciprofloxacin and Nalidixic acid. The strain of serovar Typhimurium was resistant to Chloramphenicol, Tetracycline, Sulfonamide, Streptomycin and Ampicillin.

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

It seems that cattle as such is not a major source of Salmonella for people. Most likely contamination of food containing beef occures later by mixing it with other kinds of meat or other food ingredients. So in-process control in food industry is crucial for preventing food-borne Salmonella infections in humans especially with multiresistanrt strains.

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

Cattle doesn't seem to be a major source of Salmonella infections in humans.

B. Antimicrobial resistance in Salmonella in foodstuff derived from poultry

Sampling strategy used in monitoring

Frequency of the sampling

VARS

Subjected to test are isolates obtained within the monitoring of zoonoses and zoonotic agents and from all other samples tested within National Veterinary Institute. At least one isolate from each epidemiological unit.

Type of specimen taken

VARS

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

Methods of sampling (description of sampling techniques)

VARS

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

Procedures for the selection of isolates for antimicrobial testing

VARS

At least one isolate from each epidemiological unit.

Methods used for collecting data

VARS

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

VARS

See the monitoring for Salmonella in poultry meat - at processing plants.
Broth dilution method according to CLSI and CRL AR recommendations.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

VARS

MIC was determined by broth dilution method using CRL AR recommended antimicrobial pannel:
minoglycosides: Streptomycin, Gentamycin.
Amphenicols: Chloramphenicol.
Beta-lactamic: Ampicillin.
Cephalosporins: Cefotaxim,Ceftazidim.
Quinolones: Nalidixinic acid.

Fluoroquinolones: Ciprofloxacin.
Sulphonamides: Sulfonamides.
Trimethoprim.
Tetracyclines: Tetracycline.

Cut-off values used in testing

According to CLSI (former NCCLS) and CRL AR recommendations.

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

Eighteen (18) strains of Salmonella enterica belonging to seven (7) serovars from meat of bloilers (Gallus gallus) were tested. Only strains of serovars Chartres, Enteritidis and Senftenberg were fully sensitive. Of twelve (12) strains of serovar Infantis only two (16.7%) were fully sensitive while two (2) were resistant to Ciprofloxacin, Nalidixic acid and Sulfonamides, seven (7) were resistant also to Tetracycline and one (1) also to Streptomycin. The last resistance pathern was found also in one (1) strain of serovar Kentucky. One (1) strain of serovar Virchow was resistant to Ciprofloxacin, Nalidixic acid, Ampicillin and Tetracycline. Four strains belonging to the serovars Chartres, Kentucky, Saintpaul and Typhimurium from turkey meat were tested. Serovar Chartres was resistant to Ciprofloxacin and nalidixic acid. the other three serovars were all resistant to Tetracycline, Ciprofloxacin, Nalidixic acid, Sulfonamide, Streptomycin and Ampicillin. Additionally serovar Kentucky was resistant to Gentamicin, Saintpaul to Trimethoprim and Typhimurium to CHloramphenicol.

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

The salmonella prevalence in poultry is low, so not many isolates were tested. We found multiresistant strains of serovars Infantis, Kentucky, saintpaul, Typhimurium and Virchow. The strains of serovars Enteritidis, Chartres and Senftenberg were fully sensitive. The results of poultry examinations for Salmonella do not indicate the poultry to be the major source of multiresistant strains however regarding big consumption of poultry meat it should not be neglected as a possible source of multiresistant strains for humans.

C. Antimicrobial resistance in Salmonella in pigs

Sampling strategy used in monitoring

Frequency of the sampling

VARS

Subjected to test are isolates from all samples tested within National Veterinary Institute. At least one isolate from each epidemiological unit.

Type of specimen taken

Faeces

Procedures for the selection of isolates for antimicrobial testing

At least one isolate from each epidemiological unit.

Laboratory methodology used for identification of the microbial isolates

Broth dilution method according to CLSI and CRL AR recommendations.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

MIC was determined by broth dilution method using CRL AR recommended antimicrobial pannel:
Aminoglycosides: Streptomycin, Gentamycin.
Amphenicols: Chloramphenicol.
Beta-lactamic: Ampicillin.
Cephalosporins: Cefotaxim,Ceftazidim.
Quinolones: Nalidixinic acid.
Fluoroquinolones: Ciprofloxacin.
Sulphonamides: Sulfonamides.
Trimethoprim.
Tetracyclines: Tetracycline.

Cut-off values used in testing

According to CLSI (former NCCLS) and CRL AR cecommendations.

Notification system in place

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

Results of the investigation

Thirty-four (34) strains of Salmonella enterica belonging to 9 serovars from pigs were tested. All strains of serovars Enteritidis, infantis, Mbandaka,Ohio, Paratyphi B var. Java, Stanleyville and Tennessee were fully susceptible.Three (3) of four (4) strains of serovar Derby were resistant to tetracycline. Of eleven (11) strains of serovar Typhimurium only three (27.3%) were fully susceptible, while all the others were resistant to at least four (4) antimicrobials, one of them even to seven (7) antimicrobials. Only to the 3rd generation of Cephalosporins no resistance was found The highest resistance ((72.3%) was found to Sulfonamide, Streptomycin, Ampicillin and Tetracycline. Six strains (54.5%) were resistant to Ciprofloxacin, Nalidixic acid and Chkoramphenicol.

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

Multiresistant strains of S. Typhimurium were found, so rational use of antimicrobials and further

monitoring and effective measures of Salmonella control in primary production are needed.

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

S. Typhimurium and other serovars should still be monitored and adequate measures should be taken to minimise the threat of spreading resistance to antimicrobials, especially quinolons.

D. Antimicrobial resistance in Salmonella in poultry

Sampling strategy used in monitoring

Frequency of the sampling

VARS

Subjected to test are isolates obtained within the monitoring of zoonoses and zoonotic agents and from all other samples tested within 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.
Broth dilution method according to CLSI and CRL AR recommendations.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

MIC was determined by broth dilution method using CRL AR recommended antimicrobial pannel:
Aminoglycosides: Streptomycin, Gentamycin.
Amphenicols: Chloramphenicol.
Beta-lactamic: Ampicillin.
Cephalosporins: Cefotaxim,Ceftazidim.
Quinolones: Nalidixinic acid.
Fluoroquinolones: Ciprofloxacin.
Sulphonamides: Sulfonamides.
Trimethoprim.
Tetracyclines: Tetracycline.

Cut-off values used in testing

According to CLSI (former NCCLS) and CRL AR recommendations.

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

Thirteen (13) strains of Salmonella enterica belonging to 7 serovars isolated from laying hens were tested. All were fully susceptible.

Fifteen (15) strains from broilers of Gallus gallus belonging to eight (8) serovars were tested. All the strains of serovars Coeln, Cotham, Derby, Saintpaul and Tennessee were fully susceptibe. One (1) of three (3) strains of serovar Chartres was resistant to Ciprofloxacin, Nalidixic acid, Sulfonamide and Tetracycline and so were all the five (5) strains of serovar Infantis. One (1) strains of serovar Typhimurium was resistant to Chloramphenicol, Sulfonamide, Streptomycin, Ampicillin and Tetracycline.

Only one (1) starin of serovar Saintpaul from turkeys was tested and it was fully sensitive.

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

Considering high consumption of fowl meat ant meat products, fowl might be an important source of resistant strains. Especially multiresistant strains of serovars Infantis, Chartres and Typhimurium present a possible threat for problems in therapy and as vectors of resitance genes, that might spread to other serovars.

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 one of major sources of Salmonella for humans, it is not considered to be the major source of multiresistant strains, too.

Table Antimicrobial susceptibility testing of Salmonella in Pigs

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. Derby		S. Infantis		S. Mbandaka		S. Ohio		S. Paratyphi B var. Java		S. Stanleyville		S. Tennessee	
Isolates out of a monitoring program (yes/no)	yes		yes				yes		yes		yes		yes		no		yes		yes	
Number of isolates available in the laboratory	3		11				4		1		1		5		2		2		5	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	3	0	11	6			4	0	1	0	1	0	5	0	2	0	2	0	5	0
Cephalosporins - 3rd generation cephalosporins	3	0	11	0			4	0	1	0	1	0	5	0	2	0	2	0	5	0
Fluoroquinolones - Ciprofloxacin	3	0	11	6			4	0	1	0	1	0	5	0	2	0	2	0	5	0
Quinolones - Nalidixic acid	3	0	11	6			4	0	1	0	1	0	5	0	2	0	2	0	5	0
Trimethoprim	3	0	11	2			4	0	1	0	1	0	5	0	2	0	2	0	5	0
Sulphonamides - Sulfonamide	3	0	11	8			4	0	1	0	1	0	5	0	2	0	2	0	5	0
Aminoglycosides - Streptomycin	3	0	11	8			4	0	1	0	1	0	5	0	2	0	2	0	5	0
Aminoglycosides - Gentamicin	3	0	11	1			4	0	1	0	1	0	5	0	2	0	2	0	5	0
Penicillins - Ampicillin	3	0	11	8			4	0	1	0	1	0	5	0	2	0	2	0	5	0
Tetracyclines - Tetracycline	3	0	11	8			4	3	1	0	1	0	5	0	2	0	2	0	5	0
Fully sensitive	3	3	11	3			4	1	1	1	1	1	5	5	2	2	2	2	5	5
Resistant to 1 antimicrobial							4	3												
Resistant to 4 antimicrobials			11	1																
Resistant to >4 antimicrobials			11	7																
Number of multiresistant S. Typhimurium - with penta resistance			11	1																
Number of multiresistant S. Typhimurium - resistant to other antimicrobials			11	6																

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

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. Chartres		S. Coeln		S. Cotham		S. Derby		S. Infantis		S. Saintpaul		S. Tennessee	
Isolates out of a monitoring program (yes/no)			yes				yes		yes		yes		yes		yes		yes		yes	
Number of isolates available in the laboratory			1				3		1		1		1		5		2		1	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol			1	1			3	0	1	0	1	0	1	0	5	0	2	0	1	0
Cephalosporins - 3rd generation cephalosporins			1	0			3	0	1	0	1	0	1	0	5	0	2	0	1	0
Fluoroquinolones - Ciprofloxacin			1	0			3	1	1	0	1	0	1	0	5	5	2	0	1	0
Quinolones - Nalidixic acid			1	0			3	1	1	0	1	0	1	0	5	5	2	0	1	0
Trimethoprim			1	0			3	0	1	0	1	0	1	0	5	0	2	0	1	0
Sulphonamides - Sulfonamide			1	1			3	1	1	0	1	0	1	0	5	5	2	0	1	0
Aminoglycosides - Streptomycin			1	1			3	0	1	0	1	0	1	0	5	0	2	0	1	0
Aminoglycosides - Gentamicin			1	0			3	0	1	0	1	0	1	0	5	0	2	0	1	0
Penicillins - Ampicillin			1	1			3	0	1	0	1	0	1	0	5	0	2	0	1	0
Tetracyclines - Tetracycline			1	1			3	1	1	0	1	0	1	0	5	5	2	0	1	0
Fully sensitive							3	2	1	1	1	1	1	1			2	2	1	1
Resistant to 3 antimicrobials							3	1							5	5				
Resistant to >4 antimicrobials			1	1																

Footnote:

Isolates of S.Typhimurium, S.Chartres, S.Coeln, S.Infantis and one isolate of S.Saintpaul originate from broilers.
Isolates of S.Cotham, S.Derby, S.Tennessee and one isolate of S.Sainpaul originate from breeding flocks.

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

Salmonella	Salmonella spp.		S. Chartres		S. Enteritidis		S. Infantis		S. Kentucky		S. Senftenberg		S. Typhimurium		S. Virchow	
Isolates out of a monitoring program (yes/no)			no		no		yes		no		no		yes		no	
Number of isolates available in the laboratory			1		1		12		1		1		1		1	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol			1	0	1	0	12	0	1	0	1	0	1	1	1	0
Fluoroquinolones - Ciprofloxacin			1	0	1	0	12	10	1	1	1	0	1	1	1	1
Quinolones - Nalidixic acid			1	0	1	0	12	10	1	1	1	0	1	1	1	1
Trimethoprim			1	0	1	0	12	0	1	0	1	0	1	0	1	0
Sulphonamides - Sulfonamide			1	0	1	0	12	10	1	1	1	0	1	1	1	0
Aminoglycosides - Streptomycin			1	0	1	0	12	1	1	1	1	0	1	1	1	0
Aminoglycosides - Gentamicin			1	0	1	0	12	0	1	1	1	0	1	0	1	0
Penicillins - Ampicillin			1	0	1	0	12	0	1	1	1	0	1	1	1	1
Tetracyclines - Tetracycline			1	0	1	0	12	8	1	1	1	0	1	1	1	1
Fully sensitive			1	1	1	1	12	2			1	1				
Resistant to 2 antimicrobials							12	2								
Resistant to 3 antimicrobials							12	7							1	1
Resistant to 4 antimicrobials							12	1								
Resistant to >4 antimicrobials									1	1			1	1		
Cephalosporins - Cefotaxim			1	0	1	0	12	0	1	0	1	0	1	0	1	0
Cephalosporins - Ceftazidim			1	0	1	0	12	0	1	0	1	0	1	0	1	0

Footnote:

Strains of serovars Infatnis (seven of twelve tested) and Typhimurium are from zoonoses monitoring programme. Strains of serovars Chartres, Enteritidis, Infantis (five of twelve tested), Kentucky, Senftenberg and Virchow are from FBO monitoring (internal control).

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

Table Antimicrobial susceptibility testing of Salmonella in Turkeys

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. Saintpaul	
Isolates out of a monitoring program (yes/no)							yes	
Number of isolates available in the laboratory	0		0		0		1	
Antimicrobials:	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol							1	0
Cephalosporins - 3rd generation cephalosporins							1	0
Fluoroquinolones - Ciprofloxacin							1	0
Quinolones - Nalidixic acid							1	0
Trimethoprim							1	0
Sulphonamides - Sulfonamide							1	0
Aminoglycosides - Streptomycin							1	0
Aminoglycosides - Gentamicin							1	0
Penicillins - Ampicillin							1	0
Tetracyclines - Tetracycline							1	0
Fully sensitive							1	1

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

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. Chartres		S. Infantis		S. Montevideo		S. Ohio		S. Saintpaul		S. Tennessee	
Isolates out of a monitoring program (yes/no)	yes						yes		yes		yes		yes		yes		yes	
Number of isolates available in the laboratory	1						3		1		1		1		1		5	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	1	0					3	0	1	0	1	0	1	0	1	0	5	0
Cephalosporins - 3rd generation cephalosporins	1	0					3	0	1	0	1	0	1	0	1	0	5	0
Fluoroquinolones - Ciprofloxacin	1	0					3	0	1	0	1	0	1	0	1	0	5	0
Quinolones - Nalidixic acid	1	0					3	0	1	0	1	0	1	0	1	0	5	0
Trimethoprim	1	0					3	0	1	0	1	0	1	0	1	0	5	0
Sulphonamides - Sulfonamide	1	0					3	0	1	0	1	0	1	0	1	0	5	0
Aminoglycosides - Streptomycin	1	0					3	0	1	0	1	0	1	0	1	0	5	0
Aminoglycosides - Gentamicin	1	0					3	0	1	0	1	0	1	0	1	0	5	0
Penicillins - Ampicillin	1	0					3	0	1	0	1	0	1	0	1	0	5	0
Tetracyclines - Tetracycline	1	0					3	0	1	0	1	0	1	0	1	0	5	0
Fully sensitive	1	1					3	3	1	1	1	1	1	1	1	1	5	5

Table Antimicrobial susceptibility testing of Salmonella in Meat from turkey - fresh - at slaughterhouse - Monitoring - official sampling

Salmonella	S. Chartres		S. Kentucky		S. Saintpaul		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes		no		no		yes	
Number of isolates available in the laboratory	1		1		1		1	
Antimicrobials:	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	1	0	1	0	1	0	1	1
Tetracyclines - Tetracycline	1	0	1	1	1	1	1	1
Fluoroquinolones - Ciprofloxacin	1	1	1	1	1	1	1	1
Quinolones - Nalidixic acid	1	1	1	1	1	1	1	1
Trimethoprim	1	0	1	0	1	1	1	0
Sulphonamides - Sulfonamide	1	0	1	1	1	1	1	1
Aminoglycosides - Streptomycin	1	0	1	1	1	1	1	1
Aminoglycosides - Gentamicin	1	0	1	1	1	0	1	0
Cephalosporins - 3rd generation cephalosporins	1	0	1	0	1	0	1	0
Penicillins - Ampicillin	1	0	1	1	1	1	1	1
Resistant to 2 antimicrobials	1	1						
Resistant to >4 antimicrobials			1	1	1	1	1	1

Footnote:

Strains of serovars Kentucky and Saintpaul are from FBO monitoring (internal control).

Table Antimicrobial susceptibility testing of Salmonella in Meat, mixed meat - meat products - at processing plant - Monitoring - industry sampling

Salmonella	S. Enteritidis		S. Thompson		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	no		no		no	
Number of isolates available in the laboratory	2		1		1	
Antimicrobials:	N	n	N	n	N	n
Amphenicols - Chloramphenicol	2	0	1	0	1	1
Tetracyclines - Tetracycline	2	0	1	0	1	1
Fluoroquinolones - Ciprofloxacin	2	1	1	0	1	0
Quinolones - Nalidixic acid	2	1	1	0	1	0
Trimethoprim	2	0	1	0	1	0
Sulphonamides - Sulfonamide	2	0	1	0	1	1
Aminoglycosides - Streptomycin	2	0	1	0	1	1
Aminoglycosides - Gentamicin	2	0	1	0	1	0
Cephalosporins - 3rd generation cephalosporins	2	0	1	0	1	0
Penicillins - Ampicillin	2	0	1	0	1	1
Fully sensitive	2	1	1	1		
Resistant to 1 antimicrobial	2	1				
Resistant to >4 antimicrobials					1	1

Footnote:

All strains are from FBO monitoring (internal control).

Table Antimicrobial susceptibility testing of S. Chartres in Meat from poultry, unspecified - at slaughterhouse - Monitoring - quantitative data [Dilution method]

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

S. Chartres	Meat from poultry, unspecified - at slaughterhouse - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	2																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	2	0										2												
Tetracyclines - Tetracycline	8	2	0								1	1													
Fluoroquinolones - Ciprofloxacin	0.06	2	1		1			1																	
Quinolones - Nalidixic acid	16	2	1										1				1								
Trimethoprim	2	2	0							2															
Sulphonamides - Sulfonamide	256	2	0													1	1								
Aminoglycosides - Streptomycin	32	2	0										1		1										
Aminoglycosides - Gentamicin	2	2	0						2																
Penicillins - Ampicillin	8	2	0								1	1													
Cephalosporins - Cefotaxim	0.5	2	0				1	1																	
Cephalosporins - Ceftazidim	2	2	0						2																

Footnote:

The resistant strain is from turkey from official zoonoses monitoring programme. The susceptible strain is from Gallus gallus from FBO control.

Table Antimicrobial susceptibility testing of S. Enteritidis in Meat, mixed meat - meat products - at processing plant - Monitoring - industry sampling - quantitative data [Dilution method]

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

S. Enteritidis	Meat, mixed meat - meat products - at processing plant - Monitoring - industry sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	3																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	3	0										3												
Tetracyclines - Tetracycline	8	3	0								3														
Fluoroquinolones - Ciprofloxacin	0.06	3	1			2			1																
Quinolones - Nalidixic acid	16	3	1										2				1								
Trimethoprim	2	3	0							2	1														
Sulphonamides - Sulfonamide	256	3	0													1	2								
Aminoglycosides - Streptomycin	32	3	0									2	1												
Aminoglycosides - Gentamicin	2	3	0						1	2															
Penicillins - Ampicillin	8	3	0									3													
Cephalosporins - Cefotaxim	0.5	3	0					2	1																
Cephalosporins - Ceftazidim	2	3	0						2	1															

Footnote:

One strain is from egg white, one from salamee and the resistant one from meat preparation. All the three strains are from FBO (internal) monitoring.

Table Antimicrobial susceptibility testing of S. Infantis in Meat from poultry, unspecified - fresh - at slaughterhouse - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Infantis	Meat from poultry, unspecified - fresh - at slaughterhouse - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	12																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	12	0										5	7											
Tetracyclines - Tetracycline	8	12	8								1	3					8								
Fluoroquinolones - Ciprofloxacin	0.06	12	10	1	1				5	5															
Quinolones - Nalidixic acid	16	12	10										2				10								
Trimethoprim	2	12	0							12															
Sulphonamides - Sulfonamide	256	12	10											1			1				10				
Aminoglycosides - Streptomycin	32	12	1										1	1	5	4	1								
Aminoglycosides - Gentamicin	2	12	0						11	1															
Penicillins - Ampicillin	8	12	0								5	5	2												
Cephalosporins - Cefotaxim	0.5	12	0				3	6	3																
Cephalosporins - Ceftazidim	2	12	0						4	6	2														

Footnote:

Seven strains are from official samples from zoonoses monitoring programme and five from FBO monitoring (internal control). All the strains from zoonoses monitoring programme are resistant to at least three antimicrobial groups. The two susceptible strains are from FBO monitoring.

Table Antimicrobial susceptibility testing of S. Kentucky in Meat from poultry, unspecified - fresh - at slaughterhouse - Monitoring - industry sampling - quantitative data [Dilution method]

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

S. Kentucky	Meat from poultry, unspecified - fresh - at slaughterhouse - Monitoring - industry sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	2																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	2	0										1	1											
Tetracyclines - Tetracycline	8	2	2														2								
Fluoroquinolones - Ciprofloxacin	0.06	2	2											2											
Quinolones - Nalidixic acid	16	2	2														2								
Trimethoprim	2	2	0							1	1														
Sulphonamides - Sulfonamide	256	2	2																		2				
Aminoglycosides - Streptomycin	32	2	1													1	1								
Aminoglycosides - Gentamicin	2	2	2												2										
Penicillins - Ampicillin	8	2	2													2									
Cephalosporins - Cefotaxim	0.5	2	0					2																	
Cephalosporins - Ceftazidim	2	2	0								2														

Footnote:

Both strains are from FBO monitoring (internal control). One is from Gallus gallus meat and the other from turkey meat. Both are resistant to the same five antimicrobial groups.

Table Antimicrobial susceptibility testing of S. Saintpaul in Meat from turkey - fresh - at slaughterhouse - Monitoring - industry sampling - quantitative data [Dilution method]

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

S. Saintpaul	Meat from turkey - fresh - at slaughterhouse - Monitoring - industry sampling																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0										1												
Tetracyclines - Tetracycline	8	1	1														1								
Fluoroquinolones - Ciprofloxacin	0.06	1	1					1																	
Quinolones - Nalidixic acid	16	1	1														1								
Trimethoprim	2	1	1													1									
Sulphonamides - Sulfonamide	256	1	1																		1				
Aminoglycosides - Streptomycin	32	1	1															1							
Aminoglycosides - Gentamicin	2	1	0						1																
Penicillins - Ampicillin	8	1	1													1									
Cephalosporins - Cefotaxim	0.5	1	0				1																		
Cephalosporins - Ceftazidim	2	1	0						1																

Table Antimicrobial susceptibility testing of S. Senftenberg in Meat from broilers (Gallus gallus) - fresh - at slaughterhouse - Monitoring - industry sampling - quantitative data [Dilution method]

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

S. Senftenberg	Meat from broilers (Gallus gallus) - fresh - at slaughterhouse - Monitoring - industry sampling																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0											1											
Tetracyclines - Tetracycline	8	1	0										1												
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																		
Quinolones - Nalidixic acid	16	1	0											1											
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	0													1									
Aminoglycosides - Streptomycin	32	1	0											1											
Aminoglycosides - Gentamicin	2	1	0						1																
Penicillins - Ampicillin	8	1	0										1												
Cephalosporins - Cefotaxim	0.5	1	0							1															
Cephalosporins - Ceftazidim	2	1	0							1															

Table Antimicrobial susceptibility testing of S. Thompson in Meat, mixed meat - meat products - raw but intended to be eaten cooked - at processing plant - Monitoring - industry sampling - quantitative data [Dilution method]

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

S. Thompson	Meat, mixed meat - meat products - raw but intended to be eaten cooked - at processing plant - Monitoring - industry sampling																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0										1												
Tetracyclines - Tetracycline	8	1	0								1														
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																				
Quinolones - Nalidixic acid	16	1	0										1												
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	0														1								
Aminoglycosides - Streptomycin	32	1	0										1												
Aminoglycosides - Gentamicin	2	1	0						1																
Penicillins - Ampicillin	8	1	0								1														
Cephalosporins - Cefotaxim	0.5	1	0				1																		
Cephalosporins - Ceftazidim	2	1	0						1																

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat, mixed meat - at processing plant - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Typhimurium	Meat, mixed meat - at processing plant - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	3																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	3	3														3								
Tetracyclines - Tetracycline	8	3	3													3									
Fluoroquinolones - Ciprofloxacin	0.06	3	2		1				2																
Quinolones - Nalidixic acid	16	3	2										1				2								
Trimethoprim	2	3	0							3															
Sulphonamides - Sulfonamide	256	3	3																		3				
Aminoglycosides - Streptomycin	32	3	3														3								
Aminoglycosides - Gentamicin	2	3	0						1	2															
Penicillins - Ampicillin	8	3	3													3									
Cephalosporins - Cefotaxim	0.5	3	0				3																		
Cephalosporins - Ceftazidim	2	3	0						3																

Footnote:

Two strains are from zoonoses monitoring programme - one from Gallus gallus meat, the other from turkey meat - both are resistant to six antimicrobial groups. The third strain is from FBO monitoring (internal control) from minced meat, resistant to five antimicrobial groups.

Table Antimicrobial susceptibility testing of S. Virchow in Meat from broilers (Gallus gallus) - fresh - at slaughterhouse - Monitoring - industry sampling - quantitative data [Dilution method]

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

S. Virchow	Meat from broilers (Gallus gallus) - fresh - at slaughterhouse - Monitoring - industry sampling																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0										1												
Tetracyclines - Tetracycline	8	1	1													1									
Fluoroquinolones - Ciprofloxacin	0.06	1	1						1																
Quinolones - Nalidixic acid	16	1	1														1								
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	0													1									
Aminoglycosides - Streptomycin	32	1	0											1											
Aminoglycosides - Gentamicin	2	1	0							1															
Penicillins - Ampicillin	8	1	1													1									
Cephalosporins - Cefotaxim	0.5	1	0				1																		
Cephalosporins - Ceftazidim	2	1	0						1																

Table Antimicrobial susceptibility testing of S. Ohio in Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Ohio	Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	5																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	5	0										2	3											
Tetracyclines - Tetracycline	8	5	0								2	3													
Fluoroquinolones - Ciprofloxacin	0.06	5	0		4	1																			
Quinolones - Nalidixic acid	16	5	0										5												
Trimethoprim	2	5	0							5															
Sulphonamides - Sulfonamide	256	5	0														5								
Aminoglycosides - Streptomycin	32	5	0										4	1											
Aminoglycosides - Gentamicin	2	5	0						5																
Penicillins - Ampicillin	4	5	0								5														
Cephalosporins - Cefotaxim	0.5	5	0				2	3																	
Cephalosporins - Ceftazidim	2	5	0						3	2															

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

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

S. Derby	Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	4																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	4	0											4											
Tetracyclines - Tetracycline	8	4	3								1					2	1								
Fluoroquinolones - Ciprofloxacin	0.06	4	0		3	1																			
Quinolones - Nalidixic acid	16	4	0										4												
Trimethoprim	2	4	0							4															
Sulphonamides - Sulfonamide	256	4	0													1	3								
Aminoglycosides - Streptomycin	32	4	0											4											
Aminoglycosides - Gentamicin	2	4	0						4																
Penicillins - Ampicillin	4	4	1								2	1				1									
Cephalosporins - Cefotaxim	0.5	4	0				1	3																	
Cephalosporins - Ceftazidim	2	4	0						1	3															

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

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

S. Enteritidis	Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	3																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	3	0										2	1											
Tetracyclines - Tetracycline	8	3	0								3														
Fluoroquinolones - Ciprofloxacin	0.06	3	0		3																				
Quinolones - Nalidixic acid	16	3	0										3												
Trimethoprim	2	3	0							3															
Sulphonamides - Sulfonamide	256	3	0												1		2								
Aminoglycosides - Streptomycin	32	3	0									2		1											
Aminoglycosides - Gentamicin	2	3	0						2		1														
Penicillins - Ampicillin	4	3	0								2	1													
Cephalosporins - Cefotaxim	0.5	3	0				2	1																	
Cephalosporins - Ceftazidim	2	3	0						3																

Table Antimicrobial susceptibility testing of S. Infantis in Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Infantis	Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0											1											
Tetracyclines - Tetracycline	8	1	0									1													
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																				
Quinolones - Nalidixic acid	16	1	0										1												
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	0														1								
Aminoglycosides - Streptomycin	32	1	0											1											
Aminoglycosides - Gentamicin	2	1	0							1															
Penicillins - Ampicillin	4	1	0								1														
Cephalosporins - Cefotaxim	0.5	1	0					1																	
Cephalosporins - Ceftazidim	2	1	0						1																

Table Antimicrobial susceptibility testing of S. Mbandaka in Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Mbandaka	Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0											1											
Tetracyclines - Tetracycline	8	1	0								1														
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																				
Quinolones - Nalidixic acid	16	1	0										1												
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	0														1								
Aminoglycosides - Streptomycin	32	1	0											1											
Aminoglycosides - Gentamicin	2	1	0							1															
Penicillins - Ampicillin	4	1	0								1														
Cephalosporins - Cefotaxim	0.5	1	0				1																		
Cephalosporins - Ceftazidim	2	1	0						1																

Table Antimicrobial susceptibility testing of S. Paratyphi B var. Java in Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Paratyphi B var. Java	Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	2																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	2	0											2											
Tetracyclines - Tetracycline	8	2	0								2														
Fluoroquinolones - Ciprofloxacin	0.06	2	0		2																				
Quinolones - Nalidixic acid	16	2	0										2												
Trimethoprim	2	2	0							2															
Sulphonamides - Sulfonamide	256	2	0														1	1							
Aminoglycosides - Streptomycin	32	2	0										1	1											
Aminoglycosides - Gentamicin	2	2	0						1	1															
Penicillins - Ampicillin	4	2	0								2														
Cephalosporins - Cefotaxim	0.5	2	0				2																		
Cephalosporins - Ceftazidim	2	2	0						2																

Table Antimicrobial susceptibility testing of S. Stanleyville in Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Stanleyville	Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	2																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	2	0											2											
Tetracyclines - Tetracycline	8	2	0									2													
Fluoroquinolones - Ciprofloxacin	0.06	2	0			2																			
Quinolones - Nalidixic acid	16	2	0										2												
Trimethoprim	2	2	0							2															
Sulphonamides - Sulfonamide	256	2	0													2									
Aminoglycosides - Streptomycin	32	2	0											1	1										
Aminoglycosides - Gentamicin	2	2	0							1	1														
Penicillins - Ampicillin	4	2	0								1	1													
Cephalosporins - Cefotaxim	0.5	2	0				1	1																	
Cephalosporins - Ceftazidim	2	2	0							2															

Table Antimicrobial susceptibility testing of S. Tennessee in Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Tennessee	Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	5																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	5	0										1	4											
Tetracyclines - Tetracycline	8	5	0								4	1													
Fluoroquinolones - Ciprofloxacin	0.06	5	0		5																				
Quinolones - Nalidixic acid	16	5	0										5												
Trimethoprim	2	5	0							5															
Sulphonamides - Sulfonamide	256	5	0													1	4								
Aminoglycosides - Streptomycin	32	5	0											2	3										
Aminoglycosides - Gentamicin	2	5	0						3	2															
Penicillins - Ampicillin	4	5	0								5														
Cephalosporins - Cefotaxim	0.5	5	0				2	3																	
Cephalosporins - Ceftazidim	2	5	0						3	2															

Table Antimicrobial susceptibility testing of S. Typhimurium in Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Typhimurium	Pigs - fattening pigs - at slaughterhouse - animal sample - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	11																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	11	6										4		1		6								
Tetracyclines - Tetracycline	8	11	8								2	1				6	2								
Fluoroquinolones - Ciprofloxacin	0.06	11	6			4	1	4	2																
Quinolones - Nalidixic acid	16	11	6										4	1			6								
Trimethoprim	2	11	2							9						2									
Sulphonamides - Sulfonamide	256	11	8											2	1						8				
Aminoglycosides - Streptomycin	32	11	8											2	1		6	2							
Aminoglycosides - Gentamicin	2	11	1						5	5						1									
Penicillins - Ampicillin	4	11	8								3					8									
Cephalosporins - Cefotaxim	0.5	11	0				9	2																	
Cephalosporins - Ceftazidim	2	11	0						11																

Table Antimicrobial susceptibility testing of S. Chartres in Gallus gallus (fowl) - at farm - animal sample - faeces - Control and eradication programmes - industry sampling - quantitative data [Dilution method]

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

S. Chartres	Gallus gallus (fowl) - at farm - animal sample - faeces - Control and eradication programmes - industry sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	6																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	6	0										4	2											
Tetracyclines - Tetracycline	8	6	1								4	1					1								
Fluoroquinolones - Ciprofloxacin	0.06	6	1		4	1				1															
Quinolones - Nalidixic acid	16	6	1										5				1								
Trimethoprim	2	6	0							6															
Sulphonamides - Sulfonamide	256	6	1														2	2	1		1				
Aminoglycosides - Streptomycin	32	6	0										3	2		1									
Aminoglycosides - Gentamicin	2	6	0						6																
Penicillins - Ampicillin	4	6	0								1	4	1												
Cephalosporins - Cefotaxim	0.5	6	0				2	2	2																
Cephalosporins - Ceftazidim	2	6	0						2	4															

Footnote:

Three strains are from broilers and three from layers. The only resistant strain is from broilers.

Isolates are originating from sampling in the frame of National control programme for the reduction of the prevalence of Salmonella.

Table Antimicrobial susceptibility testing of S. Coeln in Gallus gallus (fowl) - broilers - at farm - animal sample - faeces - Control and eradication programmes - official sampling - quantitative data [Dilution method]

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

S. Coeln	Gallus gallus (fowl) - broilers - at farm - animal sample - faeces - Control and eradication programmes - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0											1											
Tetracyclines - Tetracycline	8	1	0									1													
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																				
Quinolones - Nalidixic acid	16	1	0										1												
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	0															1							
Aminoglycosides - Streptomycin	32	1	0											1											
Aminoglycosides - Gentamicin	2	1	0							1															
Penicillins - Ampicillin	4	1	0								1														
Cephalosporins - Cefotaxim	0.5	1	0				1																		
Cephalosporins - Ceftazidim	2	1	0						1																

Footnote:

Isolate is originating from sampling in the frame of National control programme for the reduction of the prevalence of Salmonella in broilers.

Table Antimicrobial susceptibility testing of S. Cotham in Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - faeces - Control and eradication programmes - industry sampling - quantitative data [Dilution method]

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

S. Cotham	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - faeces - Control and eradication programmes - industry sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0											1											
Tetracyclines - Tetracycline	8	1	0								1														
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																				
Quinolones - Nalidixic acid	16	1	0										1												
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	0															1							
Aminoglycosides - Streptomycin	32	1	0										1												
Aminoglycosides - Gentamicin	2	1	0							1															
Penicillins - Ampicillin	4	1	0								1														
Cephalosporins - Cefotaxim	0.5	1	0				1																		
Cephalosporins - Ceftazidim	2	1	0						1																

Footnote:

Isolate is originating from sampling in the frame of National control programme for the reduction of the prevalence of Salmonella in breeding flocks.

Table Antimicrobial susceptibility testing of S. Derby in Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - faeces - Control and eradication programmes - industry sampling - quantitative data [Dilution method]

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

S. Derby	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - faeces - Control and eradication programmes - industry sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0											1											
Tetracyclines - Tetracycline	8	1	0									1													
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																				
Quinolones - Nalidixic acid	16	1	0										1												
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	0													1									
Aminoglycosides - Streptomycin	32	1	0											1											
Aminoglycosides - Gentamicin	2	1	0						1																
Penicillins - Ampicillin	4	1	0								1														
Cephalosporins - Cefotaxim	0.5	1	0					1																	
Cephalosporins - Ceftazidim	2	1	0							1															

Footnote:

Isolate is originating from sampling in the frame of National control programme for the reduction of the prevalence of Salmonella in breeding flocks.

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - laying hens - at farm - animal sample - faeces - Control and eradication programmes - official sampling - quantitative data [Dilution method]

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

S. Enteritidis	Gallus gallus (fowl) - laying hens - at farm - animal sample - faeces - Control and eradication programmes - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0										1												
Tetracyclines - Tetracycline	8	1	0								1														
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																				
Quinolones - Nalidixic acid	16	1	0										1												
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	0														1								
Aminoglycosides - Streptomycin	32	1	0									1													
Aminoglycosides - Gentamicin	2	1	0						1																
Penicillins - Ampicillin	4	1	0								1														
Cephalosporins - Cefotaxim	0.5	1	0				1																		
Cephalosporins - Ceftazidim	2	1	0						1																

Footnote:

Isolate is originating from sampling in the frame of National control programme for the reduction of the prevalence of Salmonella in laying hens flocks.

Table Antimicrobial susceptibility testing of S. Montevideo in Gallus gallus (fowl) - laying hens - at farm - animal sample - faeces - Control and eradication programmes - official sampling - quantitative data [Dilution method]

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

S. Montevideo	Gallus gallus (fowl) - laying hens - at farm - animal sample - faeces - Control and eradication programmes - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0											1											
Tetracyclines - Tetracycline	8	1	0								1														
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																				
Quinolones - Nalidixic acid	16	1	0										1												
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	0													1									
Aminoglycosides - Streptomycin	32	1	0											1											
Aminoglycosides - Gentamicin	2	1	0						1																
Penicillins - Ampicillin	4	1	0								1														
Cephalosporins - Cefotaxim	0.5	1	0				1																		
Cephalosporins - Ceftazidim	2	1	0						1																

Footnote:

Isolate is originating from sampling in the frame of National control programme for the reduction of the prevalence of Salmonella in laying hens flocks.

Table Antimicrobial susceptibility testing of S. Ohio in Gallus gallus (fowl) - laying hens - at farm - animal sample - faeces - Control and eradication programmes - industry sampling - quantitative data [Dilution method]

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

S. Ohio	Gallus gallus (fowl) - laying hens - at farm - animal sample - faeces - Control and eradication programmes - industry sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0											1											
Tetracyclines - Tetracycline	8	1	0								1														
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																				
Quinolones - Nalidixic acid	16	1	0										1												
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	0														1								
Aminoglycosides - Streptomycin	32	1	0										1												
Aminoglycosides - Gentamicin	2	1	0						1																
Penicillins - Ampicillin	4	1	0								1														
Cephalosporins - Cefotaxim	0.5	1	0				1																		
Cephalosporins - Ceftazidim	2	1	0							1															

Footnote:

Isolate is originating from sampling in the frame of National control programme for the reduction of the prevalence of Salmonella in laying hens flocks.

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

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

S. Infantis	Gallus gallus (fowl) - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	6																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	6	0										4	2											
Tetracyclines - Tetracycline	8	6	5								1						5								
Fluoroquinolones - Ciprofloxacin	0.06	6	5		1				4	1															
Quinolones - Nalidixic acid	16	6	5										1				5								
Trimethoprim	2	6	0							6															
Sulphonamides - Sulfonamide	256	6	5													1					5				
Aminoglycosides - Streptomycin	32	6	0											1	3	2									
Aminoglycosides - Gentamicin	2	6	0						6																
Penicillins - Ampicillin	4	6	0								5	1													
Cephalosporins - Cefotaxim	0.5	6	0				1	4	1																
Cephalosporins - Ceftazidim	2	6	0						2	4															

Footnote:

Five strains are from broilers and the sitxth fuly sensitive strain is from layers.

Isolates are originating from sampling in the frame of National control programme for the reduction of the prevalence of Salmonella in broilers.

Table Antimicrobial susceptibility testing of S. Saintpaul in Gallus gallus (fowl) - unspecified - at farm - animal sample - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

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

S. Saintpaul	Gallus gallus (fowl) - unspecified - at farm - animal sample - Control and eradication programmes - official and industry sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	4																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	4	0										2	2											
Tetracyclines - Tetracycline	8	4	0								4														
Fluoroquinolones - Ciprofloxacin	0.06	4	0		3	1																			
Quinolones - Nalidixic acid	16	4	0										4												
Trimethoprim	2	4	0							4															
Sulphonamides - Sulfonamide	256	4	0														2	2							
Aminoglycosides - Streptomycin	32	4	0										4												
Aminoglycosides - Gentamicin	2	4	0							4															
Penicillins - Ampicillin	4	4	0								1	3													
Cephalosporins - Cefotaxim	0.5	4	0				3	1																	
Cephalosporins - Ceftazidim	2	4	0						4																

Footnote:

One strain from broilers, one from layers, one from breeding flock of Gallus gallus and one strain from turkeys.

Isolates are originating from sampling in the frame of National control programme for the reduction of the prevalence of Salmonella.

Table Antimicrobial susceptibility testing of S. Tennessee in Gallus gallus (fowl) - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

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

S. Tennessee	Gallus gallus (fowl) - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	6																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	6	0										2	4											
Tetracyclines - Tetracycline	8	6	0								4	2													
Fluoroquinolones - Ciprofloxacin	0.06	6	0		6																				
Quinolones - Nalidixic acid	16	6	0										6												
Trimethoprim	2	6	0							6															
Sulphonamides - Sulfonamide	256	6	0													1	5								
Aminoglycosides - Streptomycin	32	6	0											5	1										
Aminoglycosides - Gentamicin	2	6	0						4	2															
Penicillins - Ampicillin	4	6	0								6														
Cephalosporins - Cefotaxim	0.5	6	0				2	4																	
Cephalosporins - Ceftazidim	2	6	0							6															

Footnote:

Five strains are from layers and one strain is from breeding flock.

Isolates are originating from sampling in the frame of National control programme for the reduction of the prevalence of Salmonella.

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - broilers - at farm - animal sample - faeces - Control and eradication programmes - official sampling - quantitative data [Dilution method]

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

S. Typhimurium	Gallus gallus (fowl) - broilers - at farm - animal sample - faeces - Control and eradication programmes - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	1														1								
Tetracyclines - Tetracycline	8	1	1													1									
Fluoroquinolones - Ciprofloxacin	0.06	1	0		1																				
Quinolones - Nalidixic acid	16	1	0										1												
Trimethoprim	2	1	0							1															
Sulphonamides - Sulfonamide	256	1	1																		1				
Aminoglycosides - Streptomycin	32	1	1														1								
Aminoglycosides - Gentamicin	2	1	0							1															
Penicillins - Ampicillin	4	1	1													1									
Cephalosporins - Cefotaxim	0.5	1	0					1																	
Cephalosporins - Ceftazidim	2	1	0						1																

Footnote:

Isolate is originating from sampling in the frame of National control programme for the reduction of the prevalence of Salmonella in broilers.

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

Test Method Used
Broth dilution

Standard methods used for testing
task Force of Zoonoses Data Colletion, EFSA Journal (2007),96,1-46 ARBAO-II for Streptomycin

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol		16	
Tetracyclines	Tetracycline		8	
Fluoroquinolones	Ciprofloxacin		0.06	
Quinolones	Nalidixic acid		16	
Trimethoprim	Trimethoprim		2	
Sulphonamides	Sulfonamide		256	
Aminoglycosides	Streptomycin		32	
	Gentamicin		2	
Cephalosporins	Cefotaxim		0.5	
	Ceftazidim		2	
Penicillins	Ampicillin		4	

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

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol		16	
Tetracyclines	Tetracycline		8	
Fluoroquinolones	Ciprofloxacin		0.06	
Quinolones	Nalidixic acid		16	
Trimethoprim	Trimethoprim		2	
Sulphonamides	Sulphonamides		256	
Aminoglycosides	Streptomycin		32	
	Gentamicin		2	
Cephalosporins	Cefotaxim		0.5	
Penicillins	Ampicillin		4	

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

Test Method Used
Broth dilution

Standard methods used for testing
ARBAO-II for Strepromycin Task Force of Zoonoses Data Collection, EFSA Journal (2007),96,1-46

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol		16	
Tetracyclines	Tetracycline		8	
Fluoroquinolones	Ciprofloxacin		0.06	
Quinolones	Nalidixic acid		16	
Trimethoprim	Trimethoprim		2	
Sulphonamides	Sulfonamide		256	
Aminoglycosides	Streptomycin		32	
	Gentamicin		2	
Cephalosporins	Cefotaxim		0.5	
	Ceftazidim		2	
Penicillins	Ampicillin		8	

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 human cases Campylobacter enteritis started and became obligatory due to Law on Infectious diseases.

The number of notified cases decreased from 2000 to 2003, in 2006, 2008 and increased from 2003 to 2005 and in 2007. In 2008 888 cases were notified in 2009 921 (incidence 45 / 100 000 inhabitants). In 2010 999 cases were notified, the incidence was 48/100 000 inhabitants.

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

The number of notified human cases decreased from 2000 to 2003, in 2006 and 2008 and increased from 2003 to 2005 and in 2007. In 2009 921 cases were notified (incidence 45 /100 000 inhabitants). In 2009 and 2010 campylobacter was the most frequent bacterial pathogen in Slovenia (in previous years it was Salmonella).
No outbreaks were notified in last years.
Important source of infection is poultry.

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

Recent actions taken to control the zoonoses

Meeting with veterinary sector representatives. In 2010 a three year research project on comparison of Campylobacter strains from human, food and animal origin ended. Monitoring of food, feed and animals.

2.2.2 Campylobacteriosis in humans

A. Thermophilic Campylobacter in humans

Reporting system in place for the human cases

Campylobacter cases are notifiable by national law on infectious diseases (Official Gazette 69/95, revised 33/2006). 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.

Case definition

According to definitions of EC /ECDC from 2008.

Diagnostic/analytical methods used

For identification and confirmation: microscopy, biochemical identification, PCR: (isolation on CCDA medium (or other selective media), Hyppurat test, Cephalotin and nalidixic acid resistance test, other biochemical tests and PCR).
- for typing: PFGE

Notification system in place

Campylobacter cases are notifiable by national Law on Infectious Diseases
(Official Gazette 69/95, revised 33 /2006). Medical doctors notify cases on daily basis to local institutes of public health. (Also laboratories are obliged to notify). Local institutes of public health notify disease to Institute of Public Health of R. Slovenia. Notification since 1977.

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 in 2006, 2008 and increased from 2003 to 2005 and in 2007, from 2009 to 2010.

Results of the investigation

The number of notified human cases decreased from 2000 to 2003 in 2006, 2008 and increased from 2003 to 2005 and in 2007, from 2009 to 2010.

The incidence of infection in 2006 was 47,2 / 100 000 inhabitants, in 2007 53,7 / 100 000 inhabitants and 44 / 100 000 inhabitants in 2008.

No outbreaks were notified in last years.

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

In 2009 and 2010 Campylobacter is the most frequent bacterial (sporadic) gastroenteritis in Slovenia.

Relevance as zoonotic disease

Campylobacter is the most frequent sporadic bacterial gastroenteritis in Slovenia.
(In spite of that fact no campylobacter outbreaks were recorded in last years.

Table Campylobacter in humans - Species/serotype distribution

Species/serotype Distribution	Cases	Cases Inc.	Autochthon cases	Autochthon Inc.	Imported cases	Imported Inc.	Unknown status
Campylobacter	999	48.89	0	0	0	0	999
C. coli	30	1.47					30
C. jejuni	893	43.7					893
C. upsaliensis	0						
C. lari	10	0.49					10
C. sputorum	1	0.05					1
Campylobacter spp., unspecified	65	3.18					65

Table Campylobacter in humans - Age distribution

Age distribution	C. coli			C. jejuni			Campylobacter spp., unspecified			C. lari			C. sputorum		
	All	M	F	All	M	F	All	M	F	All	M	F	All	M	F
<1 year	3	2	1	44	23	21	5	1	4	1	0	1	0	0	0
1 to 4 years	6	2	4	133	64	69	12	8	4	2	1	1	0	0	0
5 to 14 years	3	0	3	156	102	54	6	3	3	0	0	0	0	0	0
15 to 24 years	5	4	1	153	82	71	8	4	4	4	3	1	1	1	0
25 to 44 years	7	5	2	159	77	82	10	8	2	1	1	0	0	0	0
45 to 64 years	3	2	1	148	90	58	5	2	3	1	1	0	0	0	0
65 years and older	3	1	2	100	53	47	19	7	12	1	0	1	0	0	0
Age unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total :	30	16	14	893	491	402	65	33	32	10	6	4	1	1	0

Table Campylobacter in humans - Seasonal distribution

Seasonal Distribution / Months	C. coli	C. jejuni	C. upsaliensis	Campylobacter spp., unspecified
	Cases	Cases	Cases	Cases
January	3	50	0	4
February	1	41	0	1
March	0	52	0	13
April	2	53	0	3
May	2	101	0	7
June	7	139	0	7
July	1	111	0	3
August	7	121	0	4
September	2	86	0	9
October	2	56	0	2
November	3	54	0	5
December	0	29	0	7
not known	0	0	0	0
Total :	30	893	0	65

2.2.3 Campylobacter in foodstuffs

A. Thermophilic Campylobacter in Broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

VARS
Subjected to sampling shall be the meat of broiler animals in establishments approved for the cutting of fresh meat.
Sampling is carried out by official veterinarians throughout the year. One meat sample is an epidemiological unit.

Frequency of the sampling

At slaughterhouse and cutting plant

Frequency of the sampling depends on capacity of production:
Once a week, sampling shall be implemented in the approved establishments producing more than 10.000 tons of fresh broiler meat/year.
Every two weeks, sampling shall be implemented in the approved establishments producing less than 10.000 tons of fresh broiler meat, but more than 1000 tons of fresh broiler meat/year.
Every three months, samples shall be taken in the approved establishments producing less than 1000 tons of fresh broiler meat/year.

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

A meat sample weighing approximately 300g is removed by sterile instrument and the thoracic section with or without skin (in the same proportion as it is placed on the market) 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 +4oC. Analyses should commence in the shortest possible time after sampling.

Definition of positive finding

At slaughterhouse and cutting plant

A sample from which Termophilic Campylobacter has been isolated from shall be considered as positive.

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method:ISO 10272-1:2006

Preventive measures in place

GMP, GHP, HACCP

Control program/mechanisms

The control program/strategies in place

- Registration or approval of establishments subjected to veterinary control,
- identification of animal products and their tracebillity,
- veterinary control in establishments.

Notification system in place

Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation.
On monthly basis the laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

Results of the investigation

In 2010, 100 broiler meat samples at cutting plant were taken. Thermophilic Campylobacter was isolated from 79 broiler meat samples (79%):
C. jejuni was isolated from 48 samples,
C. coli was isolated from 30 samples,
C. coli + C.jejuni were isolated from one (1) sample.

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

At slaughterhouse and cutting plant
Compared with results in year 2009 the percentage of positive samples of fresh broiler meat in 2010 increased for approximately 10%.

B. Thermophilic Campylobacter spp., unspecified in Food Meat from turkey - fresh - at cutting plant

Monitoring system

Sampling strategy

VARS

Subjected to sampling shall be the meat from turkeys in one (1) establishment approved for the cutting of fresh turkey meat.

Sampling is carried out by official veterinarians throughout the year. One meat sample is an epidemiological unit.

Frequency of the sampling

Every two weeks.

Type of specimen taken

Fresh meat

Methods of sampling (description of sampling techniques)

A meat sample weighing approximately 300g is removed by sterile instrument and the thoracic section with or without skin (in the same proportion as it is placed on the market) 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 +4oC. Analyses should commence in the shortest possible time after sampling.

Definition of positive finding

A sample from which Termophilic Campylobacter has been isolated from shall be considered as positive.

Diagnostic/analytical methods used

Bcteriological method:ISO 10272-1:2006

Preventive measures in place

GMP, GHP, HACCP

Control program/mechanisms

The control program/strategies in place

VARS

- Registration or approval of establishments subjected to veterinary control,
- identification of animal products and their tracebillity,
- veterinary control in establishments.

Notification system in place

VARS

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

On monthly basis the laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

Results of the investigation

VARS

In 2010, 49 turkey meat samples at cutting plant were taken. Thermophilic Campylobacter was isolated from 5 turkey meat samples (10,2%).

From four (4) samples C. coli was isolated,

From one (1) sample C. jejuni was isolated.

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

At slaughterhouse and cutting plant

Compared with results in year 2009, the percentage of positive samples of fresh meat from turkey in 2010 increased for approximately 2%.

C. C.,thermophilic in food

Monitoring system

Sampling strategy

Definition of positive finding

.

Results of the investigation

Table Campylobacter in poultry meat

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus) - fresh - at cutting plant - Monitoring - official sampling	VARS	Single	1g	100	79	31	49	0	0	0
Meat from turkey - fresh - at cutting plant - Monitoring - official sampling	VARS	Single	1g	49	5	4	1	0	0	0

Footnote:

From one positive broiler meat sample, C.coli and C.jejuni were isolated.

2.2.4 Campylobacter in animals

A. Thermophilic Campylobacter in Gallus gallus

Monitoring system

Sampling strategy

VARS

Sampling of broilers was carried out continually throughout the year in all approved slaughterhouses where broiler animals slaughtering is conducted.
Sampled were broilers raised in the Republic of Slovenia only.
The sampling of faeces was carried out with the aim of establishing the prevalence of campylobacter in broiler flocks. Sampling of neck skin was carried out with the aim of establishing the level of contamination of poultry carcases at slaughterhouses with campylobacter.
Slaughter batch of more than 2000 animals constitutes an epidemiological unit, if this is not possible, smaller batches can be sampled. 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

In the three (3) slaughterhouses where sampling was conducted the number of samples was equally distributed on the basis of the annual quantity of slaughtered animals.
Sampling was distributed evenly throughout the year.

Type of specimen taken

At slaughter

Sampling was conducted by taking a caeca sample and a neck skin sample from every random selected broiler slaughter batch. A caeca sample included the caeca of 10 broilers, taking 1 full and intact caecum from every broiler. Every caeca sample and neck skin sample were taken from the same slaughter batch.

Methods of sampling (description of sampling techniques)

At slaughter

In slaughtering batch of broilers sample of feaces (caeca) and neck skin was taken.
Sample of feaces consists of 10 animals (10 caeca).The sampling of faeces during the slaughtering process shall be equally distributed on the basis of the slaughtering batch. The sampling shall start at ¼ and end at ¾ of batch slaughtering. A final sample of faeces must comprise caeca 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.
In each slaughtering batch from which faeces samples were taken, after cooling but before any other handling of carcasses (e.g. cutting, packaging), a neck skin sample is taken using a sterile gloves and put into a sterile plastic bag.
Samples shall be delivered to the laboratory as soon as possible, as a rule, immediately after sampling (on the same day) or within 24 hours of the sampling. In exceptional cases (holidays, weekend), the samples can be delivered to the laboratory within 80 hours after sampling. The laboratory must start with the investigation within 24 hours after receiving the material. If samples are delivered to the laboratory within 72 to 80 hours after taking, they must be tested immediately after the receipt. In the period from the

sampling to the beginning of the analysis, the sampled material must be stored in a cold place, at the temperature of 4 oC (+/-2 oC) and may not be exposed to light.
In the laboratory, the caecum shall be opened aseptically and the content pooled in 1 pool sample.

Case definition

At slaughter

A positive slaughter batch is a batch from which Thermophilic Campylobacter has been isolated in the pooled sample of faeces.
A positive neck skin sample is a sample from which Thermophilic Campylobacter was isolated in 1g.

Diagnostic/analytical methods used

At slaughter

Bacteriological method:ISO 10272-1:2006

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, 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.
In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GAP, GHP, and record keeping.

In slaughterhouses: GMP,GHP,HACCP

Control program/mechanisms

The control program/strategies in place

- Registration and/or approval of establishments subjected to veterinary controls
- Identification of animal products and their traceability
- Veterinary control in establishments

Notification system in place

Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation.
On monthly basis the laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

Results of the investigation

In 2010, the broiler caecum samples from 100 slaughter batches were taken at slaughter establishments. Thermophilic Campylobacter was detected in 88 samples/slaughter batches (88%):
C. jejuni was isolated from 50 samples,
C. jejuni and C.coli were isolated from 9 samples,
C. coli was isolated from 27 samples,
C. lari was isolated from one (1) sample,
C. spp. was isolated from one (1) sample.

Neck skin samples were analysed from 99 slaughter batches. Thermophilic Campylobacter was detected in 92 samples/slaughter batches (92,9%):
C. jejuni was isolated from 51 samples,
C. jejuni and C. coli were isolated from 13 samples,
C. coli was isolated from 26 samples,
C. lari was isolated from two (2) samples.

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

Compared with results in year 2009 the percentage of positive broiler caecum and neck skin samples in 2010 increased for approximately 10%.

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 may pose a threat to public health.

B. Thermophilic Campylobacter spp., unspecified in animal - Turkeys - at slaughterhouse - Monitoring

Monitoring system

Sampling strategy

VARS

Sampling of turkeys was carried out continually throughout the year in one (1) approved slaughterhouse where turkeys slaughtering is conducted.

Sampled were turkeys raised in the Republic of Slovenia only.

The sampling of faeces was carried out with the aim of establishing the prevalence of campylobacter in turkey flocks. Sampling of neck skin was carried out with the aim of establishing the level of contamination of poultry carcases at slaughterhouses with campylobacter.

Slaughter batch of more than 2000 animals constitutes an epidemiological unit, if this is not possible, smaller batches can be sampled. 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

In the one (1) slaughterhouse where sampling was conducted once a week. The number of samples was equally distributed on the basis of the annual quantity of slaughtered animals.

Sampling was distributed evenly throughout the year.

Type of specimen taken

Sampling was conducted by taking a caeca sample and a neck skin sample from every random selected turkey slaughter batch. A caeca sample included the caeca of 10 turkeys, taking 1 full and intact caecum from every turkey. Every caeca sample and neck skin sample were taken from the same slaughter batch.

Methods of sampling (description of sampling techniques)

At slaughter

In slaughtering batch of turkeys sample of feaces (caeca) and neck skin was taken.

Sample of feaces consists of 10 animals (10 caeca).The sampling of faeces during the slaughtering process shall be equally distributed on the basis of the slaughtering batch. The sampling shall start at ¼ and end at ¾ of batch slaughtering. A final sample of faeces must comprise caeca 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.

In each slaughtering batch from which faeces samples were taken, after cooling but before any other handling of carcasses (e.g. cutting, packaging), a neck skin sample is taken using a sterile gloves and put into a sterile plastic bag.

Samples shall be delivered to the laboratory as soon as possible, as a rule, immediately after sampling (on the same day) or within 24 hours of the sampling. In exceptional cases (holidays, weekend), the samples can be delivered to the laboratory within 80 hours after sampling. The laboratory must start with the investigation within 24 hours after receiving the material. If samples are delivered to the laboratory within 72 to 80 hours after taking, they must be tested immediately after the receipt. In the period from the sampling to the beginning of the analysis, the sampled material must be stored in a cold place, at the temperature of 4 oC (+/-2 oC) and may not be exposed to light.

In the laboratory, the caecum shall be opened aseptically and the content pooled in 1 pool sample.

Case definition

A positive slaughter batch is a batch from which Thermophilic Campylobacter has been isolated in the pooled sample of faeces.

A positive neck skin sample is a sample from which Thermophilic Campylobacter was isolated in 1g.

Diagnostic/analytical methods used

Bacteriological method: ISO 10272-1:2006

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, 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.
In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GAP, GHP, and record keeping.

In slaughterhouses: GMP,GHP,HACCP

Control program/mechanisms

The control program/strategies in place

- Registration and/or approval of establishments subjected to veterinary controls
- Identification of animal products and their traceability
- Veterinary control in establishments

Notification system in place

Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation.
On monthly basis the laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

Results of the investigation

In 2010, the turkey caecum samples from 48 slaughter batches were taken at one (1) slaughter establishment.
Thermophilic Campylobacter was detected in 26 samples/slaughter batches (54%).
C. jejuni was isolated from 10 samples,
C. jejuni and C. coli were isolated from three (3) samples,
C. coli was isolated from 12 samples,
C. lari was isolated from one (1) sample.

Neck skin samples were analysed from 50 slaughter batches. Thermophilic Campylobacter was detected in 15 samples/slaughter batches (30%).
C. jejuni was isolated from seven (7) samples,
C. coli was isolated from eight (8) samples.

Table Campylobacter in animals

	Source of information	Sampling unit	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Gallus gallus (fowl) - broilers - at slaughterhouse - animal sample - caecum - Monitoring - official sampling	VARS	Slaughter batch	100	88	36	59	1	0	1
Gallus gallus (fowl) - broilers - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling	VARS	Slaughter batch	99	92	39	64	2	0	0
Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - official sampling	VARS	Slaughter batch	48	26	15	13	1	0	0
Turkeys - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling	VARS	Slaughter batch	50	15	8	7	0	0	0

Footnote:

Broiler caecum samples: from 9 positive samples C. coli and C. jejuni were isolated
Broiler neck skin samples: from 13 positive samples C. coli and C. jejuni were isolated

Turkey caecum samples: from three (3) positive samples C. coli and C. jejuni were isolated

2.2.5 Antimicrobial resistance in Campylobacter isolates

A. Antimicrobial resistance in Campylobacter jejuni and coli in foodstuff derived from pigs

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Chloramphenicol, Tetracycline, Ciprofloxacin, Nalidixic acid, Streptomycin, Gentamicin, Erythromycin.

Cut-off values used in testing

Task Force of Zoonoses Data Collection, EFSA Journal (2007), 96,1-46.

Results of the investigation

In broilers (Gallus gallus) 60 strains of C. jejuni were tested for antimicrobial resistance, 36 from skin and 24 from meat. Only 10 strains (16.7%) were fully susceptible, 3 were resistant to one (1) antimicrobial, 33 to two (2) antimicrobials and 10 to 3 antimicrobials. The highest was resistqance to Ciprofloxacin (78.3%), Tetracycline (55.0%) and Nalidixic acid (50.0%). No resistance was found to gentamicin and Erythromicin.

B. Antimicrobial resistance in Campylobacter jejuni and coli in foodstuff derived from poultry

Sampling strategy used in monitoring

Frequency of the sampling

VARS

Isolates were obtained within annual monitoring programme.

Type of specimen taken

VARS

Fresh meat - at processing.

Methods of sampling (description of sampling techniques)

See Monitoring program for: Thermophilic Campylobacter in Broiler meat and products thereof and Thermophilic Campylobacter in turkey meat and products thereof.

Procedures for the selection of isolates for antimicrobial testing

VARS

82 isolates of Thermophilic Campylobacter derived
from monitoring program were taken for antimicrobial testing (55 isolates of C. jejuni and 27 isolates of C. coli).

Methods used for collecting data

VARS

Isolates were tested and reported by NVI.

Laboratory methodology used for identification of the microbial isolates

Bacerological test: ISO 10272:1995,
MIC determined by broth dilution method using CRL AR recommended antimicrobial pannel.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Chloramphenicol, Tetracycline, Ciprofloxacin, Nalidixic acid, Streptomycin, Gentamicin, Erythromycin.

Cut-off values used in testing

Task Force of Zoonoses Data Collection, EFSA Journal (2007), 96,1-46.

Control program/mechanisms

Recent actions taken to control the zoonoses

Introduced monitoring.

Results of the investigation

In broilers (Gallus gallus) 60 strains of C. jejuni were tested for antimicrobial resistance, 36 from skin and 24 from meat. Only 10 strains (16.7%) were fully susceptible, 3 were resistant to one (1) antimicrobial, 33 to two (2) antimicrobials and 10 to three (3) antimicrobials. The highest was resistance to Ciprofloxacin (78.3%), Tetracycline (55.0%) and Nalidixic acid (50.0%). No resistance was found to Gentamicin and

Erythromicin.
Only four (4) strains from turkey meat were tested. Two (2) were fully susceptible. One (1) was resistant to Ciprofloxacin and nalidixic acid and Tetracycline. The other one was resistant only to Ciprofloxacin.

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

The high percentage of resistant strains and low percentage of fully susceptible strains is not favorable. Especially high resistance to quinolons might present a problem for treatment and spread of resistance genes.

C. Antimicrobial resistance in Campylobacter jejuni and coli in poultry

Laboratory methodology used for identification of the microbial isolates

Bacerological test: ISO 10272:1995,
MIC determined by broth dilution method using CRL AR recommended antimicrobial pannel.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Chloramphenicol, Tetracycline, Ciprofloxacin, Nalidixic acid, Streptomycin, Gentamicin, Erythromycin.

Cut-off values used in testing

Task Force of Zoonoses Data Collection, EFSA Journal (2007), 96,1-46.

Results of the investigation

In broilers of Gallus gallus 30 strains of C. jejuni were tested for antimicrobial resistance. only four (4) strains were fully susceptible (13.3%). The highest percentage of resistant strains was to Ciprofloxacin (83.3%), Tetracycline (66.7%) and Nalidixic acid (40%). No resistance was found to Chloramphenicol, Erythromycin and Gentamicin.
Only six (6) strains of C. jejuni from turkeys were tested. Two (2) of them were fully susceptible. Four (4) were resistant to Ciprofloxacin, three (3) to Nalidixic acid and two (2) to Tetracycline.

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

The high percentage of resistant strains and low percentage of fully susceptible strains is not favorable. Especially high resistance to quinolons might present a problem for treatment and spread of resistance genes.

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

Campylobacter	C. jejuni	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	30	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	30	0
Tetracyclines - Tetracycline	30	20
Fluoroquinolones - Ciprofloxacin	30	25
Quinolones - Nalidixic acid	30	12
Aminoglycosides - Streptomycin	30	2
Aminoglycosides - Gentamicin	30	0
Fully sensitive	30	4
Macrolides - Erythromycin	30	0
Resistant to 1 antimicrobial	30	1
Resistant to 2 antimicrobials	30	19
Resistant to 3 antimicrobials	30	4
Resistant to 4 antimicrobials	30	2

Table Antimicrobial susceptibility testing of Campylobacter in Meat from broilers (Gallus gallus) - Monitoring - official sampling

Campylobacter	C. jejuni	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	24	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	24	0
Tetracyclines - Tetracycline	24	12
Fluoroquinolones - Ciprofloxacin	24	19
Quinolones - Nalidixic acid	24	15
Aminoglycosides - Streptomycin	24	1
Aminoglycosides - Gentamicin	24	0
Fully sensitive	24	3
Macrolides - Erythromycin	24	0
Resistant to 1 antimicrobial	24	2
Resistant to 2 antimicrobials	24	12
Resistant to 3 antimicrobials	24	7

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2011-12-06	Resistant to 3 antimicrobials	C. jejuni - n	3	7

Table Antimicrobial susceptibility testing of Campylobacter in Meat from turkey - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling

Campylobacter	C. jejuni	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	4	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	4	0
Tetracyclines - Tetracycline	4	1
Fluoroquinolones - Ciprofloxacin	4	2
Quinolones - Nalidixic acid	4	1
Aminoglycosides - Streptomycin	4	0
Aminoglycosides - Gentamicin	4	0
Fully sensitive	4	2
Macrolides - Erythromycin	4	0
Resistant to 2 antimicrobials	4	2

Table Antimicrobial susceptibility testing of Campylobacter in Turkeys - at farm - animal sample - faeces

Campylobacter	C. jejuni	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	6	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	6	0
Tetracyclines - Tetracycline	6	2
Fluoroquinolones - Ciprofloxacin	6	4
Quinolones - Nalidixic acid	6	3
Aminoglycosides - Streptomycin	6	0
Aminoglycosides - Gentamicin	6	0
Fully sensitive	6	2
Macrolides - Erythromycin	6	0
Resistant to 2 antimicrobials	6	3
Resistant to 3 antimicrobials	6	1

Table Antimicrobial susceptibility testing of Campylobacter in Meat from broilers (Gallus gallus) - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling

Campylobacter	C. jejuni	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	36	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	36	0
Tetracyclines - Tetracycline	36	21
Fluoroquinolones - Ciprofloxacin	36	28
Quinolones - Nalidixic acid	36	15
Aminoglycosides - Streptomycin	36	0
Aminoglycosides - Gentamicin	36	0
Fully sensitive	36	7
Macrolides - Erythromycin	36	0
Resistant to 1 antimicrobial	36	1
Resistant to 2 antimicrobials	36	21
Resistant to 3 antimicrobials	36	7

Table Antimicrobial susceptibility testing of C. jejuni in Meat from broilers (Gallus gallus) - at slaughterhouse - animal sample - meat - Monitoring - official sampling - quantitative data [Dilution method]

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

C. jejuni	Meat from broilers (Gallus gallus) - at slaughterhouse - animal sample - meat - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	24																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	24	0									15	8	1											
Tetracyclines - Tetracycline	2	24	12						8	3	1				12										
Fluoroquinolones - Ciprofloxacin	1	24	19				1	1	2	1			19												
Quinolones - Nalidixic acid	16	24	15									3	1	5			15								
Aminoglycosides - Streptomycin	2	24	1								15	8	1												
Aminoglycosides - Gentamicin	1	24	0						7	15	2														
Macrolides - Erythromycin	4	24	0							22	2														

Table Antimicrobial susceptibility testing of C. jejuni in Meat from broilers (Gallus gallus) - fresh - with skin - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [Dilution method]

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

C. jejuni	Meat from broilers (Gallus gallus) - fresh - with skin - at slaughterhouse - animal sample - neck skin - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	36																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	36	0									30	6												
Tetracyclines - Tetracycline	2	36	21						14	1					21										
Fluoroquinolones - Ciprofloxacin	1	36	28				4	4					28												
Quinolones - Nalidixic acid	16	36	15									13	6	2		1	14								
Aminoglycosides - Streptomycin	2	36	0								24	12													
Aminoglycosides - Gentamicin	1	36	0						12	23	1														
Macrolides - Erythromycin	4	36	0							35	1														

Table Antimicrobial susceptibility testing of C. jejuni in Meat from turkey - fresh - with skin - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling - quantitative data [Dilution method]

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

C. jejuni	Meat from turkey - fresh - with skin - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	4																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	4	0									4													
Tetracyclines - Tetracycline	2	4	1						3						1										
Fluoroquinolones - Ciprofloxacin	1	4	2				1	1					2												
Quinolones - Nalidixic acid	16	4	1									1	2				1								
Aminoglycosides - Streptomycin	2	4	0								4														
Aminoglycosides - Gentamicin	1	4	0						1	3															
Macrolides - Erythromycin	4	4	0							4															

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

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

C. jejuni	Gallus gallus (fowl) - broilers - before slaughter - at slaughterhouse - animal sample - faeces - Monitoring - official sampling																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	30																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	30	0									21	7	2										
Tetracyclines - Tetracycline	2	30	20						6	3	1				20									
Fluoroquinolones - Ciprofloxacin	1	30	25				2		1	2			25											
Quinolones - Nalidixic acid	16	30	12									14	1	3		1	11							
Aminoglycosides - Streptomycin	2	30	2								20	8	2											
Aminoglycosides - Gentamicin	1	30	0						9	17	4													
Macrolides - Erythromycin	4	30	0							30														

Table Antimicrobial susceptibility testing of C. jejuni in Turkeys - meat production flocks - before slaughter - at farm - animal sample - faeces - Monitoring - quantitative data [Dilution method]

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

C. jejuni	Turkeys - meat production flocks - before slaughter - at farm - animal sample - faeces - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	6																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	6	0									5	1												
Tetracyclines - Tetracycline	2	6	2						3	1					2										
Fluoroquinolones - Ciprofloxacin	1	6	4					1	1				4												
Quinolones - Nalidixic acid	16	6	3										1	2			3								
Aminoglycosides - Streptomycin	2	6	0								5	1													
Aminoglycosides - Gentamicin	1	6	0							6															
Macrolides - Erythromycin	4	6	0							6															

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

Test Method Used
Broth dilution

Standard methods used for testing
NCCLS/CLSI

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Quinolones	Nalidixic acid		16	
Aminoglycosides	Gentamicin		1	
	Streptomycin		2	
Macrolides	Erythromycin		4	
Amphenicols	Chloramphenicol		16	

Table Cut-off values used for antimicrobial susceptibility testing of C. coli in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Aminoglycosides	Gentamicin		2	
	Streptomycin		4	
Macrolides	Erythromycin		16	

Table Cut-off values used for antimicrobial susceptibility testing of C. coli in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Aminoglycosides	Gentamicin		2	
	Streptomycin		4	
Macrolides	Erythromycin		16	

Table Cut-off values used for antimicrobial susceptibility testing of C. coli in Food

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Aminoglycosides	Gentamicin		2	
	Streptomycin		4	
Macrolides	Erythromycin		16	

Table Cut-off values used for antimicrobial susceptibility testing of C. jejuni in Animals

Test Method Used
Broth dilution

Standard methods used for testing
Task Force of Zoonoses Data Collection, EFSA Journal (2007),96,1-46

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Quinolones	Nalidixic acid		16	
Aminoglycosides	Gentamicin		1	
	Streptomycin		2	
Macrolides	Erythromycin		4	
Amphenicols	Chloramphenicol		16	

Table Cut-off values used for antimicrobial susceptibility testing of C. jejuni in Feed

Test Method Used	Standard methods used for testing

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

Table Cut-off values used for antimicrobial susceptibility testing of C. jejuni in Food

Test Method Used	Standard methods used for testing
Broth dilution	task force of Zoonoses Data Collection, EFSA Journal (2007),96,1-46

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Quinolones	Nalidixic acid		16	
Aminoglycosides	Gentamicin		1	
	Streptomycin		2	
Macrolides	Erythromycin		4	
Amphenicols	Chloramphenicol		16	

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

From 1990 to 2010 0 to 38 human cases annually were notified.
In 2005 three (3) human cases were notified, in 2006 seven (7), in 2007 four (4), in 2008 three (3), in 2009 six (6) and in 2010 11. The notified cases were meningitis and sepsis.

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

There are probably more cases than notified, because only most severe cases seek medical help and are therefore notified. Source of infection mostly remains unknwon.

Recent actions taken to control the zoonoses

Epidemiological surveillance of human cases, microbiological food control, monitoring of food, feed, animals by veterinary authority.

2.3.2 Listeriosis in humans

A. Listeriosis in humans

Reporting system in place for the human cases

Listeriosis cases are notifiable by national Law on Infectious diseases (Official Gazette 69/95, revised 33/2006). Medical doctors notify cases on daily basis to local institutes of public health. (Laboratories are obliged to notify as well). Local institutes of public health notify disease to Institute of Public Health of Slovenia. Notification since 1977.

Case definition

According to definition of the ECDC from 2008.

Diagnostic/analytical methods used

Isolation from body fluids on differential and selective media, Gram staining; biochemical tests; serology;
PCR.

Notification system in place

Listeriosis cases are notifiable by national Law on Infectious diseases. Medical doctors notify cases on daily basis to local institutes of public health. (Laboratories are obliged to notify as well). Local institutes of public health notify disease to Institute of Public Health of R. Slovenia.
Notification since 1977.

History of the disease and/or infection in the country

From 1990 to 2010 0 to 38 human cases annually were notified.
In 2005 three human cases were notified, in 2006 seven in 2007 4 and in 2008 3 and 2009 6 cases were notified, in 2010 11 cases (incidence below 1 / 100 000 inhabitants).

Results of the investigation

According to notifications human listeriosis is a rare zoonosis. The mortality of notified cases with meningitis, sepsis is relativečy high.

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

Real burden of human disease is probably greater than estimation from passive notification. Notified are most probable cases with more severe clinical picture who are admitted to hospital. Source of infection mostly remains unclear.

Relevance as zoonotic disease

Human listeriosis is rarely reported. Enhanced laboratory and epidemiological surveillance of human cases (molecular methods)in comparison with positive food samples would give better insight in epidemiological situation and source of infection.

Table Listeria in humans - Species/serotype distribution

Species/serotype Distribution	Cases	Cases Inc.
Listeria	16	35.45
Listeria spp., unspecified	4	0.20
L. monocytogenes	7	35
Congenital cases	0	0
Number of deaths	5	0.25

Footnote:

In 2010 were 11 cases of listeriosis reported. In four (4)cases the species of zoonotic agent was not identified and in seven (7)cases Listeria monicytogenes was identified. Among total 11 cases of listeriosis there were five (5) deaths.

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2011-11-09	L. monocytogenes	Cases		7
	Total :	Cases Inc.	.45	35.45
	Total :	Cases	9	16
	L. monocytogenes	Cases Inc.		035
		Footnote		In 2010 were 11 cases of listeriosis reported. In four (4)cases the species of zoonotic agent was not identified and in seven (7)cases Listeria monicytogenes was identified. Among total 11 cases of listeriosis there were five (5) deaths.

Table Listeria in humans - Age distribution

Age distribution	L. monocytogenes			Listeria spp., unspecified		
	All	M	F	All	M	F
<1 year	0	0	0	0	0	0
1 to 4 years	0	0	0	0	0	0
5 to 14 years	0	0	0	0	0	0
15 to 24 years	0	0	0	0	0	0
25 to 44 years	1	1	0	0	0	0
45 to 64 years	2	1	1	3	1	2
65 years and older	4	3	1	1	0	1
Age unknown	0	0	0	0	0	0
Total :	7	5	2	4	1	3

2.3.3 Listeria in foodstuffs

A. L. monocytogenes in food

Monitoring system

Sampling strategy

VARS
Sampling of RTE meat products, fishery products, dairy products (at processing and/or retail) and raw milk (on holdings) for L. monocytogenes was conducted in the approved and registered establishments, at retail and on holdings. Raw milk was sampled on holdings which supplies milk mashines.

HIRS
Monitoring (foodstuffs intended for particular nutritional uses and catering)
Annual monitoring programme was prepared with respect to the risk analysis, legislative criteria, results of programme/controls carried out in the previous year, epidemiological situation.
Samples were taken at producer, wholesalers and at retail level and it was carried out by the health inspectors.

Programme:
- ready-to-eat foods intended for infants: 10 samples/year;
- ready-to-eat foods for special medical purposes: 10 samples/year;
- RTE cakes, deserts and pastry: 100 samples/year;
- RTE deli dishes (salads, sliced cooked meat products and sausages, sauces etc.): 200 samples/year.

IRSAFF
Monitoring (foodstuff of non-animal origin except intended for particular nutritional uses and catering)
Annual monitoring programme was prepared with respect to the risk analysis, legislative criteria, results of programme/controls carried out in the previous year.
Samples were taken at producer, wholesalers and at retail level and it was carried out by the inspectors for quality control
Programme:
- precut RTE fruits and vegetables: 30 samples/year;
- frozen fruits and vegetables (RTE): 30 samples/year
- deserts and pastry: 50 samples/year
- RTE deli dishes : 50 samples/year.

Frequency of the sampling

At the production plant

VARS
Sampling was distributed evenly throughout the months: June - December.
The numbers of samples to be taken had been defined in advance and for every particular VARS Regional Office separately.

At retail

VARS: Sampling was distributed evenly throughout the months: June- December.
The numbers of samples to be taken had been defined in advance and for every particular VARS Regional Office separately.
HIRS: Sampling takes place during the months March - October.
IRSAFF:Sampling takes place during the months April - December.

Type of specimen taken

At the production plant

VARS
RTE meat products, fishery products, dairy products and raw milk.

At retail

VARS
- RTE meat products,
- RTE dairy products.

HIRS
- ready-to-eat foods intended for infants,
- ready-to-eat foods for special medical purposes,
- RTE cakes, deserts and pastry,
- RTE deli dishes (salads, sliced cooked meat products and sausages, sauces etc.)

IRSAFF:
- precut RTE fruits and vegetables
- frozen fruits and vegetables (RTE)
- deserts and pastry,
- RTE deli dishes

Methods of sampling (description of sampling techniques)

At the production plant

VARS
A single sample of a meat product, dairy product, fishery product or raw milk shall be composed of five units (n=5). Every unit of meat product and fishery product shall weigh at least 200 g, dairy products at least 300g/ml and raw milk at least 200ml.
Samples were delivered to the laboratory in the shortest time possible, as a rule, immediately after sampling (in 24 hours after sampling at the latest). In time between sampling and delivery to the laboratory, samples shall be kept at 4°C(+-2°C).

At retail

VARS
A single sample of a meat product or dairy product shall be composed of five units (n=5). Every unit of meat product shall weigh at least 200 g and every unit of dairy product at least 300g/ml.
Samples were delivered to the laboratory in the shortest time possible, as a rule, immediately after sampling (in 24 hours after sampling at the latest). In time between sampling and delivery to the laboratory, samples shall be kept at 4°C(+-2°C).
As precedence dairy products made frome raw milk shall be sampled. In cases where business operators produce dairy products using the different types of milk (raw, thermally treated, pasteurised), the dairy products obtained from the raw milk and thermally treated milk shall have precedence in sampling.

HIRS
Sampling plan (n = number of units comprising the sample):
- ready-to-eat foods intended for infants: n=10;
- ready-to-eat foods for special medical purposes: n=10;
- RTE cakes and deserts: n=1;
- RTE deli dishes (salads, sliced cooked meat products and sausages, sauces etc.): n=1.

Every unit of the sample weighed at least 100 g. If a sample was analysed in one unit and was not prepacked, a sample weighing 300-500 g was taken by sterile instrument and stored in a sterile bag or other sterile container. Samples had to be delivered to the laboratory in the shortest time possible. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The temperature during storage and transport for samples of chilled products should not exceed + 4°C.

IRSAFF
Sampling plan (n = number of units comprising the sample):
- precut RTE fruits and vegetables(n=5)
- frozen fruits and vegetables (RTE)(n=5)
- deli dishes - sweet (n=1)
- RTE deli dishes (n=5)
Every unit of the sample weighed at least 100 g. If a sample was analysed in one unit and was not prepacked, a sample weighing 300-500 g was taken by sterile instrument and stored in a sterile bag or other sterile container. Samples had to be delivered to the laboratory in the shortest time possible. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The temperature during storage and transport for samples of chilled products should not exceed + 4°C.

Definition of positive finding

At the production plant

A sample in which Listeria monocytogenes was isolated in 25g.

At retail

A sample in which Listeria monocytogenes was isolated in 25g.

Diagnostic/analytical methods used

At the production plant

Bacteriological method: ISO 11290-1:1996

At retail

Bacteriological method: ISO 11290-1, 2:1996, 1998/Amd.1:2004, ISO 11290-2:1998/Amd.1:2004

Preventive measures in place

GMP, GHP, HACCP

Control program/mechanisms

The control program/strategies in place

VARS
- Registration and/or approval of establishments subjected to veterinary controls
- Identification of animal products and their traceability
- Veterinary controls in establishments

HIRS
Registration of establishments and official control.

IRSAFF
Registration of establishments and official control.

Suggestions to the Community for the actions to be taken

Measures in case of the positive findings

Informing the owner of the sample, food hygiene inspection and necessary enforcement action.

Notification system in place

VARS
The laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

HIRS
Whenever zoonotic agent - Listeria monocytogenes was detected in samples taken, relevant authority was informed.

IRSAFF
Whenever zoonotic agent - Listeria monocytogenes exceeded the criteria in samples taken, relevant authority was informed.

Results of the investigation

VARS
In 2010:
196 samples of RTE meat products were taken. Listeria monocytogenes was detected (in 25g) in 39 samples (19,7%).
29 raw milk samples were taken. Listeria monocytogenes was detected (in 25g) in 2 milk samples (6,9%).
6 fishery products samples were taken. Listeria monocytogenes was detected (in 25g) in 1 sample.
94 dairy products samples were taken. Listeria monocytogenes was detected (in 25g) in 2 samples (2,1%).

HIRS
Monitoring (foodstuffs intended for particular nutritional uses and catering)
In 2010, 320 samples of different RTE foods from above describe groups were taken. Listeria monocytogenes (in 25 g) was found in 4 samples RTE deli dishes out of 200 samples taken at catering (2%) . Listeria monocytogenes (in 25 g) was found in 3 samples of ready-to-eat salads and 1 sample of sliced cooked meat product. No sample exceeded the criteria set in the legislation (< 100 cfu/g).
Listeria monocytogenes (in 25 g) was not detected in ready-to-eat foods intended for infants, ready-to-eat foods for special medical purposes and ready-to-eat cakes, deserts and pastry.
Out of all 320 samples taken, 1,3% were positive on presence of Listeria monocytogenes in 25 g.

IRSAFF
Monitoring (foodstuffs of non animal origin except intended for particular nutritional uses and catering)
In 2010, 160 samples of different foods from above describe groups were taken. Listeria monocytogenes

(in 25 g) was found in 4 samples of frozen fruits and vegetables. No sample exceeded the criteria set in the legislation (< 100 cfu/g).
Listeria monocytogenes (in 25 g) was not detected in deli dishes with long shelf life, RTE cut fruits and vegetables, deserts and pastry.
Out of 160 samples taken, 2,5% were positive on presence of Listeria monocytogenes in 25 g.

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

HIRS
The percentage of positive samples decreased from 4,0% in 2009 to 1,3% in 2010.
Decrease in the number of positive samples is consequence of exclusion of certain food groups and decreased number of the samples taken due to the change of the competence.

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Dairy products, unspecified [1)]	VARS	Batch	25g	94	2	0	0	94	0	2
Milk, cows' - raw - at farm [2)]	VARS	Batch	25g	29	2	29	2	29	0	1

Comments:

[1)] n=5

[2)] n=5

Footnote:

Dairy products: the same samples were tested with detection and enumeration method.

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Bakery products - cakes - at catering - Monitoring - official sampling (n=1, cakes, desserts and pastry)	HIRS	Single	25g	100	0	100	0	100	0	0
Cheeses made from cows' milk - unspecified - at catering - Monitoring - official sampling (n=1, grated or sliced cheese) [1)]	HIRS	Single	25g	12	0	12	0	12	0	0
Fishery products, unspecified (RTE) [2)]	VARS	Batch	25g	6	1	6	1	6	0	0
Foodstuffs intended for special nutritional uses - dietary foods for special medical purposes - at retail - Monitoring - official sampling (n=10, ready-to-eat foods) [3)]	HIRS	Batch	25g	10	0	10	0			
Foodstuffs intended for special nutritional uses - ready-to-eat - at retail - Monitoring - official sampling (n=10, foods intended for infants) [4)]	HIRS	Batch	25g	10	0	10	0			
Fruits and vegetables - at retail - Monitoring - official sampling (frozen) [5)]	IRSAFF	Batch	25g	30	4	30	0	30	4	0
Fruits and vegetables - precut - at retail - Monitoring - official sampling [6)]	IRSAFF	Batch	25g	30	0	30	0	30	0	0
Meat, mixed meat - meat products - at catering - Monitoring - official sampling (n=1, sliced cooked meat products and sousages) [7)]	HIRS	Batch	25g	31	1	31	1	31	1	0
Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - meat products [8)]	VARS	Batch	25g	196	39	196	39	196	7	4
Other food of non-animal origin - at retail - Monitoring - official sampling (sweets)	IRSAFF	Single	25g	50	0	50	0	50	0	0

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Other processed food products and prepared dishes - unspecified - ready-to-eat foods - at catering - Monitoring - official sampling (n=1, mainly sandwiches and spreads) [9)]	HIRS	Single	25g	8	0	8	0	8	0	0
Other processed food products and prepared dishes - unspecified - ready-to-eat foods - chilled - at retail - Monitoring - official sampling (deli dishes with long shelf life)	IRSAFF	Single	25g	50	0	50	0	50	0	0
Ready-to-eat salads - at catering - Monitoring - official sampling (n=1) [10)]	HIRS	Single	25g	127	3	127	3	127	3	0
Sauce and dressings - at catering - Monitoring - official sampling (n=1) [11)]	HIRS	Single	25g	22	0	22	0	22	0	0

Comments:

[1)] from sample group RTE deli dishes

[2)] n=5

[3)] n=10

[4)] n=10

[5)] n=5

[6)] n=5

[7)] from sample group RTE deli dishes

[8)] n=5

[9)] from sample group RTE deli dishes

Table Listeria monocytogenes in other foods

Comments:

[10)] from sample group RTE deli dishes

[11)] from sample group RTE deli dishes

Footnote:

In case of both results reported (for detection and enumeration method) the same samples were tested with both methods.

2.3.4 Listeria in animals

A. L. monocytogenes in animal

Monitoring system

Sampling strategy

Disease is monitored on the basis of clinical signs and/or detection of listeriosis in other animals at the same holding in accordance with national legislation.
Active monitoring of listeriosis in animals is not performing.

Frequency of the sampling

Samples are taken in case of clinical signs.

Type of specimen taken

Blood, milk, faetus (abortion), brain tissue.

Methods of sampling (description of sampling techniques)

Immediately upon suspicion of disease on the basis of clinical signs and/or detection of listeriosis in other animals in the same holding, the animal owner must immediately inform the authorised veterinary organisation which must submit the animal samples for investigation.

Case definition

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

Diagnostic/analytical methods used

Bacteriological method
Isolation and identification: ISO 11290-1

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. In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GAP, GHP, and record keeping.

Control program/mechanisms

The control program/strategies in place

National control program is carried out in accordance with:
national Rules on contagious animal disease
- registration or approval of holdings, establishment, transporters, collection centres and dealers, who are subject to veterinary controls
- identification and registration of animals.
- regular official veterinary inspections at the holdings.
- movement of animals accompanied by the prescribed documents.
- veterinary referral form for sick animals and animals from stables with unverified or suspected epizootiological conditions.
- obligated notification between veterinary and public health services in case of zoonoses occurrence in animals or humans.

Measures in case of the positive findings or single cases

Measures may be introduced after the public health service has notified the veterinary service of an onset of clinical signs of disease in humans. Depending on the nature of disease, or where necessary, VARS and public health service shall conduct the epidemiological and/or epizootiological investigations. Based on the investigation results, VARS may institute the required veterinary measures in animal husbandry, or other necessary measures.

- providing for potable water that is fit for consumption, water for watering, and feed,
- providing for and maintaining the required conditions of hygiene in animal accommodation facilities, and in other premises and installations intended for keeping animals,
- providing for hygiene at parturition and during milking,
- providing for veterinary order in public places intended for animal assembly, in the means of transport intended for the transport of animals, products, raw materials, foodstuffs, waste, and animal feed, in pens, on pastures and in facilities intended for animal assembly, animal slaughter, and for collecting, treating, processing and storing raw materials, products, foodstuffs, waste, and animal feed,
- providing for food safety and for compliance with the veterinary conditions for their production and circulation,
- preventing the introduction of disease agents into animal accommodation facilities,
- implementing veterinary measures in animal accommodation facilities,
- handling dead animal carcasses and other waste, waste waters, animal faeces, and urine in compliance with the required methods,
- providing for preventive disinfection, disinsectisation and deratisation in facilities, on public surfaces and in the means of transport,
- other recovery measures.

Notification system in place

At the presence of a contagious disease, or signs giving rise to suspicion that an animal has fallen sick or died of a contagious disease, the animal keeper shall immediately notify thereof the veterinary organisation. A veterinary organisation shall notify of disease the relevant VARS Regional Office in cases only, where the diagnostic test results have confirmed the presence of disease. A report on the occurrence of such diseases shall be drawn up on a monthly basis, by day 10 in the month for the previous month, in the electronic form, via VARS Central Information System (CIS VURS-EPI). At a suspected or confirmed presence of disease, the competent public health services shall be notified as well.

Results of the investigation

Results for 2010:

CATTLE

Listeriosis was identified in 3 bovine animals on 3 holdings.

SHEEP/GOATS

Listeriosis was identified in 9 small ruminants on 9 holdings.

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

Most notified human E.coli cases are probable pathogenic. From 1990 to 2010 from 51 to 233 cases of all E.coli were notified.

Just minor part of all notifications were confirmed as VTEC infections where VTEC toxins and or genes were positive(up to 20 cases yearly).

HUS is notified usually once yearly.

The real burden of VTEC infections is probably greater.

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 cases(laboratory confirmed - VTEC toxin positive and /or vtec genes positive), infection is currently not a problem; no outbreaks of VTEC were recorded in last years. (One EPEC O127 outbreak in a restaurant and one E.coli hydric outbreak were recorded in 2007).
Most human cases are young, vulnerable children.

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

In 2010, 299 bovine feces samples were tested on the presence of five VTEC serogroups (O157, O26, O103, O145 and O111). In three (3) samples one of the following serogroups was identified: O103, O145 and O157.

Recent actions taken to control the zoonoses

Surveillance of VTEC should be enhanced - all VTEC "suspected samples" should be sent to laboratory to confirm toxins/genes at least for some population groups.

The following amendments were made:

Date of Modification	Row name	Old value	New value
2011-11-09	Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)	In 2008, 265 bovine meat samples were taken. VTEC O:157 was detected in one sample (0,38%) and in less than 2% of animal samples at slaughterhouse. Regarding bovine meat the situation is considered favourable. In 2009, sampling was conducted in sheeps (animal sample-faeces) at slaughterhouses. VTEC O:157 was detected in one(1)out of 106 samples tested (0,9%).	In 2010, 299 bovine feces samples were tested on the presence of five VTEC serogroups (O157, O26, O103, O145 and O111). In three (3) samples one of the following serogroups was identified: O103, O145 and O157.

2.4.2 E. coli infections in humans

A. Verotoxigenic Escherichia coli infections in humans

Reporting system in place for the human cases

Human cases of E.coli are notifiable by national Law on Infectious Diseases (Official Gazette number 69/95, revised 33/2006).
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.
HUS notification is not obligatory.

Case definition

Case definition of E.coli infections according to ECDC definitions from 2008.
Laboratory confirmed VTEC cases are cases with E.coli infection which produce V1 and or V2 toxins and have also gen(es) for toxin(s) and other genes.

Diagnostic/analytical methods used

Isolation, biochemial tests, O serotypisation;
identification of VT1 and VT2 toxins and genes.

Notification system in place

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 National Institute of Public Health.

History of the disease and/or infection in the country

Real burden of disease is not known.
Notification data for all E.coli: from 1990 to 2010 yearly number of notifications ranged from 51 to 233.
Confirmed VTEC cases were a minor part of them, up to 20 cases.

Results of the investigation

According to notifications of laboratory confirmed VTEC cases, VTEC infections are small part of all E.coli infections . According to notifications VTEC infection is not a problem.
No VTEC outbreaks were recorded in last 10 years.

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

In 2010 20 VTEC confirmed cases were recorded; 2 of them were E.coli 0157, in 2009 12 (one of them was O157).

Relevance as zoonotic disease

The real burden of infection is not known.
According to notifications of real VTEC (VT1 and VT2 toxins and genes confirmed), the number of notifications is low and infection is not a problem yet. HUS is very rarely reported as well.
The source of infections often remains unclear; possible source is mostly bovine meat.
No outbreaks were recorded in last years (but one outbreak of EPEC O127 in a restaurant and one hydric outbreak of E.coli).

Table Escherichia coli, pathogenic in humans - Species/serotype distribution

Species/serotype Distribution	Cases	Cases Inc.	Autochthon cases	Autochthon Inc.	Imported cases	Imported Inc.
Escherichia coli, pathogenic	40	1.96	0	0	0	0
- clinical cases	0	0	0	0	0	0
- lab. confirmed cases	1	0.05	0	0	0	0
- caused by O157 (VT+)	0	0	0	0	0	0
- caused by other VTEC	1	0.05	0	0	0	0
- clinical cases	0	0	0	0	0	0
- laboratory confirmed	19	0.93	0	0	0	0
- caused by 0157 (VT+)	2	0.10	0	0	0	0
- caused by other VTEC	17	0.83	0	0	0	0

Table Escherichia coli, pathogenic in humans - Age distribution

Age distribution	Verotoxigenic E. coli (VTEC)			Verotoxigenic E. coli (VTEC) - VTEC O157:H7			Verotoxigenic E. coli (VTEC) - VTEC non-O157			E.coli, pathogenic, unspecified			Enteroinvasive E. coli (EIEC)		
	All	M	F	All	M	F	All	F	M	All	M	F	All	M	F
<1 year	3	2	1	0	0	0	3	2	1	12	6	6	0	0	0
1 to 4 years	6	4	2	0	0	0	6	4	2	28	17	11	0	0	0
5 to 14 years	2	2	0	0	0	0	2	2	0	7	3	4	0	0	0
15 to 24 years	1	0	1	0	0	0	1	0	1	4	1	3	0	0	0
25 to 44 years	3	2	1	0	0	0	3	2	1	8	3	5	0	0	0
45 to 64 years	4	3	1	0	0	0	3	2	1	11	6	5	0	0	0
65 years and older	1	0	1	0	0	0	0	0	0	16	4	12	1	1	0
Age unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total :	20	13	7	0	0	0	18	12	6	86	40	46	1	1	0

Age distribution	Enteropathogenic E. coli (EPEC)			Enterotoxigenic E. coli (ETEC)			Verotoxigenic E. coli (VTEC) - VTEC O157 - eae positive vtx1 and vtx2 positive			Verotoxigenic E. coli (VTEC) - VTEC O157 - eae positive vtx2 positive		
	All	M	F	All	M	F	All	M	F	All	M	F
<1 year	2	0	2	0	0	0	0	0	0	0	0	0
1 to 4 years	5	5	0	3	2	1	0	0	0	0	0	0
5 to 14 years	6	3	3	3	1	2	0	0	0	0	0	0
15 to 24 years	2	1	1	0	0	0	0	0	0	0	0	0
25 to 44 years	3	0	3	2	2	0	0	0	0	0	0	0
45 to 64 years	3	1	2	0	0	0	1	1	0	0	0	0

Table Escherichia coli, pathogenic in humans - Age distribution

Age distribution	Enteropathogenic E. coli (EPEC)			Enterotoxigenic E. coli (ETEC)			Verotoxigenic E. coli (VTEC) - VTEC O157 - eae positive vtx1 and vtx2 positive			Verotoxigenic E. coli (VTEC) - VTEC O157 - eae positive vtx2 positive		
	All	M	F	All	M	F	All	M	F	All	M	F
65 years and older	8	2	6	1	0	1	0	0	0	1	0	1
Age unknown	0	0	0	0	0	0	0	0	0	0	0	0
Total :	29	12	17	9	5	4	1	1	0	1	0	1

2.4.3 Escherichia coli, pathogenic in foodstuffs

A. Verotoxigenic E. coli (VTEC) in food

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

Situation concerning VTEC O157 in concerned food product groups is favourable.

2.4.4 Escherichia coli, pathogenic in animals

A. Verotoxigenic Escherichia coli in cattle (bovine animals)

Monitoring system

Sampling strategy

VARS
Sampling is carried out continually throughout the year at approved bovine slaughter establishments where more than 1000 bovine animals per year are slaughtered.
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.

Frequency of the sampling

Animals at slaughter (herd based approach)

Sampling distributed evenly throughout the year

Type of specimen taken

Animals at slaughter (herd based approach)

Faeces

Methods of sampling (description of sampling techniques)

Animals at slaughter (herd based approach)

A faeces sample is taken prior to slaughter or a sample of intestinal content is taken after slaughter, upon the evisceration from the intestines, upon the aseptic opening of the intestinal wall, or a tied-up portion of the caecum containing an adequate quantity of faeces is submitted to the laboratory. The sample shall be stored in a sterile bag. At least 50g of faeces shall be taken.
Samples must be delivered to the laboratory in the shortest possible time, as a rule, immediately after sampling (on the same day) or within 24 hours after sampling. In the period from the sampling to the beginning of the analysis the sample material must be stored in a cold place, at the temperature of 4oC (+/ - 2oC).

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 10g faeces sample, where the zoonotic agent has been isolated from.

Diagnostic/analytical methods used

Animals at slaughter (herd based approach)

a) Molecular methods:
- PCR Multiplex (verotoxin determination)
- Real time PCR (toxic strains determination)

b) Bacteriological methods:
- isolation (in accordance with CRL recomendations)
- ISO 16654: 2001

Control program/mechanisms

The control program/strategies in place

- Registration and/or approval of holdings, establishments, transporters, collection centres and dealers, who are subjected to veterinary checks
- Identified and registered animals
- Regular official veterinary checks on holdings
- Movements of animals accompanied by prescribed documents
- Veterinary referral form to accompany sick animals and animals coming from holdings with an unverified or suspect epizootiological situation

Notification system in place

The laboratory sends a copy of the form, together with the copy of the investigation report, to the main office of the VARS (once per month) and the original sampling report to the business operator and, in the event of official sampling, also to the official veterinarian.

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 2010, 299 bovine faeces samples were analysed for the presence of the following serogroups of VTEC: O157, O26, O103, O145 and O111. In three (3) samples one of these serogroups were identified. The following serogroups were identified: O103, O145 and O157.

Table VT E. coli in animals

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified	Verotoxigenic E. coli (VTEC) - VTEC O103	Verotoxigenic E. coli (VTEC) - VTEC O145
Cattle (bovine animals)	VARS	Animal	10g	299	3	1	2	0	1	1

2.5 TUBERCULOSIS, MYCOBACTERIAL DISEASES

2.5.1 General evaluation of the national situation

A. Tuberculosis general evaluation

History of the disease and/or infection in the country

Registry of TB 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, later ECDC.
The incidence of all TB cases in recent years is lower than 15 / 100 000 inhabitants.

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. In 2008 the incidence was 10,6/100.000 inhabitants and in 2009 the incidence was 8,5/100.000 inhabitants. in 2010 the incidence was 7,38 /100 000 inhabitants.
Most of the cases are autochtonous, some are imported.
In 2009, there were 57 imported cases of TBC in Slovenia: 36 from Bosnia, 5 from Croatia, 4 from Kosovo, 8 from Serbia, 1 from Montenegro, 1 from Iran, 1 from Nigeria and 1 from Macedonia.
In 2010, there were 41 imported cases; 22 from Bosnia, 4 from Kosovo, 3 from Serbia, 2 from Croatia, 1 case from other countries: Montenegro, Macedonia, Romania, Ucraine, other. In 4 cases there was reactivation of tbc.
Tuberculosis is not a major epidemiological problem.

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

Tbc due to Mycobacterium bovis is not relevant as zoonotic disease.

2.5.2 Tuberculosis, mycobacterial diseases in humans

A. Tuberculosis due to Mycobacterium bovis in humans

Reporting system in place for the human cases

Registry of TB cases of Slovenia was founded in 1954 and was since then in Hospital in Golnik.
It is updated regularly. In 1995 it was updated -reorganized according to demands of WHO and Euro TB, laer ECDC.

Registry on TB encounters:
- personnal data of TB cases;
- clinical data of TB cases, data on diagnostic procedures, therapy;
- data on antimicrobial resistence;
- data on diagnostics of TB contacts, HIV patients..;

Data on BCG vaccination from 2005 on.
Data on suspected (laboratory unconfirmed) TBC cases are also collated and sent to tbc registry. Further diagnostic procedures are done to confirm new cases. Epidemiological investigations of contacts of suspected cases are also performed.
Data on TB cases in Slovenia are sent to WHO and Euro TB.

Case definition

According to ECDC case definition from 2008.

Diagnostic/analytical methods used

Mycobacteria are mostly isolated from: (induced) sputum, bronchoscop.,gastric lavage, gastric juice.
Bacteria are rarely confirmed in exudates, liquor, biopsy specimen, blood, bone marrow..
Ziehl-Neelson and Auramin dyes (autofluorescent microscope) are used.
Lowenstein-Jensen solid medium and MGIT Bactec liquid medium are used.
Antimicrobial activity is tested on same media.
Identification of types is done with combination of microbiological, molecular and biochemical methods.

Notification system in place

Reporting system: medical doctors and laboratories are obliged by law to notify the confirmed TB cases within one week to the TB registry in Hospital Golnik.

History of the disease and/or infection in the country

Registry of TB 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.
The incidence of all TB cases in recent years is lower than 15 / 100 000 inhabitants.

Results of the investigation

In 2006 one case of human infection with Mycobacterium bovis was confirmed, in 2007 two cases.
In 2008, 2009 and in 2010, no case of human infection with Mycobacterium bovis was confirmed.

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

Tuberculosis is currently not an epidemiological problem.

Relevance as zoonotic disease

Tbc due to Mycobacterium bovis is not relevant as zoonotic disease.

Table Mycobacterium in humans - Species/serotype distribution

Species/serotype Distribution	Cases	Cases Inc.	Autochthon cases	Autochthon Inc.	Imported cases	Imported Inc.
Mycobacterium	163	7.97	122	5.96	41	2.01
M. bovis	0	0	0	0	0	0
M. tuberculosis	151	7.38	114	5.57	37	1.81
Reactivation of previous cases	12	0.59	8	0.39	4	0.20

Table Mycobacterium in humans - Age distribution

Age distribution	M. bovis			M. tuberculosis		
	All	M	F	All	M	F
<1 year	0	0	0	0	0	0
1 to 4 years	0	0	0	1	0	1
5 to 14 years	0	0	0	0	0	0
15 to 24 years	0	0	0	11	6	5
25 to 44 years	0	0	0	48	35	13
45 to 64 years	0	0	0	42	30	12
65 years and older	0	0	0	49	28	21
Age unknown	0	0	0	0	0	0
Total :	0	0	0	151	99	52

2.5.3 Mycobacterium in animals

A. Mycobacterium bovis in bovine animals

Status as officially free of bovine tuberculosis during the reporting year

The entire country free

The requirements for the recognition of status of the entire country was fulfilled at the end of 2008. Officially free status of bovine tuberculosis was granted to Slovenia with the Commission Decision 342/2009/EC.

Monitoring system

Sampling strategy

For OTF status maintenance, all bovine animals older than 6 weeks in three-annual intervals have to be tested.
In 2010, TB testing was performed on all bovine animals older than 6 weeks in 33% of all herds.
Bacteriological examination:
- lungs of cattle older than 30 month in all cases in which the official veterinarian found the signs of pneumonia in a post-mortem examination.

Frequency of the sampling

Intradermal tuberculin test:
- interval between routine tuberculin test: three years.

Bacteriological examination:
- lungs of cattle older than 30 month in all cases in which the official veterinarian found the signs of pneumonia in a post-mortem examination.

Methods of sampling (description of sampling techniques)

Intradermal TB testing accordance with Council Directive 64/432/EEC and in accordance with the National Rules on animal diseases;
Samples of lungs in animals older then 30 month with the signs of pneumonia were taken by official veterinarian in slaughterhouses and sent to bacteriological examination to the National veterinary institute in Ljubljana.

Case definition

TBC is suspected if:
- weight loss or swelling of lymph nodes are found in animals that cough a lot;
- granulomatic or other changes that lead to the suspicion of TBC are found in the organs of slaughtered or dead animals;
- an inconclusive or positive reaction to intradermal tuberculin test was identified; the intradermal tuberculin test and the assessment of the results are carried out in accordance with the Rules on contagious animal diseases;
- animals came into contact with people or animals suspected to have been infected or are infected with TBC;
- animals are kept at a holding where TBC was found.

TBC is confirmed if M.bovis is isolated.
Status of an officially tuberculosis-free herd shall be withdrawn, when tuberculosis has been confirmed

through the isolation of the agent during laboratory investigation.

Diagnostic/analytical methods used

INTRADERMAL TB TESTING

Intradermal TB testing is carried out in accorance with Council Directive 64/432/EEC and in accordance with the National Rules on animal diseases.

BACTERIOLOGICAL EXAMINATION

Mycobacterium bovis shall be confirmed by:

1.direct microscopic examination of smears of suspect tissues (Ziehl-Neelsen staining, auramine-rodamine staining),

2.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°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,

3.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.

Control program/mechanisms

The control program/strategies in place

The disease has been controlled for several years on the basis of the annual order or rules. The programme is carried out in the scope of systematic monitoring and control of diseases in animal populations.

In 2003, all animals older than 6 weeks and all breeding bulls in insemination centres and natural mating were subjected to tuberculin testing. No agent was found. Status: in 2003, 44,276 herds were officially tuberculosis-free. In 2004, all animals older than 6 weeks in herds that obtained the officially tuberculosis-free status in the previous year were subjected to tuberculin testing. At the end of 2004, 99.983% of bovine herds were officially tuberculosis-free, while the tuberculosis-free status was temporarily suspended for 8 herds due to incompliance with the obligation to conduct tests.

Since the annual average of herds has not exceeded 1% in the recent two one-year control periods, the

interval between two regular investigations was extended to two years, which is why cattle was not tuberculin-tested in 2005. In 2006, all animals older than 6 weeks were tuberculin-tested. In addition all samples of lungs with pneumonic changes in animals older then 2 years were bacteriologically examined for presence of M.bovis in 2006.
In 2007, tuberculin testing was not carried out. However, according to the Rules on carrying out the systematic monitoring of contagious diseases and vaccination in 2007, the following examination had to be carried out for obtaining the status of an officially tuberculosis-free country:
Samples must be taken for bacteriological examination with the aim of exluding the infection with Mycobacterium bovis in all cases in which the official veterinarian found the signs of pneumonia in cattle older than 30 months in a post-mortem examination.
In 2008, TB testing was performed on all bovine animals older than 6 weeks. Also bacteriological examination of lungs of cattle older than 30 months in all cases in which the official veterinarian found the signs of pneumonia in a post-mortem examination.
In 2009, officially free status of bovine tuberculosis was granted to Slovenia.

National control program is carried out in accordance with:
- national Rules on contagious animal disease (rules define the conditions for officially tuberculosis-free bovine herd and officially tuberculosis-free status of the country, TB test procedures and interpretation of results, analytical methods for identification of agent, notification system)
- national Rules on systematic monitoring of animal diseases and vaccination issued every year (rules define the sampling strategy for every year);
- national Rules on measures for detection, prevention and eradication of tuberculosis in bovine animal (rules define the measures in case of suspected presence of TBC and confirmed presence of TBC.

National control program is harmonised with all existing Community legislation on TBC.
Other control mechanisms:
- Registration or approval of holdings, establishment, transporters, collection centres and dealers, who are subject to veterinary controls
- Identification and registration of animals.
- Regular official veterinary inspections at the holdings.
- Movement of animals accompanied by the prescribed documents.
- Veterinary referral form for sick animals and animals from stables with unverified or suspected epizootiological conditions.
- Measures at suspected and confirmed presence of TBC.
- Assessment and conferring of officially tuberculosis-free status.

Measures in case of the positive findings or single cases

Measures at suspected presence of TBC
At the suspect holding, official control shall be introduced, epizootiological investigation shall be carried out as well as the necessary laboratory tests, and the status of the herd shall be temporarily withdrawn.
Furthermore, the following measures shall be ordered:
- prohibition of movement from and to the holding with the exception of the movement to the slaughterhouse where animals are to be slaughtered under official supervision,
- all the animals which have reacted positively to the intradermal tuberculin test must be removed for slaughter under official supervision,
- isolation of animals suspected to have TBC; subject to preliminary heat treatment, the milk of such animals may be used as food for other animals at the holding; the milk of other animals may be used as

food for humans, provided that it is at least pasteurised in the diary under official supervision,
- setting up of disinfection barriers at the exit from and entry to the holding and into individual facilities where cattle is kept.

Measures at confirmed presence of TBC
Furthermore, the following measures shall be implemented at the infected holding:
- the status of officially TBC-free herd is temporarily suspended;
- isolation of all the animals in which the disease has been identified because or they did not react negatively to tests and which could be infected, as estimated on the basis of the epizootiological data;
- the animals stated in the previous indent shall be slaughtered within 30 days of receiving the results of performed tests under the official supervision;
- prohibited marketing of the products of cattle origin from the infected holding;
- prohibited removal of feed and manure; the manure removed from all the facilities in which cattle is kept must be stored at a location to which the susceptible animals may not access; disinfection of the solid and liquid manure, storage of manure for a period of at least three months. Disinfection shall not be necessary if manure is covered with a layer of uninfected manure or soil.
- cleaning and disinfecting;
- intradermal tuberculin test in all cattle at the holding in accordance with the rules regulating contagious animal diseases;
- other recovery measures.

In animals that have shown positive reaction to intradermal tuberculin test, or when the disease is suspected on the basis of clinical signs or during the pathoanatomical examination, the decision if meat of animal is fit for human consuption shall be assessed in accordance with the provisions of hygene regulations.

The officially tuberculosis-free status of a herd shall not be restored until the cleaning and disinfection of the premises and equipment has taken place, and until all the remaining animals over six weeks of age have reacted negatively to at least two consecutive intradermal tuberculin tests the first test shall be carried out at least 60 days, and the second test at least 4 months up to a maximum of 12 months, upon culling the last positive reactor.

Notification system in place

According to Rules on animal disease the notification of disease is mandatory. In case of a suspected presence of disease, all the necessary steps shall immediately be taken in order to confirm the presence of disease, or to reverse the suspicion thereof. Veterinary administration of the RS officially confirm the presence of disease.
Natural and legal persons shall immediately notify a Regional Office of VARS or a veterinary organisation in case they establish a threat to animal health or as a consequence thereof to human health, present within the required deadline and free of charge the data on the state of health of the animals, on the safety of animal products and animal feed and on the use of medicinal products and implementation of measures, and enable the verification of the data presented (Veterinary Compliance Criteria Act).
When the presence of a disease is suspected the veterinary organisation shall immediately inform the Regional Office of the VARS of the suspected disease.
The designated laboratory shall immediately inform the Regional Office of the VARS on the results of diagnostic test by telephone and by fax or via email.
In case of a primary outbreak of disease in the country, the designated laboratory shall immediately communicate the results of diagnostic test by telephone and by fax or via email to the Main Office of the VARS.

The designates laboratory must report the results of diagnostic test via computer database CIS VURS-EPI.
In the case of a zoonosis, the official veterinarian shall notify of the suspected presence of disease also the competent public health services.

Results of the investigation

In 2010, TB testing was carried out in 11.596 bovine herds and 162.366 bovine animals. For bacteriological examination 19 samples were sent and all were negative. At the end of 2010, 100% of herds were officially tuberculosis-free.

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

The presence of tuberculosis (Mycobacterium bovis) was not confirmed in 2010.

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 results of testing, the possibility of transmission of the disease from animals to humans is negligible.

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

If present, the row "Total -1" refers to analogous data of the previous year.

Region	Total number of existing bovine		Officially free herds		Infected herds		Routine tuberculin testing		Number of tuberculin tests carried out before the introduction into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/432/EEC)	Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological	Number of animals detected positive in bacteriological examination
	Herds	Animals	Number of herds	%	Number of herds	%	Interval between routine tuberculin tests	Number of animals tested			
Slovenija	36293	465720	36293	100	0	0	every three years	162366	0	19	0
Total : [1)]	36293	465720	36293	100	0	0	N.A.	162366	0	19	0

Comments:

[1)] N.A.

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 33/ 2006).
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 has been notifiable 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 eliminated in 1961. The disease in goat has been eliminated already in 1955.

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

Human brucellosis has not been considered as epidemiological problem for a long time. The disease may be imported from endemic countries.

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 consumed abroad.

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, as the disease is not considered as epidemiological problem in Slovenia; otherwise continuation of the existing monitoring programmes.

2.6.2 Brucellosis in humans

A. Brucellosis in humans

Reporting system in place for the human cases

Human cases of brucellosis are notifiable by National law on infectious diseases (Official Gazette number 69/1995, revised 33 /2006).
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 notifiable for more than 50 years.

Case definition

EC /ECDC case definition from 2008.

Diagnostic/analytical methods used

Brucella specific antibody response by the standard agglutination test (SAT), ELISA or equivalent tests.

Notification system in place

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 was introduced after the second world war.

History of the disease and/or infection in the country

Caprine-ovine brucellosis in Istria and the Slovenian littoral in the middle of the 20th:

From an epizootiological point of view, the sheep and goat husbandry of Mediterranean Slovenia, Croatian Istria and southeastern Friuli (Isonzo plain) had some important attributes. In the middle of the 20th century more than 5,000 sheep, which were kept and bred in small flocks of between 50 and 150 animals, migrated seasonally to the Isonzo (Soča) plain and western Istria during winter, and to the mountainous inland regions during summer. Both the ovine and caprine Brucella melitensis infections started in the 1930's and became panzootic during World War II and the years immediately following it.
Another epidemiologically important feature was the production of cheese from the ewes' milk. Human infections were generally alimentary and between 1945 and 1954 549 cases were registered in littoral Slovenia (Slovensko Primorje) alone.
The Yugoslav eradication programme, which involved the testing of animals and immediate culling of reactors, was a radical one. Where 30 % or more of a flock tested positively, the entire flock was eliminated.
In 1952 brucellosis was eliminated in Slovenia.
The danger of reimportation of disease still exists.

Results of the investigation

In 2008 and 2009 we identified 2 cases of brucelosis. Both were imported.
In 2010 no human cases were notified.

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

Human brucellosis in Slovenia has not been considered an epidemiological problem for a long time. Nevertheless the infection may be imported from endemic countries.

Relevance as zoonotic disease

Human brucellosis is not considered as epidemiological problem for a long time (more than 20 years).

Table Brucella in humans - Species/serotype distribution

Species/serotype Distribution	Cases	Cases Inc.	Autochthon cases	Autochthon Inc.	Imported cases	Imported Inc.
Brucella	0	0	0	0	0	0
B. abortus	0	0	0	0	0	0
B. melitensis	0	0	0	0	0	0
B. suis	0	0	0	0	0	0
Occupational cases	0	0	0	0	0	0

Table Brucella in humans - Age distribution

Age distribution	B. abortus			B. melitensis			Brucella spp., unspecified		
	All	M	F	All	M	F	All	M	F
<1 year	0	0	0	0	0	0	0	0	0
1 to 4 years	0	0	0	0	0	0	0	0	0
5 to 14 years	0	0	0	0	0	0	0	0	0
15 to 24 years	0	0	0	0	0	0	0	0	0
25 to 44 years	0	0	0	0	0	0	0	0	0
45 to 64 years	0	0	0	0	0	0	0	0	0
65 years and older	0	0	0	0	0	0	0	0	0
Age unknown	0	0	0	0	0	0	0	0	0
Total :	0	0	0	0	0	0	0	0	0

2.6.3 Brucella in animals

A. Brucella abortus in bovine animals

Status as officially free of bovine brucellosis during the reporting year

The entire country free

Officially free status of bovine brucellosis was granted to Slovenia with the Commission Decision 399/2007/EC.

Monitoring system

Sampling strategy

In accordance with the provisions of Annex A, point II. A of Council Directive 64/432 to retain the officially brucellosis free status of the country the following sampling scheme has been implemented:
According to the Rules on carrying out the systematic monitoring of contagious diseases and vaccination in 2010, the following examination was carried out:
- all bovine animals older than 24 months in 20% of all herds according to the VARS progamme,
- notification of abortions suspected of being due to brucellosis and further investigation by CA.

Samples are taken by veterinarians of the veterinary organisations performing public veterinary service on the basis of concession.
Samples are analysed in NRL. Rose Bengal has been used as a screening test and CFT has been used as a confirmatory test.

Frequency of the sampling

Annualy.

Type of specimen taken

Blood
Milk

Methods of sampling (description of sampling techniques)

The method used for taking blood samples is aseptic venipuncture. Blood is taken from the jugular vein or tail vein and put into sterile test tubes. Immediately after taking the samples, the test tubes for obtaining the serum are left for some time at room temperature. When the coagulation is completed, the test tube is put into the refrigerator at 4 oC. Blood samples must be kept in a cool environment (cooling bag) during the transport and must be delivered to the analytical laboratory within 48 hours after sampling.

Case definition

The disease is suspected if:
- an inconclusive or positive reaction with serological confirmatory test was identified in the framework of regular monitoring. The confirmatory serological test and the assessment of the results are carried out in accordance with the Rules on contagious animal diseases;
- one or more clinical signs appear: abortion, late placenta, infection of testicles and epididymis, arthritis, which could be in causal relationship with other clinical signs;
- animals came into contact with people or animals suspected to have been infected or are infected with

Brucellosis.

The disease is confirmed if:
- the agent has been isolated or
- the brucellosis skin test was positive or
- clinical signs have been found and the results of laboratory tests are positive.

Veterinary administration of the RS officially confirm the presence of disease.

Diagnostic/analytical methods used

a) Serological methods:
- Rose Bengal (RB) - screening test (OIE Manual, last edition)
- Complement fixation test - confirmatory test (OIE Manual, last edition)
- ELISA

b) Brucellosis skin test

c) Bacteriological method
- Identification of the agent (OIE Manual, last edition)

Vaccination policy

Vaccination prohibited.

Control program/mechanisms

The control program/strategies in place

National control program is carried out in accordance with:
- Rules on animal disease (rules define the conditions for officially brucellosis free bovine herd and officially brucellosis free status of the country, test procedures and interpretation of results, notification system),
- Rules on systematic monitoring of animal diseases and vaccination issued every year (rules define the sampling strategy for every year),
- Rules on measures for detection, prevention and eradication of brucellosis in bovine animal (rules define the measures in case of suspected and confirmed presence of brucellosis, case definition).

National control program is harmonised with all existing Community legislation on Brucellosis.

Other control mechanisms:
- Registration or approval of holdings, establishment, transporters, collection centres and dealers, who are subject to veterinary controls;
- Identification and registration of animals;
- Regular official veterinary inspections at the holdings;
- Movement of animals accompanied by the prescribed documents;
- Veterinary referral form for sick animals and animals from stables with unverified or suspected epizootiological conditions;
- When the presence of a disease is suspected the veterinary organisation shall immediately inform the Regional Office of the VARS of the suspected disease;
- Mandatory notification of abortus cases in cattle;
- Measures at suspected and confirmed presence of TBC;
- Assessment and conferring of officially brucelosis-free status.

Measures in case of the positive findings or single cases

Rules on the detection, prevention and eradication of brucellosis (Ur. l. RS, st. 91/2005, 13/2006)

1. Measures at suspected presence of brucellosis

Measures to be implemented at suspect holding include:
- immediate suspension of officially brucellosis free status of the herd;
- ban on movement on and from the holding in ruminants, pigs and horses with the exception of the movement to the slaughterhouse where animals are to be slaughtered under official supervision;
- the decision if meat of animal is fit for human consuption shall be assessed in accordance with the provisions of hygene regulations;
- isolation of animals susceptible for the disease;
- milk from those animals can be used for feeding animals on the same holding after heat treated;
- milk from other animals on the holding can be used for human consumption after heat treated (pasteurized) under official supervision in a dairy establishment;
- carrying out of the necessary diagnostic investigations;
- epidemiological investigation;
- setting up of disinfection barriers at the exit from and entry to the holding and into individual facilities where cattle is kept.

2. Measures at confirmed presence of brucellosis
Once brucellosis is officially confirmed the following measures are introduced (beside the above mentioned):
- withdrawal of officially brucellosis free status of the herd;
- census of all infected animals on the holding, and animals suspected to be infected;
- ban on trade of the products of animal origin or animal products;
- isolation and slaughter of infected cattle and all cattle suspected to be infected under official supervision;
- cattle has to be slaughtered within 30 days after confirmation of the disease;the decision if meat of animal is fit for human consuption shall be assessed in accordance with the provisions of hygene regulations.
- harmless disposal of dead and culled animals, aborted foetuses, placentas and ovarial fluids;
- harmless disposal of waste, manure, litter, by which the disease can be transmitted;
- ban of removal of feed and manure; the manure must be stored at a location to which the susceptible animals may not access, for a period of at least three months; disinfection and covering of the manure with a layer of uninfected manure or soil
- cleaning and disinfecting
- other recovery measures

The measures at the infected holding shall remain in force until the status of officially brucellosis-free herd is restored.

The officially brucellosis-free status of the herd may be restored, when all the animals having been in the herd at the time of the outbreak, are removed from the herd, or when all animals in the herd are subjected to examination, and where the results of two consecutive tests carried out in a 60-day interval on all animals older than 12 months are negative, where the first test shall be carried out at least 30 days after the removal of the last infected animal. In case of cows, which had been pregnant at the time of the outbreak of infection, the final test shall be carried out at least 21 days after calving of the last of the cows, which had been pregnant at the time of the outbreak of infection.

Notification system in place

According to Rules on animal disease the notification of disease is mandatory. In case of a suspected presence of disease, all the necessary steps shall immediately be taken in order to confirm the presence of disease, or to reverse the suspicion thereof. Veterinary administration of the RS officially

confirm the presence of disease.
Natural and legal persons shall immediately notify a Regional Office of VARS or a veterinary organisation in case they establish a threat to animal health or as a consequence thereof to human health, present within the required deadline and free of charge the data on the state of health of the animals, on the safety of animal products and animal feed and on the use of medicinal products and implementation of measures and enable the verification of the data presented (Veterinary Compliance Criteria Act).
When the presence of a disease is suspected the veterinary organisation shall immediately inform the Regional Office of the VARS of the suspected disease.
The designated laboratory shall immediately inform the Regional Office of the VARS on the results of diagnostic test by telephone and by fax or via email.
In case of a primary outbreak of disease in the country,the designated laboratory shall immediately communicate the results of diagnostic test by telephone and by fax or via email to the Main Office of the VARS.
The designates laboratory must report the results of diagnostic test via computer database CIS VURS EPI.
In the case of a zoonosis, the official veterinarian shall notify of the suspected presence of disease also the competent public health services.

Results of the investigation

In 2010, among the 61.666 examined animals (6.886 herds), none was positive. At the end of 2010, 100% of herds were officially brucellosis-free.
In addition, 154 bovine abortions were reported, B.abortus was excluded in all cases.

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

In Slovenia, taking into account the results of testing, the possibility of transmission of the disease to humans is negligible.

Additional information

Compulsory notification of abortions suspected of being due to brucellosis in accordance with Council Directive 64/432/EEC.

B. Brucella melitensis in goats

Status as officially free of caprine brucellosis during the reporting year

The entire country free

Officially free status of ovine/caprine brucellosis was granted to Slovenia with the Commission Decision 2005/179/EC.

Monitoring system

Sampling strategy

Following the recognition of officially brucellosis (B. melitensis) free status, animals have been tested in accordance with Point II.2.i of Annex A of Council Directive 91/68/EEC (5% of the ovine and caprine animals over six months of age).

According to the Rules on carrying out the systematic monitoring of contagious diseases and vaccination in 2010, 5% of sheep and goats older than 6 months was serologically tested for Brucella melitensis at the registered holdings with the aim of maintaining the status of officially brucellosis-free country.

Samples were taken by veterinarians of the veterinary organisations performing public veterinary service on the basis of concession.

Rose Bengal has been used as a screening test and CFT has been used as a confirmatory test.

Frequency of the sampling

Annualy.

Type of specimen taken

Blood

Methods of sampling (description of sampling techniques)

The method used for taking individual blood samples is aseptic venipuncture. Blood is taken from the jugular vein and put into sterile test tubes. Immediately after taking the samples, the test tubes for obtaining the serum are left for some time at the room temperature. When the coagulation is completed, the test tube is put into the refrigerator at 4 oC. Blood samples must be kept in a cool environment (cooling bag) during the transport and must be delivered to the analytical laboratory within 48 hours after sampling.

Case definition

The presence of the disease is officially confirmed or excluded by the VARS on the basis of clinical signs and the results of investigations.

In the event of an epidemic, the VARS officially confirms the presence of the disease on the basis of clinical signs and/or the results of epizootiological inquiries.

Diagnostic/analytical methods used

a) Serological methods:
- Rose Bengal (RB) - screening test (OIE Manual, last edition)
- Complement fixation test - confirmatory test (OIE Manual, last edition)
- ELISA

b) Bacteriological method
- Identification of the agent (OIE Manual, last edition)

Vaccination policy

Vaccination prohibited.

Control program/mechanisms

The control program/strategies in place

National control program is carried out in accordance with:
- Rules on contagious animal disease (rules define the conditions for officially brucellosis free ovine/caprine herd and officially brucellosis free status of the country, test procedures and interpretation of results, notification system)
- Rules on systematic monitoring of animal diseases and vaccination issued every year(rules define the sampling strategy for every year)
- Instruction on measures for detection, prevention and eradication of Brucellosis (rules define the measures in case of suspected presence and confirmed presence of disease, case definition).

National control program is harmonised with all existing Community legislation on Brucellosis in ovine/caprine animals.
Other control mechanisms:
- Registration or approval of holdings, establishment, transporters, collection centres and dealers, who are subject to veterinary controls,
- Identification and registration of animals,
- Regular official veterinary inspections at the holdings,
- Movement of animals accompanied by the prescribed documents,
- Veterinary referral form for sick animals and animals from stables with unverified or suspected epizootiological conditions.

Measures in case of the positive findings or single cases

1. Measures at suspected presence of brucellosis
At suspected presence of brucellosis, the veterinary organisation with concession 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 other holdings, which are suspected to be infected.

2. 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;
- harmless 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 other 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.

The decision if meat of animal is fit for human consuption shall be assessed in accordance with the provisions of hygene regulations.

Notification system in place

According to Rules on animal disease the notification of disease is mandatory. In case of a suspected presence of disease, all the necessary steps shall immediately be taken in order to confirm the presence of disease, or to reverse the suspicion thereof. Veterinary administration of the RS officially confirm the presence of disease.

Natural and legal persons shall immediately notify a Regional Office of VARS or a veterinary organisation in case they establish a threat to animal health or as a consequence thereof to human health, present within the required deadline and free of charge the data on the state of health of the animals, on the safety of animal products and animal feed and on the use of medicinal products and implementation of measures and enable the verification of the data presented (Veterinary Compliance Criteria Act).

When the presence of a disease is suspected the veterinary organisation shall immediately inform the Regional Office of the VARS of the suspected disease.

The designated laboratory shall immediately inform the Regional Office of the VARS on the results of diagnostic test by telephone and by fax or via email.

In case of a primary outbreak of disease in the country,the designated laboratory shall immediately communicate the results of diagnostic test by telephone and by fax or via email to the Main Office of the VARS.

The designates laboratory must report the results of diagnostic test via computer database CIS VURS EPI.

In the case of a zoonosis, the official veterinarian shall notify of the suspected presence of disease also the competent public health services.

Results of the investigation

In 2010, 2.533 sheep/goats were examined (111 herds), none was positive. At the end of 2010, 100% of herds were officially brucellosis-free.

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

No case of disease has been found since 1951.

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 results of testing, the possibility of transmission of the disease to humans is negligible.

Additional information

C. Brucella melitensis in sheep

Status as officially free of ovine brucellosis during the reporting year

The entire country free

Officially free status of ovine/caprine brucellosis was granted to Slovenia with the Commission Decision 2005/179/EC.

Monitoring system

Sampling strategy

Following the recognition of officially brucellosis (B. melitensis) free status, animals have been tested in accordance with Point II.2.i of Annex A of Council Directive 91/ 68/ EEC (5% of the ovine and caprine animals over six months of age).
According to the Rules on carrying out the systematic monitoring of contagious diseases and vaccination in 2010, 5% of sheep and goats older than 6 months was serologically tested for Brucella melitensis at the registered holdings with the aim of maintaining the status of officially brucellosis free country.
Samples were taken by veterinarians of the veterinary organisations performing public veterinary service on the basis of concession.
Rose Bengal has been used as a screening test and CFT has been used as a confirmatory test.

Frequency of the sampling

Annualy.

Type of specimen taken

Blood

Methods of sampling (description of sampling techniques)

The method used for taking individual blood samples is aseptic venipuncture. Blood is taken from the jugular vein and put into sterile test tubes. Immediately after taking the samples, the test tubes for obtaining the serum are left for some time at the room temperature. When the coagulation is completed, the test tube is put into the refrigerator at 4 oC. Blood samples must be kept in a cool environment (cooling bag) during the transport and must be delivered to the analytical laboratory within 48 hours after sampling.

Case definition

The presence of the disease is officially confirmed or excluded by the VARS on the basis of clinical signs and the results of investigations.
In the event of an epidemic, the VARS officially confirms the presence of the disease on the basis of clinical signs and/ or the results of epizootiological inquiries.

Diagnostic/analytical methods used

a) Serological methods:
- Rose Bengal (RB) - screening test (OIE Manual, last edition)
- Complement fixation test - confirmatory test (OIE Manual, last edition)
- ELISA

b) Bacteriological method
- Identification of the agent (OIE Manual, last edition)

Vaccination policy

Vacination prohibited.

Control program/mechanisms

The control program/strategies in place

National control program is carried out in accordance with:
- Rules on contagious animal disease (rules define the conditions for officially brucellosis free ovine/ caprine herd and officiallly brucellosis free status of the country,test procedures and interpretation of results, notification system)
- Rules on systematic monitoring of animal diseases and vaccination issued every year(rules define
the sampling strategy for every year)
- Instruction on measures for detection, prevention and eradication of Brucellosis (rules define the measures in case of suspected presence and confirmed presence of disease, case definition).

National control program is harmonised with all existing Community legislation on Brucellosis in ovine/ caprine animals.
Other control mechanisms:
- Registration or approval of holdings, establishment, transporters, collection centres and dealers, who are subject to veterinary controls
- Identification and registration of animals,
- Regular official veterinary inspections at the holdings,
- Movement of animals accompanied by the prescribed documents,
- Veterinary referral form for sick animals and animals from stables with unverified or suspected epizootiological conditions.

Measures in case of the positive findings or single cases

1. 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 susceptible 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.

2. 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;
- harmless 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 breeding materials of susceptible animals from the infected holding;
- 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.

The decision if meat of animal is fit for human consuption shall be assessed in accordance with the provisions of hygene regulations.

Notification system in place

According to Rules on animal disease the notification of disease is mandatory. In case of a suspected presence of disease, all the necessary steps shall immediately be taken in order to confirm the presence of disease, or to reverse the suspicion thereof. Veterinary administration of the RS officially confirm the presence of disease.
Natural and legal persons shall immediately notify a Regional Office of VARS or a veterinary organisation in case they establish a threat to animal health or as a consequence thereof to human health, present within the required deadline and free of charge the data on the state of health of the animals, on the safety of animal products and animal feed and on the use of medicinal products and implementation of measures and enable the verification of the data presented (Veterinary Compliance Criteria Act).
When the presence of a disease is suspected the veterinary organisation shall immediately inform the Regional Office of the VARS of the suspected disease.
The designated laboratory shall immediately inform the Regional Office of the VARS on the results of diagnostic test by telephone and by fax or via email.
In case of a primary outbreak of disease in the country,the designated laboratory shall immediately communicate the results of diagnostic test by telephone and by fax or via email to the Main Office of the VARS.
The designates laboratory must report the results of diagnostic test via computer database CIS VURS EPI.
In the case of a zoonosis, the official veterinarian shall notify of the suspected presence of disease also the competent public health services.

Results of the investigation

In 2010, 2.533 sheep/goats were examined (111 herds), none was positive. At the end of 2010, 100% of herds were officially brucellosis-free.

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

No case of disease has been found since 1951.

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 results of testing, the possibility of transmission of the disease to humans is negligible.

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

If present, the row "Total -1" refers to analogous data of the previous year.

Region	Total number of existing		Officially free herds		Infected herds		Surveillance			Investigations of suspect cases				
	Herds	Animals	Number of herds	%	Number of herds	%	Number of herds tested	Number of animals tested	Number of infected herds	Number of animals tested with serological blood tests	Number of animals positive serologically	Number of animals examined microbio logically	Number of animals positive microbio logically	Number of suspended herds
Slovenija	7689	164575	7689	100	0	0	111	2533	0	0	0	0	0	0
Total : [1)]	7689	164575	7689	100	0	0	111	2533	0	0	0	0	0	0

Comments:

[1)] N.A.

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

If present, the row "Total -1" refers to analogous data of the previous year.

Region	Total number of existing bovine		Officially free herds		Infected herds		Surveillance						Investigations of suspect cases								
							Serological tests			Examination of bulk milk			Information about			Epidemiological investigation					
	Herds	Animals	Number of herds	%	Number of herds	%	Number of bovine herds tested	Number of animals tested	Number of infected herds	Number of bovine herds tested	Number of animals or pools tested	Number of infected herds	Number of notified abortions whatever cause	Number of isolations of Brucella infection	Number of abortions due to Brucella abortus	Number of animals tested with serological blood tests	Number of suspended herds	Number of positive animals		Number of animals examined microbio logically	Number of animals positive microbio logically
																		Sero logically	BST		
Slovenija	36293	465720	36293	100	0	0	6886	61666	0	0	0	0	154	0	0	0	0	0	0	0	0
Total : [1)]	36293	465720	36293	100	0	0	6886	61666	0	0	0	0	154	0	0	0	0	0	0	0	0

Comments:

[1)] N.A.

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.
From 1990 to 2010 the number of yearly notifications were low (from 16 to 80 notifications).

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

Yersinia spp. is notifiable by national Law on Infectious diseases /(Official Gazette 69/95, revised 33/2006). Medical doctors and laboratories 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.

From year 2000 to 2010 the number of notified cases was between 16 and 80 (max incidence was 4/ 100 000). In 2009 there were 27 notifications of human cases, in 2010, 16.

The source of infections is mostly not known. No outbreaks were detected recently.

2.7.2 Yersiniosis in humans

A. Yersinosis in humans

Reporting system in place for the human cases

Yersinia is notifiable by national Law on Infectious diseases (Official Gazette 69/95, revised 33/2006). 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.

Case definition

According to definition of ECDC from 2008.

Diagnostic/analytical methods used

Isolation on Cefsulodin-Irgasan-Novobiocin Agar (CIN);
- identification and confirmation (Gram staining, biochemical tests);
- serotyping and biotyping;
- virulence genes detection with PCR.

Notification system in place

Yersinia is notifiable by national Law on Infectious diseases (Official Gazette 69/95). 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.

History of the disease and/or infection in the country

Yersiniosis is rarely reported in Slovenia.
From 1997 to 2010 the number of yearly notifications were low (from 16 to 80 notifications).

Results of the investigation

Rarely reported human disease. In 2010 16 notifications.
The source of infections is mostly not known. No outbreaks were detected in last 10 years.

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

The real burden of disease is not known because of undereporting of disease.
Source of infection is mostly not known.

Relevance as zoonotic disease

According to number of notifications a rare zoonosis.

Table Yersinia in humans - Species/serotype distribution

Species/serotype Distribution	Cases	Cases Inc.	Autochthon cases	Autochthon Inc.	Imported cases	Imported Inc.
Yersinia	16	.79	16	.79	0	0
Y. enterocolitica	1	0.05	1	0.05	0	0
Y. enterocolitica - O:3	14	0.69	14	0.69	0	0
Y. enterocolitica - O:9	1	0.05	1	0.05	0	0

Table Yersinia in humans - Age distribution

Age distribution	Y. enterocolitica			Yersinia spp., unspecified		
	All	M	F	All	M	F
<1 year	0	0	0	0	0	0
1 to 4 years	2	1	1	0	0	0
5 to 14 years	4	2	2	0	0	0
15 to 24 years	4	1	3	0	0	0
25 to 44 years	4	2	2	0	0	0
45 to 64 years	1	0	1	0	0	0
65 years and older	1	1	0	0	0	0
Age unknown	0	0	0	0	0	0
Total :	16	7	9	0	0	0

Table Yersinia in humans - Seasonal distribution

Seasonal Distribution / Months	Y. enterocolitica	Yersinia spp., unspecified
	Cases	Cases
January	4	0
February	2	0
March	1	0
April	0	0
May	3	0
June	2	0
July	0	0
August	2	0
September	0	0
October	1	0
November	0	0
December	1	0
not known	0	0
Total :	16	0

2.7.3 Yersinia in animals

A. Yersinia enterocolitica in pigs

Monitoring system

Sampling strategy

Animals at slaughter (herd based approach)

VARS
In 2008 and 2009, monitoring was carried out in all approved slaughterhouses with capacity of the slaughter more than 1000 porcine animals per year (99% of all yearly porcine slaughter). Sampled were animals raised in the Republic of Slovenia only.
Sampling was carried out by the slaughterhouse official veterinarians.
In 2010, monitoring of Yersinia enterocolitica in pigs was not performed.

Frequency of the sampling

Animals at slaughter (herd based approach)

Sampling distributed evenly throughout the year

Type of specimen taken

Animals at slaughter (herd based approach)

Tonsile swabs.

Methods of sampling (description of sampling techniques)

Animals at slaughter (herd based approach)

Tonsil swabs shall be taken from three(3) randomly selected pigs immediately after slaughter. A dry swab shall be placed against the tonsil wall, pressing the thumb and the index finger against the soft palate and rotating the swab by 360 degrees. The swab shall be placed in a dry test tube.
Samples must be delivered to the laboratory in the shortest possible time, as a rule, immediately after sampling (on the same day)or within 24 hours after sampling. In exceptional cases (holidays, weekend), the samples can be delivered to the laboratory within 80 hours after sampling. The laboratory must start with the investigation within 24 hours after receiving the material. If samples are delivered to the laboratory within 72 to 80 hours after sampling, samples must be tested immediately after the receipt. In the period from the sampling to the beginning of the analysis, the sampled material must be stored in a cold place, at the temperature of 4oC(+/-2oC) and may not be exposed to light.

Case definition

Animals at slaughter (herd based approach)

Isolation of agent from pooled sample of three (3) tonsile swabs (using enrichment metod).

Diagnostic/analytical methods used

Animals at slaughter (herd based approach)

Bacteriological method: Modified ISO 10273:2003

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, 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.
In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GAP, GHP and record keeping.

Control program/mechanisms

The control program/strategies in place

The control mechanisms envisages inter alia as follows:
- registration or approval of holdings, establishments, transporters, collection centres and dealers, who are subjected to veterinary control,
- identified and registrated animals,
- regular official veterinary checks on holdings,
- movements of animals accompanied by prescribed documents,
- veterinary referral form to accompany sick animals and animals coming from holdings with an unverified or suspect epizootiological situation.

Notification system in place

Regional Offices must report to VARS Main Office on a monthly basis regarding the monitoring programme implementation.
On monthly basis the laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

Results of the investigation

In 2009, the tonsile swabs from 131 slaughter batches were taken at slaughter establishments. Yersinia enerocolitica was detected in 26 samples/slaughter batches(19,8%).
In 2010, monitoring of Yersinia enterocolitica in pigs was not performed.

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

Compared the results from 2008 (19,3% positive samples) and 2009 (19,8% positive samples), the percentage of positive tonsil swab samples remains almost the same.

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 33 /2006). 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. Trichinellosis is a rare zoonosis in humans.From 1990 to 2009 from 0 to 7 cases annually were recordered. In 2010 no cases were notofied.

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

Trichinellosis is a rare human disease in Slovenia. No cases were notified in 2004, 2005 and 2007, 2010; there was one case notified in 2006, 2008 and 2009.

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

Trichinellosis is a rare human zoonosis in Slovenia.

Recent actions taken to control the zoonoses

Control of meat of pigs, horses, game on trichinellosis; surveillance of human cases.

2.8.2 Trichinellosis in humans

A. Trichinellosis in humans

Reporting system in place for the human cases

According to Law on Communicable Diseases (Official Gazette 33/2006) human cases are reported by doctors and laboratories on daily basis to local institutes of public health. Local institutes of public health notify disease to National Institute of Public Health.

Case definition

According to definition of EC /ECDC from 2008.

Diagnostic/analytical methods used

Serological tests, ELISA and Westernblot; parasite cysts in bioptic specimen of skeletal muscle.

Notification system in place

Human cases are notifiable by National Law on Infectious Diseases (official Gazette number 33/2006). Medical doctors are obliged to notify cases on daily basis to local institutes of public health. Local institutes of public health notify disease to national Institute of Public Health. Notification since 1977.

History of the disease and/or infection in the country

Trichinellosis is a rare zoonosis in Slovenia. From 1990 to 2010 we received from 0 to 7 cases annually. No human cases were recorded in last years. In 2006 and 2008, 2009 one case was notified.
Most of sporadic cases in last 20 years were infected due to ingestion of imported meat.
In 1989 an outbreak was recorded. 39 people were infected. The source of infection was pork. in the same year there were also 5 sporadic cases.
Another outbreak occured in 1996, 7 people were infected. The source of infection was pork, imported from Croatia.
In 1992 42-years old man died from encephalitis due to T. spiralis.

Results of the investigation

Trichinellosis is a rare human disease in Slovenia.

Description of the positive cases detected during the reporting year

In 2009 one case was detected where infection was contracted abroad;
In 2010, no human cases were notified.

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

A rare human disease in Slovenia.

Relevance as zoonotic disease

In the moment not important as zoonotic disease.

Table Trichinella in humans - Species/serotype distribution

Species/serotype Distribution	Cases	Cases Inc.	Autochthon cases	Autochthon Inc.	Imported cases	Imported Inc.
Trichinella	0	0	0	0	0	0
Trichinella spp., unspecified	0	0	0	0	0	0

Table Trichinella in humans - Age distribution

Age distribution	Trichinella spp., unspecified		
	All	M	F
<1 year	0	0	0
1 to 4 years	0	0	0
5 to 14 years	0	0	0
15 to 24 years	0	0	0
25 to 44 years	0	0	0
45 to 64 years	0	0	0
65 years and older	0	0	0
Age unknown	0	0	0
Total :	0	0	0

2.8.3 Trichinella in animals

A. Trichinella in horses

Monitoring system

Sampling strategy

VARS

The presence of Trichinella in carcasess is monitored in the framework of mandatory post mortem examination of the animal in approved slaughterhouses.

In the slaughterhouse, systematic testing is carried out for Trichinella in all horse carcasses.

The epidemiological unit is the animal. Samples are taken by official veterinarian or official auxiliaries.

Frequency of the sampling

Examination of Trichinella is carried out on all horses slaughtered at the approved slaughterhouses.

Type of specimen taken

Fresh meat: preferable lingual or jaw muscle, otherwise diaphragm, abdominal muscle, front leg muscles or intercostal muscles (if aforementioned muscles are lacking).

Methods of sampling (description of sampling techniques)

In accordance with the Commission Regulation (EC) No 2075/ 2005 laying down specific rules on official controls for Trichinella in meat, as stipulated in:

- Annex III

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

Tests for Trichinella is carried out in the laboratories within approved slaughterhouses by official veterinarians or official auxiliaries and in designated laboratories according to Regulation of the European Parliament and of the Council (EC) No. 882/ 2004.

Methods used:

- Reference method of detection: Magnetic stirrer method for pooled sample digestion (Annex I, Chapter I of Reg.(EC)No.2075/2005).
- Trichinoscopic examination (Annex I, Chapter III of Reg.(EC)No.2075/2005).

In all laboratories within approved slaughterhouses reference method of detection is used.

Results of the investigation including the origin of the positive animals

In 2010, 1.772 horses were examined for trichinae. No case of trichinellosis in equidae was confirmed.

Control program/mechanisms

The control program/strategies 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.
In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GHP, and record keeping.
- mandatory testing of all slaughtered equide,
- registration or approval of holdings, establishments, transporters, collection centres and dealers, who are subjected to veterinary control,
- identified and registered animals,
- regular official veterinary checks on holdings,
- movements of animals accompanied by prescribed documents,
- veterinary referral form to accompany sick animals and animals coming from holdings with an unverified or suspect epizootiological situation,
- where the meat is intended for placing on the market it shall be ensured that the fresh horse meat, in case it has not been examined for trichinae, is subjected to freezing process,
- fresh horse meat intended for placing on the market as fresh meat shall be examined for trichinae,
- identification of foodstuffs placed on the market accompanied by prescribed documents,
- obligate informing between veterinary and health service in case of zoonoses occurrence in animals or humans,
- Measures for the detection, prevention and suppression of disease.

Measures in case of the positive findings or single cases

Meat of the trichinae-infested animals shall be assessed as unfit for human consumption.
Measures may be introduced after the public health service has notified the veterinary service of an onset of clinical signs of disease in humans. Depending on the nature of disease, or where necessary, VARS and public health service shall conduct the epidemiological and/or epizootiological investigations. Based on the investigation results, VARS may institute the required veterinary measures in animal husbandry, or other necessary measures.

Notification system in place

At the presence of a contagious disease, or signs giving rise to suspicion that an animal has fallen sick or died of a contagious disease, the animal keeper shall immediately notify thereof the veterinary organisation. A veterinary organisation shall within 24 hours notify of disease the relevant VARS Regional Office in cases only, where the diagnostic test results have confirmed the presence of disease. A report on the occurrence of such diseases shall be drawn up on a monthly basis, by day 10 in the month for the previous month, in the electronic form, via VARS Central Information System (CIS VURS-EPI).

At a suspected or confirmed presence of disease, the competent public health services shall be notified as well.

In case of detection of Trichinella in laboratories within approved slaughterhouses or designated laboratories according to Regulation of the European Parliament and of the Council (EC)No. 882/2004, official veterinarian or laboratories must enter the data into the CIS EPI application for reporting the disesase of animals.

In case of detection of Trichinella in the laboratories within veterinarian organisation with concession the organisation must immediately inform Regional office of VARS.

The Main Office of VARS collects the data from Regional Offices of VARS about confirmed cases of trichinelosis within the ante- and post-mortem examinations in slaughterhouses conducted by the official

veterinarians, and applies them in relation to the diagnoses of diseases communicable to man.

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

In Slovenia, no case of trichinellosis in equidae has been confirmed since testing of equide has been carried out.

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.

B. Trichinella in pigs

Monitoring system

Sampling strategy

General

VARS

The presence of Trichinella in carcasess of pigs is monitored in the framework of mandatory post mortem examination of the animal in approved slaughterhouses or on the tourist farms.
In the approved slaughterhouses, systematic testing is carried out for Trichinella in all pig carcasses.
Furthermore, pigs slaughtered on the tourist are tested for the presence of Trichinella in the framework of mandatory post mortem examination.
The epidemiological unit is the animal. Samples are taken by official veterinarian.

Frequency of the sampling

General

All porcine animals slaughtered are subjected to examination for Trichinella - either at approved slaughterhouses or at tourist farms. Only testing of pigs slaughtered on the holdings of origin for private domestic consumption is not mandatory.

Type of specimen taken

General

Fresh meat - diaphragm, jaw muscle, lingual muscle, abdominal muscle, front leg muscles, intercostal muscels or other muscles (if aforementioned muscles are lacking).
In case of trichinoscopic examination both diaphragm pillar are taken.

Methods of sampling (description of sampling techniques)

General

In accordance with the Commission Regulation (EC)No. 2075/2005 laying down specific rules on official controls for Trichinella in meat, as stipulated in:
- Annex I, Chapter I, Point 2

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

Tests for Trichinella is carried out in the laboratories within approved slaughterhouses by official veterinarians or official auxiliaries and in designated laboratories according to Regulation of the European Parliament and of the Council No. 882/2004.

Method used:
Reference method of detection: Magnetic stirrer method for pooled sample digestion (Annex I, Chapter I of Reg.(EC)No.2075/2005),

In all laboratories within approved slaughterhouses reference method of detection is used.

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.
In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GHP, and record keeping.

Control program/mechanisms

The control program/strategies in place

- Mandatory testing of all slaughtered pigs,
- Registration or approval of holdings, establishments, transporters, collection centres and dealers, who are subjected to veterinary control,
- Identified and registered animals,
- Regular official veterinary checks on holdings,
- Movements of animals accompanied by prescribed documents,
- Veterinary referral form to accompany sick animals and animals coming from holdings with an unverified or suspect epizootiological situation,
- 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. Bussines operator is obligated to assure the trichinoscopic axamination of the porcine meat,
- Where the meat is intended for placing on the market it shall be ensured that the fresh porcine, in case it has not been examined for trichinae, is subjected to freezing process,
- Fresh porcine meat intended for placing on the market as fresh meat shall be examined for trichinae,
- Identification of foodstuffs placed on the market accompanied by prescribed documents,
- Obligate informing between veterinary and health service in case of zoonoses occurrence in animals or humans,
- Measures for the detection, prevention and suppression of disease.

Measures in case of the positive findings or single cases

Meat of the trichinae-infested animals shall be assessed as unfit for human consumption.
Measures may be introduced after the public health service has notified the veterinary service of an onset of clinical signs of disease in humans. Depending on the nature of disease, or where necessary, VARS and public health service shall conduct the epidemiological and/or epizootiological investigations. Based on the investigation results, VARS may institute the required veterinary measures in animal husbandry, or other necessary measures.

Notification system in place

At the presence of a contagious disease, or signs giving rise to suspicion that an animal has fallen sick or

died of a contagious disease, the animal keeper shall immediately notify thereof the veterinary organisation. A veterinary organisation shall within 24 hours notify of disease the relevant VARS Regional Office in cases only, where the diagnostic test results have confirmed the presence of disease. A report on the occurrence of such diseases shall be drawn up on a monthly basis, by day 10 in the month for the previous month, in the electronic form, via VARS Central Information System (CIS VURS-EPI).

At a suspected or confirmed presence of disease, the competent public health services shall be notified as well.

In case of detection of Trichinella in laboratories within approved slaughterhouses or designated laboratories according to Regulation of the European Parliament and of the Council (EC)No. 882/2004, official veterinarian or laboratories must enter the data into the CIS EPI application for reporting the disesase of animals.

In case of detection of Trichinella in the laboratories within veterinarian organisation with concession the organisation must immediately inform Regional office of VARS.

The Main Office of VARS collects the data from Regional Offices of VARS about confirmed cases of trichinelosis within the ante- and post-mortem examinations in slaughterhouses and on tourist farms conducted by the official veterinarians, and applies them in relation to the diagnoses of diseases communicable to man.

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

In 2010, 290.863 pigs slaughtered in slaughterhouses and 391 pigs slaughtered on tourist farms were examined for trichinae. 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. Since 1989 Trichinella haven't been detected in pigs.

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 results of testing in pigs, the possibility of transmission of the disease to humans is negligible.

C. Trichinella spp., unspecified in animal - Wild animals

Monitoring system

Sampling strategy

VARS

The presence of Trichinella in carcasess is monitored in the framework of mandatory post mortem examination of the animal in game handling establishments or game collection centres.

Wild boars and other wild game susceptible for trichinella infection is tested for the presence of trichinella in the game handling establishments as part of mandatory post mortem examination.

Small quantities of wild game meat that the game collection centre supplies to local retailers which sell it directly to the final consumers is tested for trichinella in the collection centre as part of mandatory post mortem examination.

The game collection centre for wild game must ensure testing for Trichinella in wild game which are in small quantities supplied directly to the final consumer.

If farmed game is slaughtered in the slaughterhouse systematic testing for Trichinella is carried out in the framework of mandatory post mortem examination.

The epidemiological unit is the animal.

Samples are taken by official veterinarian if animals are tested as part of mandatory post mortem examination. In case when game collection centre supplies small quantities directly to the final consumer the samples are taken by the food bussines operators responsible for game collection centres.

Frequency of the sampling

Compulsory is the examination of wild boars and other farmed or wild game, which may be carriers of trichinae and the meat whereof is intended for public consumption.

Examination for Trichinella is mandatory in all wild boars or other farmed and wild game susceptible to trichinella infection delivered in the game handling establishment. Examination is also mandatory for wild game which are directly supplied to the final consumer or local retail which supply the meat directly to the final consumer.

Only testing of wild animals intended for private domestic consumption of hunters is not mandatory.

Type of specimen taken

Fresh meat: diaphragm, lingual muscle, jaw muscle, abdominal muscles, intercostal muscles or front leg muscles, as appropriate.

Methods of sampling (description of sampling techniques)

In accordance with the Commission Regulation (EC) No. 2075/2005 laying down specific rules on official controls for Trichinella in meat, as stipulated in:

- Annex I, Chapter III, Point 2
- Annex III

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

If samples are taken by official veterinarian examination for Trichinella is carried out in designated

laboratories according to Regulation of the European Parliament and of the Council (EC) No. 882/2004. In case samples are taken by the food bussines operators responsible for game collection centres (for game which is directly supplied to the final consumer or game intended for private domestic consuption of hunters) examination for Trichinella is carried out in laboratories within veterinary organisation with concesion or in designated laboratories according to Regulation of the European Parliament and of the Council (EC) No. 882/2004.

Method used:
Reference method of detection: Magnetic stirrer method for pooled sample digestion (Annex I, Chapter I of Reg.(EC) No.2075/2005),

Preventive measures in place

Persons, who are hunting wild animals for placing on the market for public consumption, shall have the required knowledge of wild animal pathology and of the production and processing of wild game meat after hunting so as to be able to conduct the on-the-spot preliminary examination of wild game.

Control program/mechanisms

The control program/strategies in place

Mandatory examination for Trichinella of all carcasses of wild and farmed game susceptible for trichinella infection which are intended for placing on the market for human consumption.
VARS shall conduct surveillance of possible contagious diseases occurring in particular hunting grounds. In case of detection of a contagious disease, measures depending on 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

In case of detection of Trichinella designated laboratories according to Regulation of the European Parliament and of the Council (EC) No. 882/2004 laboratories must enter the data on the positive result into the CIS EPI application for reporting the disesase of animals.
In case of detection of Trichinella in the laboratories within veterinarian organisation with concession the organisation must immediately (in 24 hours at the latest) inform Regional office of VARS.

VARS shall inform also the competent public health service of confirmed presence of the disease.

Results of the investigation including the origin of the positive animals

In 2010, 818 wild boars and 44 bears were examined for the presence of Trichinella.
One (1) case of trichinellosis in wild boar and one (1) case of trichinellosis in bear was confirmed.

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

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 one (1) wild boar, the same as in 2006, 2008 and 2009.
In 2005 and 2007, no positive cases were detected in wild game used for human consumption.

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 units positive for Trichinella	T. spiralis	Trichinella spp., unspecified	T. britovi
Bears	VARS	Animal	44	1	0	0	1
Pigs	VARS	Animal	291254	0			
Solipeds, domestic - horses	VARS	Animal	1722	0			
Wild boars	VARS	Animal	818	1	0	1	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 2010 0 to 9 human cases were notified annually.

Hydatid cysts are detected from time to time by the compulsory post-mortem examinations at slaughterhouses.

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

According to number of notifications a rare zoonosis. From 2005 to 2010 3 to 9 human cases were notified.

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

Infections are mostly imported.

2.9.2 Echinococcosis in humans

A. Echinococcus spp. in humans

Reporting system in place for the human cases

Human cases are notifiable by national Law on Infectious Diseases (Official Gazette 69/95, revised 33/2006). 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.

Case definition

According to definition of EC /ECDC from 2008.

Diagnostic/analytical methods used

Serology (ELISA etc);detection of Echinococcus nucleic acid in clin. specimen; ultrasonography,Rtg , CT, MRI , other.

Notification system in place

Human cases are notifiable by national Law on Infectious Diseases, Official Gazette 33/2006. 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.

History of the disease and/or infection in the country

According to notifications it is a rare disease in Slovenia. From 1990 to 2010 0 to 9 cases were notified annually.
Most of cases in last years were imported.

Animals
Hydatid cysts are detected from time to time by the compulsory ante- and post-mortem examinations at slaughterhouses.

Results of the investigation

From 2005 to 2010 there were 3 to 9 notifications yearly. Many cases were probably infected abroad.

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

A rare disease. Most infections are imported.

Relevance as zoonotic disease

Currently not important.

Table Echinococcus in humans - Species/serotype distribution

Species/serotype Distribution	Cases	Cases Inc.	Autochthon cases	Autochthon Inc.	Imported cases	Imported Inc.
Echinococcus	8	.39	8	.39	0	0
E. granulosus	0	0	0	0	0	0
E. multilocularis	0	0	0	0	0	0
Echinococcus spp., unspecified	8	0.39	8	0.39	0	0

Table Echinococcus in humans - Age distribution

Age distribution	E. granulosus			E. multilocularis			Echinococcus spp., unspecified		
	All	M	F	All	M	F	All	M	F
<1 year	0	0	0	0	0	0	0	0	0
1 to 4 years	0	0	0	0	0	0	0	0	0
5 to 14 years	0	0	0	0	0	0	1	1	0
15 to 24 years	0	0	0	0	0	0	0	0	0
25 to 44 years	0	0	0	0	0	0	3	0	3
45 to 64 years	0	0	0	0	0	0	2	2	0
65 years and older	0	0	0	0	0	0	2	1	1
Age unknown	0	0	0	0	0	0	0	0	0
Total :	0	0	0	0	0	0	8	4	4

2.9.3 Echinococcus in animals

A. E. granulosus in animal

Monitoring system

Sampling strategy

VARS

Monitored are all slaughter animals, farmed and wild game intended for human consumption.

Slaughter animals and farmed game were examined by the official veterinarians at slaughterhouses within the scope of the compulsory veterinary post-mortem examination.

Animals slaughtered on tourist farms (pigs, sheeps, goats, farmed game) were examined by the official veterynarians within the scope of the compulsory veterinary post mortem examination.

Post-mortem examination of wild game shall be conducted on the spot after killing by a qualified person, or by an official veterinarian in the wild game processing house or in wild game collecting centre in cases, where the non-eviscerated wild game carcasses are submitted to the establishment.

An animal constitutes an epidemiological unit.

Frequency of the sampling

Post-mortem examination of all animals and/or meat and organs upon slaughter or killing.

Type of specimen taken

Organs with hydatid cysts.

Methods of sampling (description of sampling techniques)

Visual examination of the slaughtered/killed animal and its organs, and palpation of the liver.

Case definition

Echinococcosis is the disease of pigs, small ruminants, bovines, equidae, and some wild game species, in which the presence of hydatid cysts in the liver, the lungs and some other organs is detected, and the causative agent is confirmed by laboratory testing.

Using laboratory microscopy specific structures in the hydatid cysts must be observed or the presence of characteristic antibodies must be determined by serology.

Diagnostic/analytical methods used

Macroscopic (visual) examination of organs and laboratory parasitological identification of the agent.

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.

Persons involved in hunting wild game for placing on the market for human consumption shall have sufficient knowledge in the field of wild game pathology and wild game meat processing so as to be in a position to conduct the preliminary inspection on the spot after killing. All the persons conducting wild game preliminary inspection after killing shall be qualified in compliance with the regulation governing the

method of training of hunters in the preliminary inspection of killed wild game.

In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GHP, and record keeping.
Systematic dehelminthisation of dogs along with anti-rabies vaccination.

Control program/mechanisms

The control program/strategies in place

- Registration or approval of holdings, establishments, transporters, collection centres and dealers, who are subjected to veterinary control
- Identified and registered animals,
- Regular official veterinary checks on holdings,
- Movements of animals accompanied by prescribed documents,
- Veterinary referral form to accompany sick animals and animals coming from holdings with an unverified or suspect epizootiological situation,
- Obligatory post-mortem examination after slaughtering/killing-visual, palpation,
- Holder of a tourist farm activity shall at least 48 hours prior to slaughtering 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,
- 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,
- Harmless disposal of organs with hydatid cysts,
- Measures for the detection, prevention and suppression of the disease,
- Measures at the onset of disease in humans.

Measures in case of the positive findings or single cases

Harmless disposal of organs with hydatid cysts.
Measures may be introduced after the public health service has notified the veterinary service of an onset of clinical signs of disease in humans. Depending on the nature of disease, or where necessary, VARS and public health service shall conduct the epidemiological and/or epizootiological investigations. Based on the investigation results, VARS may institute the required veterinary measures in animal husbandry, or other necessary measures.

Notification system in place

At the presence of a contagious disease, or signs giving rise to suspicion that an animal has fallen sick or died of a contagious disease, the animal keeper shall immediately notify thereof the veterinary organisation. A veterinary organisation shall notify of disease the relevant VARS Regional Office in cases only, where the diagnostic test results have confirmed the presence of disease. A report on the occurrence of such diseases shall be drawn up on a monthly basis, by day 10 in the month for the previous month, in the electronic form, via VARS Central Information System (CIS VURS-EPI). At a suspected or confirmed presence of disease, the competent public health services shall be notified as well.

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

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.

Results of the investigation

1. AT SLAUGHTERHOUSE

In 2010, Echinococcus granulosus was detected in bovine animals in 5 cases (0,004%) out of 124.923 bovine animals examined, and in porcine animals in 5 cases (0,001%) out of 291.120 porcine animals examined.

No E. granulosus was detected in the slaughtered small ruminants (out of 10.239 examined) neither in slaughtered horses (out of 1.772 examined).

2. ON TOURIST FARM

On tourist farms were in 2010, 412 animals slaughtered: 391 porcine animals (8 piglets, 383 fattening pigs), 18 sheep, two (2) roe deers and one (1) fallow deer. Echinococcus granulosus was detected in the scope of compulsory veterinary post mortem examination by official veterinarian in two (2) sheep.

3. AT GAME COLLECTION CENTRE

E. granulosus was not detected in any of the wild animals, whose internal organs were inspected by official veterinarians in the wild game collection centres.

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

In 2010, the percentage of cases of E. granulosus in bovine animals slightly increased. In porcine animals the percentage of positive cases decreased from 0,002% in 2009 to 0,001% in 2010. The percentage of positive cases of E. granulosus in animals remains relatively low and therefore, the situation is assessed as favourable.

Table Echinococcus in animals

	Source of information	Sampling unit	Region	Units tested	Total units positive for Echinococcus	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Cattle (bovine animals) - at slaughterhouse - Control and eradication programmes - official sampling	VARS	Animal	Slovenija	124923	5	5	0	0
Pigs - at slaughterhouse - Control and eradication programmes - official sampling	VARS	Animal	Slovenija	291120	5	5	0	0
Pigs - mixed herds - at farm - Control and eradication programmes - official sampling [1)]	VARS	Animal	Slovenija	391	0			
Reindeers - farmed - at farm - Control and eradication programmes - official sampling [2)]	VARS	Animal	Slovenija	3	0			
Sheep - at farm - Control and eradication programmes - official sampling [3)]	VARS	Animal	Slovenija	18	0			
Sheep and goats - at slaughterhouse - Control and eradication programmes - official sampling	VARS	Animal	Slovenija	10239	0			
Solipeds, domestic - horses - at slaughterhouse - Control and eradication programmes - official sampling	VARS	Animal	Slovenija	1772	0			

Comments:

[1)] at tourist farm

[2)] at tourist farm

[3)] at tourist farm

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

From 1990 to 2010 we received from 9 to 34 notifications of human disease annualy.

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

In 2010 there were recorded 10 notifications of human disease.

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

-

Recent actions taken to control the zoonoses

Notification system, screening of pregnant women on routine basis.

2.10.2 Toxoplasmosis in humans

A. Toxoplasmosis in humans

Reporting system in place for the human cases

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.

Case definition

According to EC /ECDC from 2008.

Diagnostic/analytical methods used

Toxoplasma is identified in laboratory of Medical Faculty in Ljubljana, in Laboratory of Institute for Transfusion medicine and in some laboratories in Institutes of Public Health.

Methods used are:
Serology: detection of IgG, IgM, IgA with EIA (Abott);
avidity of Ig (Biorat Platelia);
isolation;
PCR.

Notification system in place

Human cases are notifiable by national Law on Infectious Diseases (Official Gazette 69/95, revised 33/2006). 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.

History of the disease and/or infection in the country

From 1990 to 2010 from 9 to 38 human cases were reported.

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

Toxoplasmosis is according to notifications a rare zoonosis in Slovenia.

Relevance as zoonotic disease

Important for some population groups- on example pregnant women. Screening during pregnancy is obligatory according to Law and is implemented routinely.

Table Toxoplasma in humans - Species/serotype distribution

Species/serotype Distribution	Cases	Cases Inc.
Toxoplasma	17	.83
Toxoplasma spp., unspecified	17	0.83
Congenital cases	0	0

Table Toxoplasma in humans - Age distribution

Age distribution	Toxoplasma spp., unspecified		
	All	M	F
<1 year	0	0	0
1 to 4 years	0	0	0
5 to 14 years	2	1	1
15 to 24 years	4	2	2
25 to 44 years	8	3	5
45 to 64 years	3	1	2
65 years and older	0	0	0
Age unknown	0	0	0
Total :	17	7	10

2.11 RABIES

2.11.1 General evaluation of the national situation

A. Rabies general evaluation

History of the disease and/or infection in the country

From 1946 to 1950 13 human rabies cases-deaths were recorded. Since 1950 no human cases have been notified in Slovenia.

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 T bingen 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 perfomed 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 few per year recently. All cases were detected near the border with Croatia.

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

No human cases were recorded after 1950.
In 2004, only two(2) positive animals (foxes) were detected. Both cases were on the SE border.
In 2005, two(2) 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 carried out. With emergency vaccination we tried to avoid the spread of the disease outside the vaccination area.
The third case was detected in May in municipality Ilirska Bistrica on the border region with Croatia.
In 2006, 1.896 (1.645 foxes) animals were tested on rabies. Two(2) rabid foxes were detected near the border with Croatia.
In 2007, 2.075 animals were subjected to tests, whereof three 3 animals (all foxes) tested positive for rabies.
Due to the immense infection presure from neighbouring country, the number of rabies cases in 2008

increased to 55 (51 foxes, 2 badgers, 1 horse, 1 dog).
In 2009, 2.809 animals were subjected to tests, whereof 1 cattle and 33 foxes were tested positive for rabies.
In 2010, 2.590 animals were tested and 16 (15 foxes and 1 cattle) were positive. All cases in recent years have been detected near the border with Croatia.

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.
There is possibility of importation of human cases from endemic countries in spite of fact, that preexposure vaccination is available for foreign travellers.

Recent actions taken to control the zoonoses

Ongoing oral vaccination of foxes twice yearly, monitoring of animals, vaccination of animals and people.

2.11.2 Rabies in humans

A. Rabies in humans

Reporting system in place for the human cases

Rabies cases are notifiable by national Law on Infectious Diseases (Offical Gazette 33/2006). 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 National Institute of Public Health.
No human cases in Slovenia since 1950.

Case definition

According to definition EC /ECDC from 2008.

Diagnostic/analytical methods used

Virologic laboratory of Veterinary Faculty in Ljubljana uses methods:
- serology (neutralisation test);
- isolation on cell cultures, also mice neuroblasts;
- direct imunofluorescent test, imunohistochemistry RT-PCR.

Notification system in place

Rabies cases are notifiable by national Law on Infectious Diseases, Official Gazette 33/2006.
(Official Gazette 69/95, revised 33/2006). 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 second World War.

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.
From 1973 to 1988 rabies spread among wild animals in all regions of Slovenia. In 1988 vaccination campaign of wild animals started and continued in 1995 and last years.

Results of the investigation

Epizootic situation improved since the start of vaccination of wild animals.

National evaluation of the recent situation, the trends and sources 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).

Relevance as zoonotic disease

In Slovenia postexposure prophylaxis of injured persons after bite or injury, caused by unknown wild or domestic animal, is defined by law.
Preexposure prophylaxis is obligatory by law as well for persons, potentially exposed to infection during work or school time.

Preexposure prophylaxis is also available for foreign travellers.
Surveillance of epizootic situation goes on.

2.11.3 Lyssavirus (rabies) in animals

A. Rabies in dogs

Monitoring system

Methods of sampling (description of sampling techniques)

In case of suspicion of disease and if animal dies due to condition which involves signs of neurological disease, head or whole body must be sent for testing. Samples are sent to National veterinary institute by veterinarian organisation.

For the purposes of rabies confirmation, the direct Immunofluorescence Test (FAT), virus isolation and determination of virus isolates are used.

Diagnostic/analytical methods used

FAT, virus isolation and determination of virus isolates.

Vaccination policy

Compulsorily vaccination of all dogs older than 3 months and re-vaccination every 12 month with inactivated vaccines.

Control program/mechanisms

The control program/strategies in place

- identification and registration of dogs
- compulsory vaccination of dogs
- measures in case of suspicion of disease

Notification system in place

According to Rules on animal disease the notification of disease is mandatory. In case of a suspected presence of disease, all the necessary steps shall immediately be taken in order to confirm the presence of disease, or to reverse the suspicion thereof. Veterinary administration of the RS officially confirm the presence of disease.

When the presence of a rabies is suspected the veterinary organisation shall immediately inform the Regional Office of the VARS of the suspected disease.

The designated laboratory shall immediately inform the Regional Office of the VARS on the results of diagnostic test by telephone and by fax or via email.

The designates laboratory must report the results of diagnostic test via computer database CIS VURS EPI.

In the case of a zoonosis, the official veterinarian shall notify of the suspected presence of disease also the competent public health services.

Results of the investigation

In 2010, 130 dogs were tested. None was positive.

Additional information

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.

Table Rabies in animals

	Source of information	Sampling unit	Region	Units tested	Total units positive for Lyssavirus (rabies)	Lyssavirus, unspecified	Classical rabies virus (genotype 1)	European Bat Lyssavirus - unspecified
Badgers - wild	VARS	Animal	Slovenija	68	0	0	0	0
Bats - wild	VARS	Animal	Slovenija	1	0	0	0	0
Cats	VARS	Animal	Slovenija	68	0	0	0	0
Cattle (bovine animals)	VARS	Animal	Slovenija	19	1	0	1	0
Deer - wild - roe deer	VARS	Animal	Slovenija	24	0	0	0	0
Dogs	VARS	Animal	Slovenija	46	0	0	0	0
Foxes - wild	VARS	Animal	Slovenija	2276	15	0	15	0
Goats	VARS	Animal	Slovenija	5	0	0	0	0
Marten - wild	VARS	Animal	Slovenija	39	0	0	0	0
Pigs	VARS	Animal	Slovenija	1	0	0	0	0
Sheep	VARS	Animal	Slovenija	18	0	0	0	0
Solipeds, domestic	VARS	Animal	Slovenija	2	0	0	0	0
Wolves - wild	VARS	Animal	Slovenija	10	0	0	0	0
Polecats - wild	VARS	Animal	Slovenija	3	0	0	0	0
Rabbits - wild	VARS	Animal	Slovenija	1	0	0	0	0
Rats - wild	VARS	Animal	Slovenija	4	0	0	0	0
Squirrels - wild	VARS	Animal	Slovenija	4	0	0	0	0
Weasel	VARS	Animal	Slovenija	1	0	0	0	0

Table Rabies in animals

Footnote:

Monitoring of Lyssaviruses in bat population in Slovenia has been performed since 2008.
In 2010, 203 specimens were tested for presence of Lyssaviruses. All tests were negative.

2.12 STAPHYLOCOCCUS INFECTION

2.12.1 General evaluation of the national situation

2.13 Q-FEVER

2.13.1 General evaluation of the national situation

A. Coxiella burnetii (Q-fever) general evaluation

History of the disease and/or infection in the country

Q fever was a frequent human zoonosis after second world war. In last 20 years it was notified rarely in Slovenia.
In 2007 a group of veterinary students and two teachers and a group of high veterinary school students contracted a laboratory-confirmed Q fever infection during a training course on a sheep farm in Slovenia in March 2007. From 144 serologically tested, 83 (87,1%) were positive.

Another small family outbreak of Q fever was detected in 2007 between members of a family, who were visiting and working on a farm in Istra, northern Croatia.

In 2008 and 2009 no human cases were notified.
In 2010 one (1) human case was reported (most probably imported).

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

Usually rare human diseases in Slovenia. Source of infection: mostly sheep.

Recent actions taken to control the zoonoses

Monitoring of Q fever in animals.

The following amendments were made:

Date of Modification	Row name	Old value	New value
2011-11-09	History of the disease and/or infection in the country	Q fever was a frequent human zoonosis after second world war. In last 20 years it was notified rarely in Slovenia. In 2007 a group of veterinary students and two teachers and a group of high veterinary school students contracted a laboratory-confirmed Q fever infection during a training course on a sheep farm in Slovenia in March 2007. From 144 serologically tested, 83 (87,1%) were positive. Another small family outbreak of Q fever was detected in 2007 between members of a family, who were visiting and working on a farm in Istra, northern Croatia. In 2008 and 2009 no human cases were notified. In 2010 one human case was reported (most probably imported).	Q fever was a frequent human zoonosis after second world war. In last 20 years it was notified rarely in Slovenia. In 2007 a group of veterinary students and two teachers and a group of high veterinary school students contracted a laboratory-confirmed Q fever infection during a training course on a sheep farm in Slovenia in March 2007. From 144 serologically tested, 83 (87,1%) were positive. Another small family outbreak of Q fever was detected in 2007 between members of a family, who were visiting and working on a farm in Istra, northern Croatia. In 2008 and 2009 no human cases were notified. In 2010 one (1) human case was reported (most probably imported).
	History of the disease and/or infection in the country	Q fever was a frequent human zoonosis after second world war. In last 20 years it was notified rarely in Slovenia. In 2007 a group of veterinary students and two teachers and a group of high veterinary school students contracted a laboratory-confirmed Q fever infection during a training course on a sheep farm in Slovenia in March 2007. From 144 serologically tested, 83 (87,1%) were positive. Another small family outbreak of Q fever was detected in 2007 between members of a family, who were visiting and working on a farm in Istra, northern Croatia. In 2008, 2009 and 2010 no human cases were notified.	Q fever was a frequent human zoonosis after second world war. In last 20 years it was notified rarely in Slovenia. In 2007 a group of veterinary students and two teachers and a group of high veterinary school students contracted a laboratory-confirmed Q fever infection during a training course on a sheep farm in Slovenia in March 2007. From 144 serologically tested, 83 (87,1%) were positive. Another small family outbreak of Q fever was detected in 2007 between members of a family, who were visiting and working on a farm in Istra, northern Croatia. In 2008 and 2009 no human cases were notified. In 2010 one human case was reported (most probably imported).

2.13.2 Q-fever in humans

A. C. burnetii in humans

Reporting system in place for the human cases

Human cases are notifiable by national Law on Infectious Diseases (Official Gazette number 69/95, revised 33/2006).
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.

Case definition

According to ECDC definition from 2008.

Diagnostic/analytical methods used

Indirect immunofluorescence (test FOCUS diagnostics) for the presence of IgG and IgM antibodies to C. burnetii phase I and II antigens, detection of nucleic acid of C. burnettii in clinical specimen, other.

Notification system in place

Human cases are notifiable by national Law on Infectious Diseases (Official Gazette number 69/95, revised 33/2006).
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.

History of the disease and/or infection in the country

Q fever was a frequent zoonosis after second world war. In last 20 years it was notified rarely in Slovenia. In 2007 a group of veterinary students and teachers and a group of high veterinary school students contracted a laboratory-confirmed Q fever infection during a training course on a sheep farm in Slovenia in March 2007. From 144 serologically tested, 83 (87,1%) were positive.

Another small family outbreak of Q fever was detected in 2007 between members of a family, who were visiting and working on a farm in Istra, northern Croatia.

In years 2008 and 2009 no cases in humans were recordered.

Results of the investigation

In 2010 one (1) case was reported (most probably imported).

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

Recent epidemiological situation is stable, animals are regularly monitored on Q fever.

Relevance as zoonotic disease

Q fever was a rare zoonosis in last years, except in 2007.
In 2008 and 2009 no human cases were recordered.

The following amendments were made:

Date of Modification	Row name	Old value	New value
2011-11-09	Results of the investigation	From 2008 to 2010 no human cases were recordered.	In 2010 one (1) case was reported (most probably imported).
	History of the disease and/or infection in the country	Q fever was a frequent zoonosis after second world war. In last 20 years it was notified rarely in Slovenia. In 2007 a group of veterinary students and teachers and a group of high veterinary school students contracted a laboratory-confirmed Q fever infection during a training course on a sheep farm in Slovenia in March 2007. From 144 serologically tested, 83 (87,1%) were positive. Another small family outbreak of Q fever was detected in 2007 between members of a family, who were visiting and working on a farm in Istra, northern Croatia. From 2008 to 2010 no cases were recordered.	Q fever was a frequent zoonosis after second world war. In last 20 years it was notified rarely in Slovenia. In 2007 a group of veterinary students and teachers and a group of high veterinary school students contracted a laboratory-confirmed Q fever infection during a training course on a sheep farm in Slovenia in March 2007. From 144 serologically tested, 83 (87,1%) were positive. Another small family outbreak of Q fever was detected in 2007 between members of a family, who were visiting and working on a farm in Istra, northern Croatia. In years 2008 and 2009 no cases in humans were recordered.

2.13.3 Coxiella (Q-fever) in animals

A. C. burnetii in animal

Monitoring system

Sampling strategy

In 2010, active monitoring in bovine animals and small ruminants was not performed.

Frequency of the sampling

Serological testing of breeding animals and animals with clinical signs.

Type of specimen taken

Blood

Methods of sampling (description of sampling techniques)

Blood samples shall be taken aseptically by venepunction. Blood shall be taken from the jugular vein or median caudal vein, and decanted into sterile test tubes. After sampling, the test tubes intended for obtaining the serum shall be kept at room temperature. On finished coagulation, the test tubes shall be refrigerated at +4 C. Blood samples shall be kept chilled during transport (cooling container) and delivered to the testing laboratory within 48 hours of sampling.

Case definition

Identification of IgG antibodies against Coxiella burnetii.

Diagnostic/analytical methods used

Serology: OIE Manual, 5th ed., 2004
ELISA for antibody detection.

Other preventive measures than vaccination in place

Persons, who are 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. In accordance with legislation, the business operator shall provide for conditions of hygiene in primary production - GAP, GHP, and record keeping.

Control program/mechanisms

The control program/strategies in place

- Registration and/or approval of holdings, establishments, transporters, collection centres and dealers, who are subjected to veterinary checks;
- Identified and registrated animals;
- Regular official veterinary checks on holdings;
- Movements of animals accompanied by prescribed documents;
- Veterinary referral form to accompany sick animals and animals coming from holdings with an unverified or suspect epizootiological situation;
- Obligatory notification between veterinary and health service in case of zoonoses occurance.

Measures in case of the positive findings or single cases

Measures may be introduced after the public health service has notified the veterinary service of an onset of clinical signs of disease in humans. Depending on the nature of disease, or where necessary, VARS and public health service shall conduct the epidemiological and/or epizootiological investigations. Based

on the investigation results, VARS may institute one or more following measures in animal husbandry:
- providing for potable water that is fit for consumption, water for watering, and feed,
- providing for and maintaining the required conditions of hygiene in animal accommodation facilities, and in other premises and installations intended for keeping animals,
- providing for hygiene at parturition and during milking,
- providing for veterinary order in public places intended for animal assembly, in the means of transport intended for the transport of animals, products, raw materials, foodstuffs, waste, and animal feed, in pens, on pastures and in facilities intended for animal assembly, animal slaughter, and for collecting, treating, processing and storing raw materials, products, foodstuffs, waste, and animal feed,
- providing for food safety and for compliance with the veterinary conditions for their production and circulation,
- preventing the introduction of disease agents into animal accommodation facilities,
- implementing veterinary measures in animal accommodation facilities,
- handling dead animal carcasses and other waste, waste waters, animal faeces, and urine in compliance with the required methods,
- providing for preventive disinfection, disinsectisation and deratisation in facilities, on public surfaces and in the means of transport,
- other recovery measures.

Notification system in place

At the presence of a contagious disease, or signs giving rise to suspicion that an animal has fallen sick or died of a contagious disease, the animal keeper shall immediately notify thereof the veterinary organisation. A veterinary organisation shall notify of disease the relevant VARS Regional Office in cases only, where the diagnostic test results have confirmed the presence of disease. A report on the occurrence of such diseases shall be drawn up on a monthly basis, by day 10 in the month for the previous month, in the electronic form, via VARS Central Information System (CIS VURS-EPI). At a suspected or confirmed presence of disease, the competent public health services shall be notified as well.

Results of the investigation

In 2010, IgG antibodies against Coxiella burnetii were identified in three rams.

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1 ESCHERICHIA COLI, NON-PATHOGENIC

3.1.1 General evaluation of the national situation

A. Escherichia coli general evaluation

History of the disease and/or infection in the country

According to Law on infectious diseases (Official Gazette 69/95) all E.coli infections are notifiable. Doctors and laboratories are obliged to notify them in three days after diagnosis. Most notified E.coli human cases are probable pathogenic.

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

The number of all notified E.coli infections in 2009 was 157 in 2010 139. No outbreaks were detected in 2009 and 2010.

Recent actions taken to control the zoonoses

Improvement of diagnostics of human E.coli cases (specially VTEC) and HUS.

3.1.2 Escherichia coli, non-pathogenic in foodstuffs

A. E. coli in food

Monitoring system

Sampling strategy

HIRS

Monitoring (catering)

Annual monitoring programme was prepared with respect to the risk analysis and results of programme/controls carried out in the previous year.

Samples were taken at retail level (catering) and it was carried out by the health inspectors.

Programme:

- precut RTE fruits and vegetables: 100 samples/year;
- unpasteurised fruit and vegetable juices (RTE): 25 samples/year;
- RTE cakes, deserts and pastry: 100 samples/year;
- RTE deli dishes (salads, sliced cooked meat products and sausages, sauces etc.): 200 samples/year.

Frequency of the sampling

HIRS

Sampling was distributed evenly throughout the months: March - October.

Methods of sampling (description of sampling techniques)

HIRS

Sampling plan (n = number of units comprising the sample):

- precut RTE fruits and vegetables: n=1
- unpasteurised fruit and vegetable juices (RTE): n=1
- RTE cakes, deserts and pastry: n=1
- RTE deli dishes (salads, sliced cooked meat products and sausages, sauces etc.): n=1

A sample weighing 300-500 g was taken by sterile instrument and stored in a sterile bag or other sterile container. Samples had to be delivered to the laboratory in the shortest time possible. The period of time elapsing from sampling to analysis shall by no means exceed 24 hours. The temperature during storage and transport should not exceed + 4°C.

Definition of positive finding

A sample in which non-patogenic Escherichia coli (> 100 cfu/g) was detected.

Diagnostic/analytical methods used

Bacteriological method: ISO 16649-2:2001

Preventive measures in place

GMP, GHP, HACCP

Control program/mechanisms

The control program/strategies in place

Registration of establishments and official control.

Measures in case of the positive findings or single cases

Informing the owner of the sample, food hygiene inspection and necessary enforcement action.

Results of the investigation

HIRS

Monitoring (catering)

Out of 425 samples taken in 2010, non-patogenic Escherichia coli (> 100 cfu/g) was detected in 2 samples of RTE deli dishes (ready-to-eat salads).

Out of all 425 samples taken, 0,5% samples were positive on presence of non-patogenic Escherichia coli (> 100 cfu/g).

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

HIRS

The percentage of samples contaminated with non-patogenic Escherichia coli (> 100 cfu/g) was the same as in 2009, although the number of the samples taken was much lover than in 2009 (1210 samples). Situation concerning non-patogenic Escherichia coli is favourable.

3.1.3 Antimicrobial resistance in Escherichia coli, non-pathogenic

A. Antimicrobial resistance of E.coli in food

Sampling strategy used in monitoring

Frequency of the sampling

VARS

Isolates were obtained within annual monitoring programme.

Type of specimen taken

Isolates were obtained within annual monitoring programme. Meat samples from different animal species were taken.

Strains of E. coli were taken for antimicrobial susceptibility testing: 26 from cattle, 47 from pigs, and 32 from turkeys.

Methods of sampling (description of sampling techniques)

See relevant monitoring program.

Procedures for the selection of isolates for antimicrobial testing

Random selection from different monitoring samples.

Methods used for collecting data

VARS

Isolats were tested and reported at NVI.

Laboratory methodology used for identification of the microbial isolates

Bacteriological method: ISO 16649-2:2001

Disc diffusion test according to CLSI.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Aminoglycosides: Streptomycin, Gentamycin, Kanamycin.

Amphenicols: Chloramphenicol.

Beta-lactamic: Ampicillin, Amoxycillin/Clavulanic acid.

Cephalosporins: Cefotaxime, Cephalothin, Cefpodoxime, Ceftazidim.

Fluoroquinolones: Ciprofloxacin, Enrofloxacin.

Quinolones: Nalidixic acid.

Sulfonamides: Sulfonamide.

Trimethoprim.

Trimethoprim/sulfonamides.

Tetracyclines: Tetracycline.

Cut-off values used in testing

Agar Diffusions method according to CLSI (Clinical Laboratory Standard Institute).

Control program/mechanisms

Recent actions taken to control the zoonoses

Introduced monitoring.

Notification system in place

VARS

Delegated laboratory yearly reports the results of testing into the zoonosis web application.

Results of the investigation

VARS

Among 26 strains from cattle 80,8% were fully sensitive. Only five (5) strains were resistant - one (1) to one antimicrobial, 2 to 2 antimicrobials and 2 to 3 antimicrobials. The highest was resistance to Tetracyclin (5 strains) and Streptomycin (4 strains) and only 2 strains to Sulfonamide.
Among 47 strains from pigs 20 (42.6%) were fully sensitive. Eleven (23.4) strains were resistent to more than 4 antimicrobials. The highest was resistance to Tetracyclin (40.4%) , Streptomycin (36.2%), Sulfonamides (27.7%) and Trimethoprim, Trimethoprim + Sulphonamide, Ampicillin (25.5%).
Among 32 strains from turkeys only 5 (15.6%) were fully sensitive and 7 (21.9%) were resistant to more than four antimicrobials. The highest was resistance to Nalidixic acid (62.5%), Tetracycline (43.8%), Ampicillin (37.5%) and Cephalothin (25.0%). No resistance was found only to 3rd generation of Cephalosporins.

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

VARS

High resistance of E. coli strains from pigs, cattle and turkeys presents a considerable risk for transmision of resistant genes from non-pathogenic to pathogenic strains of E. coli or even other species.

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

VARS

The high antimicrobial resistance of E. coli strains indicates the use of antimicrobials in food producing animals. Special care should be taken to use antimicrobials prudently and in accordance with principles of their rational use. When possible the use of antimicrobials shoud be avoided and other measures to control bacterial infectious diseases like vaccinations and sanitary measures should be taken. This is the only way to prevent the transmission of resistant genes into pathogenic bacteria and their spread into human population.

Table Antimicrobial susceptibility testing of E. coli in Meat from bovine animals

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	26	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	26	0
Fluoroquinolones - Ciprofloxacin	26	0
Fluoroquinolones - Enrofloxacin	26	0
Quinolones - Nalidixic acid	26	0
Trimethoprim	26	0
Sulphonamides - Sulfonamide	26	2
Aminoglycosides - Streptomycin	26	4
Aminoglycosides - Gentamicin	26	0
Aminoglycosides - Kanamycin	26	0
Trimethoprim + Sulphonamides	26	0
Penicillins - Ampicillin	26	0
Tetracyclines - Tetracycline	26	5
Fully sensitive	26	21
Resistant to 1 antimicrobial	26	1
Resistant to 2 antimicrobials	26	2
Resistant to 3 antimicrobials	26	2
Cephalosporins - Cefotaxim	26	0
Cephalosporins - Cefpodoxime	26	0
Cephalosporins - Ceftazidim	26	0

Table Antimicrobial susceptibility testing of E. coli in Meat from bovine animals

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	26	
Antimicrobials:	N	n
Cephalosporins - Cephalothin	26	0
Penicillins - Amoxicillin / Clavulanic acid	26	0

Table Antimicrobial susceptibility testing of E. coli in Meat from pig

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	47	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	47	3
Fluoroquinolones - Ciprofloxacin	47	0
Fluoroquinolones - Enrofloxacin	47	0
Quinolones - Nalidixic acid	47	0
Trimethoprim	47	12
Sulphonamides - Sulfonamide	47	13
Aminoglycosides - Streptomycin	47	17
Aminoglycosides - Gentamicin	47	1
Aminoglycosides - Kanamycin	47	3
Trimethoprim + Sulphonamides	47	12
Penicillins - Ampicillin	47	12
Tetracyclines - Tetracycline	47	19
Fully sensitive	47	20
Resistant to 1 antimicrobial	47	8
Resistant to 2 antimicrobials	47	3
Resistant to 3 antimicrobials	47	2
Resistant to 4 antimicrobials	47	3
Resistant to >4 antimicrobials	47	11
Cephalosporins - Cefotaxim	47	1

Table Antimicrobial susceptibility testing of E. coli in Meat from pig

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	47	
Antimicrobials:	N	n
Cephalosporins - Cefpodoxime	47	1
Cephalosporins - Ceftazidim	47	0
Cephalosporins - Cephalothin	47	5
Penicillins - Amoxicillin / Clavulanic acid	47	0

Footnote:

One strain, which was resistant to Cephalosporins, was ESBL resistant. If Streptomycin is considered resistance indicator for Aminoglycosides 17 strains are resistant to Gentamicin and Kanamycin compared to 1 and 3 respectively. To Cephalotine, which belongs to the 1st generation of Cephalosporins, 5 strains are resistant, but only the ESBL strain is resistant to Cephalosporins of the 3rd generation.

Table Antimicrobial susceptibility testing of E. coli in Meat from other poultry species

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	32	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	32	3
Fluoroquinolones - Ciprofloxacin	32	8
Fluoroquinolones - Enrofloxacin	32	9
Quinolones - Nalidixic acid	32	20
Trimethoprim	32	5
Sulphonamides - Sulfonamide	32	7
Aminoglycosides - Streptomycin	32	7
Aminoglycosides - Gentamicin	32	1
Aminoglycosides - Kanamycin	32	2
Trimethoprim + Sulphonamides	32	4
Penicillins - Ampicillin	32	12
Tetracyclines - Tetracycline	32	14
Fully sensitive	32	5
Resistant to 1 antimicrobial	32	5
Resistant to 2 antimicrobials	32	6
Resistant to 3 antimicrobials	32	4
Resistant to 4 antimicrobials	32	5
Resistant to >4 antimicrobials	32	7
Cephalosporins - Cefotaxim	32	0

Table Antimicrobial susceptibility testing of E. coli in Meat from other poultry species

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	32	
Antimicrobials:	N	n
Cephalosporins - Cefpodoxime	32	0
Cephalosporins - Ceftazidim	32	0
Cephalosporins - Cephalothin	32	8
Penicillins - Amoxicillin / Clavulanic acid	32	2

Footnote:

Only E. coli from turkey meat were tested. If we consider Nalidixic acid as resistance indicator for Quinolones there are 20 strains resistant to Ciprofloxacin and Enrofloxacin compared to 8 and 9 respectively. If Streptomycin is considered resistance indicator for Aminoglycosides, 7 strains are resistant to Gentamicin and Kanamycin compared to 1 and 2 respectively. To Cephalothine, which belongs to the 1st generation of Cephalosporins, 8 strains are resistant, but none to the Cephalosporins of the 3rd generation.

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing
Disc diffusion	NCCLS/CLSI

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol			12
Tetracyclines	Tetracycline			11
Fluoroquinolones	Ciprofloxacin			15
	Enrofloxacin			16
Quinolones	Nalidixic acid			13
Trimethoprim	Trimethoprim			10
Sulphonamides	Sulfonamide			12
Aminoglycosides	Streptomycin			11
	Gentamicin			12
	Kanamycin			13
Trimethoprim + Sulphonamides	Trimethoprim + Sulphonamides			10
Cephalosporins	Cefotaxim			14
	Cefpodoxime			17

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

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Cephalosporins	Ceftazidim			17
	Cephalothin			14
Penicillins	Ampicillin			13
	Amoxicillin / Clavulanic acid			13

3.2 ENTEROCOCCUS, NON-PATHOGENIC

3.2.1 General evaluation of the national situation

3.2.2 Antimicrobial resistance in Enterococcus, non-pathogenic isolates

Table Cut-off values for antibiotic resistance of E. faecalis in Animals

Test Method Used	Standard methods used for testing

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

Table Cut-off values for antibiotic resistance of E. faecalis in Animals

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Oxazolidines	Linezolid		4	

Table Cut-off values for antibiotic resistance of E. faecalis in Feed

Test Method Used	Standard methods used for testing

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

Table Cut-off values for antibiotic resistance of E. faecalis in Food

Test Method Used	Standard methods used for testing

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

Table Cut-off values for antibiotic resistance of E. faecium in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Streptomycin		128	
	Gentamicin		32	
Amphenicols	Chloramphenicol		32	
Penicillins	Ampicillin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Streptogramins	Quinupristin/Dalfopristin		1	
Tetracyclines	Tetracycline		2	
Oxazolidines	Linezolid		4	

Table Cut-off values for antibiotic resistance of E. faecium in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Streptomycin		128	
	Gentamicin		32	
Amphenicols	Chloramphenicol		32	
Penicillins	Ampicillin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Streptogramins	Quinupristin/Dalfopristin		1	
Tetracyclines	Tetracycline		2	
Oxazolidines	Linezolid		4	

Table Cut-off values for antibiotic resistance of E. faecium in Food

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Streptomycin		128	
	Gentamicin		32	
Amphenicols	Chloramphenicol		32	
Penicillins	Ampicillin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Streptogramins	Quinupristin/Dalfopristin		1	
Tetracyclines	Tetracycline		2	
Oxazolidines	Linezolid		4	

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1 ENTEROBACTER SAKAZAKII

4.1.1 General evaluation of the national situation

A. Enterobacter sakazakii general evaluation

History of the disease and/or infection in the country

Human infections with Enterobacter sakazakii are according to our Law on infectious diseases (Official Gazette 69/95, revised 33/2006) not notifiable.

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

-

Recent actions taken to control the hazard

4.1.2 Enterobacter sakazakii in foodstuffs

A. Enterobacter sakazakii in foodstuffs

Monitoring system

Sampling strategy

HIRS is executing monitoring mainly at wholesale level, where samples of different producers are taken.
Programme:
Dried infant formulae and dried dietary foods for special medical purposes intended for infants below six months of age: 14 samples/year.

Frequency of the sampling

Samples were taken in September and October.

Methods of sampling (description of sampling techniques)

Samples were taken randomly from the available part of the consignment.
A single sample was comprised of 30 prepacked units of the product. Every unit of the sample weighed at least 100 g.

Definition of positive finding

Presence of E. sakazakii in 10g.

Diagnostic/analytical methods used

Bacteriological method: ISO/TS 22964:2006

Preventive measures in place

GHP, HACCP

Control program/mechanisms

The control program/strategies in place

Registration of establishments and official control.

Measures in case of the positive findings or single cases

Informing the owner of the sample, inspection of distributor, necessary enforcement action, informing competent authority in the country of producer and other countries flagged for action through RASFF system.

Notification system in place

Whenever Enterobacter sakazakii is detected in sample taken, relevant authorities must be informed with the result.

Results of the investigation

In 2010, Enterobacter sakazakii was not detected in any sample.

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

In 2007, 2008 and 2010 Enterobacter sakazakii was not detected in any sample (in 2009, Enterobacter sakazakii was detected in 1 sample).
Situation concerning Enterobacter sakazakii is favourable.

Table Enterobacter sakazakii in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Enterobacter sakazakii	E. sakazakii
Foodstuffs intended for special nutritional uses - dried dietary foods for special medical purposes intended for infants below 6 months [1)]	HIRS	Batch	10g	3	0	0
Infant formula - dried [2)]	HIRS	Batch	10g	11	0	0

Comments:

[1)] n=30

[2)] n=30

4.2 HISTAMINE

4.2.1 General evaluation of the national situation

A. Histamine General evaluation

History of the disease and/or infection in the country

Histamin intoxication is according to Law on infectious diseases (Official Gazette number 33/2006) not notifiable. (It could be notified as gastroenterocolitis acuta, without identified agent). Most patients with symptoms of histamin intoxication, which is not severe, do not seek medical help. Even if they go to doctor, cases are probably not reported.

From 1980 on to 2009 less than 15 cases of histamin intoxication were officially recorded in Slovenia. In 2007 a small outbreak (2 persons went ill) of histamin intoxication was recorded in coast region of Slovenia.

Cases were intoxicated by eating fishes in sandwich, on pizza, noodles with tuna fish and tomato sauce, fried small fishes.

In 2008 and 2009 and 2010 no cases or outbreaks were notified

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

The last sporadic case of histamin poisoning was recorded in 2002, last outbreak in 2007. The patient ate tunna salad and went ill one hour later.

In 2007 a small outbreak of histamin intoxication was recorded. Two persons ate small, fried fishes in a restaurant. 15 minutes after meal they went ill with nausea, headache, red rash, mainly on face, but also on body. They seeked medical help.

Representative of health authority and regional institute of public health inspected the premises of restaurant/ kitchen. Hygienic conditions were bad, HACCP was not implemented at all. Food samples were taken. In a sample of small fishes histamin was identified (2970 mg histamin / kilogram, HM006 /HPLC laboratory method). The concentration of histamin was much higher than "normal" concentration (from zero to 200 mg/ kg; according to EU decision number 2073/2005 from 15.nov 2005).
(The incriminated fishes were probably stored at room, summer temperature long before they were fried).

From 2008 to 2010 no cases were recordered.

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

The source of infection was mostly canned fish: tuna fish, mackerel, fried small fishes-sardines. Frequently fish was stored at room temperatures.

Recent actions taken to control the hazard

Sampling of food in restaurants, in food shops, education of food workers against:
storing fishes, opened canned fish on room temperature;

using large amounts of fish instead of opening smaller canns, containing fish;implementation of HACCP system - control of critical control points) etc.

Suggestions to the Community for the actions to be taken

Occasional monitoring of canned fish on histamin content.

4.2.2 Histamine in foodstuffs

A. Histamine in foodstuffs

Monitoring system

Sampling strategy

VARS

Histamine sampling of fishery products shall be conducted at processing establishments and at fish markets.

Frequency of the sampling

Sampling was distributed evenly throughout the months: June-December.

The numbers of samples of fishery products to be taken had been defined in advance and for every particular VARS Regional Office separately.

Type of specimen taken

Oily fish (fresh, salted, smoked, canned).

Methods of sampling (description of sampling techniques)

A single fish sample shall be composed of nine units (n=9). Every unit of fish sample shall weigh at least 200 g (in case of canned fish samples every unit of sample shall weigh at least 300g).

Samples were delivered to the laboratory in the shortest time possible, as a rule, immediately after sampling (in 24 hours after sampling at the latest). In time between sampling and delivery to the laboratory, samples shall be kept at 4°C(+-2°C).

Definition of positive finding

Definition of positive finding as written in the Commission Regulation (EC) No 2073/2005.

Diagnostic/analytical methods used

HPTLC

Control program/mechanisms

The control program/strategies in place

- Registration and/or approval of establishments subjected to veterinary controls
- Identification of animal products and their tracebility
- Veterinary controls in establishements

Measures in case of the positive findings or single cases

Informing the owner of the sample, food hygiene inspection and necessary enforcement action.

Notification system in place

The laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

Results of the investigation

In 2010, 24 fish samples were tested. Histamin was not detected in any sample.

Table Histamine in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units in non-conformity	<= 100 mg/kg	>100 - <= 200 mg/kg	>200 - <= 400 mg/kg	> 400 mg/kg
Fish - Fishery products from fish species associated with a high amount of histidine - not enzyme maturated		---							
Fish (Fresh fish species associated with a high amount of histidine and fishery products from fish species associated with a high amount of histidine.) [1)]	VARS	Batch	1800g	24	0	24	0	0	0

Comments:

[1)] n=9 (each out of 24 samples comprises 9 samples according to the Commission Regulation (EC) No 2073/2005)

4.3 STAPHYLOCOCCAL ENTEROTOXINS

4.3.1 General evaluation of the national situation

A. Staphylococcal enterotoxins general evaluation

History of the disease and/or infection in the country

From 2005 to 2010 the number of sporadic notified cases of staphylococcal food poisoning ranged from 2 to 7) yearly. From 1997 to 2010 there were from 0 to 5 outbreaks of staph. poisoning yearly.From 2008 to 2010 there was 1 outbreak.

Places of intoxication were: schools, school camps, restaurants, family outbreaks. In 2006 we notified three outbreaks of staphylococcal poisoning (two in school camps and one in a restaurant) in 2007 there was no outbreak in 2008 one outbreak in factory canteen, in 2009 in pizzeria, in 2010 in school).

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

The epid. situation is more or less stable; in last three years one outnbreak yearly was detected.In 2009 an outbreak of staphyloccocal food poisonoing was detected in pizzeria.Tha causative agent was Staphylococal aureus, enterotoxin A, C. In 2010 one school outbreak was caused by Staph. aureus enterotoxin A.

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

Sources of infection from outbreaks in last years are different-from human carriers to milk/milk products, potato salad, buckwheat porrdige, sauces etc.

Recent actions taken to control the hazard

Control of implementation of HACCP system.

Education of food workers about Staphyloccocus spp.infections.

4.3.2 Staphylococcal enterotoxins in foodstuffs

A. Staphylococcal enterotoxins in foodstuffs

Monitoring system

Sampling strategy

VARS

Sampling of RTE dairy products for Staphylococcal enterotoxins shall be conducted at processing (in registered and approved establishments) and at retail.

Frequency of the sampling

Sampling was distributed evenly throughout the months: June - December.

The numbers of samples of dairy products to be taken had been defined in advance and for every particular VARS Regional Office separately.

Type of specimen taken

Dairy products, ready-to-eat.

Methods of sampling (description of sampling techniques)

A single sample of a dairy product shall be composed of five units (n=5), and every unit shall weigh at least 300g/ml.

Samples were delivered to the laboratory in the shortest time possible, as a rule, immediately after sampling (in 24 hours after sampling at the latest). In time between sampling and delivery to the laboratory, samples shall be kept at 4°C(+-2°C).

As precedence dairy products made frome raw milk shall be sampled. In cases where business operators produce dairy products using the different types of milk (raw, thermally treated, pasteurised), the dairy products obtained from the raw milk and thermally treated milk shall have precedence in sampling.

Definition of positive finding

Positive sample is a sample in which Staphylococcal enterotoxin was found in 25g.

Diagnostic/analytical methods used

ELISA

Control program/mechanisms

The control program/strategies in place

- Registration and/or approval of establishments subjected to veterinary controls
- Identification of animal products and their tracebility
- Veterinary controls in establishements

Measures in case of the positive findings or single cases

Informing the owner of the sample, food hygiene inspection and necessary enforcement action.

Notification system in place

The laboratory sends the investigation reports to the VARS Main Office and to the official veterinarian who has conducted the sampling.

Results of the investigation

In 2010, 94 samples of RTE dairy products were tested. Staphylococcal enterotoxins were not detected.

Table Staphylococcal enterotoxins in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Staphylococcal enterotoxins
Dairy products, unspecified (RTE) [1)]	VARS	Batch	25g	94	0

Comments:

[1)] n=5

5. FOODBORNE

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

A. Foodborne outbreaks

System in place for identification, epidemological investigations and reporting of foodborne outbreaks

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, revised in 2006. Public health professionals in regional institutes are requested to report regularly all investigated outbreaks of infectious intestinal diseases to the National Institute of Public Health.

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 2010 from 74 only 3 foodborne outbreaks were notified.
The average number of yearly notified foodborne outbreaks from 2004 to 2010 is around 10.

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

The causative agents were Staphiloccocus aureus, norovirus and probable lipophilic marine biotoxin from mussels.

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

Foodborne outbreaks in 2010:
Staph. aureus outbreak in a school , vehicles were probable different food categories;
Norovirus - a family outbreak, probably with salad;
Lipophilic marine biotoxin an outbreak on a small ship with turists who ate mussels.

From 2005 to 2010, 53 outbreaks were caused by Salmonella. 49% of them were identified in restaurants, 21% in families, 6% in homes for the elderly, others in schools, boarding schools etc.

Evaluation of the severity and clinical picture of the human cases

There was a big outbreak of Salmonella Enteritidis in catering facility in 2009, which deliver meals to elderly people; one person died. Other outbreaks were small.

Descriptions of single outbreaks of special interest

Foodborne outbreak in home for the elderly in 2007:
from 580 inhabitants, 420 went ill; 39 were hospitalized and 5 persons died.
The causative agent was Salmonella Enteritidis, isolated from feces and food; PFGE profile confirmed similarity in more than 99%. The incriminated food was bean salad, "cross contaminated" probably from meat.

Foodborne outbreak in the canteen in 2008:
from 700 workers, who ate lunch and dinner in canteen, 40 went ill with acute gastroenterocolitis. The causative agent was probably Staphyloccocus aureus, with enterotoxin C, who was isolated also from food sample of salad with buckwheat poridge. In stool samples of some cases noroviruses were confirmed as well.

Control measures or other actions taken to improve the situation

Improvement of general hygienic conditions in kitchens;
cleaning and disinfection of public kitchens;
education of public kitchen workers about food hygiene;
excluding of public kitchen workers with infectious gastroenteritis from food handling;
excluding of public kitchen workers from food handling because of lack of knowledge of food hygiene;
control of HACCP system implementation;
control and improvement of HACCP system in places, where most outbreaks occur - smaller restaurants, inns;
booklet with information about Salmonella in food for consumers.

Table Foodborne Outbreaks: summarised data

	Number of outbreaks	Human cases	Hospitalized	Deaths	Strong evidence Number of Outbreaks	Total number of outbreaks
Salmonella - S. Typhimurium	0	0	0	0	0	0
Salmonella - S. Enteritidis	0	0	0	0	0	0
Salmonella - Other serovars	0	0	0	0	1	1
Campylobacter	0	0	0	0	0	0
Listeria - Listeria monocytogenes	0	0	0	0	0	0
Listeria - Other Listeria	0	0	0	0	0	0
Yersinia	0	0	0	0	0	0
Escherichia coli, pathogenic -	0	0	0	0	0	0
Bacillus - B. cereus	0	0	0	0	0	0
Bacillus - Other Bacillus	0	0	0	0	0	0
Staphylococcal enterotoxins	0	0	0	0	1	1
Clostridium - Cl. botulinum	0	0	0	0	0	0
Clostridium - Cl. perfringens	0	0	0	0	0	0
Clostridium - Other Clostridia	0	0	0	0	0	0
Other Bacterial agents - Brucella	0	0	0	0	0	0

	Number of outbreaks	Human cases	Hospitalized	Deaths	Strong evidence Number of Outbreaks	Total number of outbreaks
Other Bacterial agents - Shigella	0	0	0	0	0	0
Other Bacterial agents - Other Bacterial	0	0	0	0	0	0
Parasites - Trichinella	0	0	0	0	0	0
Parasites - Giardia	0	0	0	0	0	0
Parasites - Cryptosporidium	0	0	0	0	0	0
Parasites - Anisakis	0	0	0	0	0	0
Parasites - Other Parasites	0	0	0	0	0	0
Viruses - Norovirus	0	0	0	0	1	1
Viruses - Hepatitis viruses	0	0	0	0	0	0
Viruses - Other Viruses	0	0	0	0	0	0
Other agents - Histamine	0	0	0	0	0	0
Other agents - Marine biotoxins	0	0	0	0	0	0
Other agents - Other Agents	0	0	0	0	0	0
Unknown agent	0	0	0	0	1	1

The following amendments were made:

Date of Modification	Row name	Column name	Old value
2011-11-15	Cl. perfringens	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Giardia	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Histamine	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Other Clostridia	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Anisakis	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Unknown agent	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Other Bacterial agents	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Other Bacillus	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Histamine	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Unknown agent	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Shigella	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Unknown agent	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Other Clostridia	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Norovirus	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Other Viruses	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Other Bacillus	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Marine biotoxins	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Marine biotoxins	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Shigella	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Giardia	Weak evidence or no vehicle outbreaks - Human cases	unknown

Date of Modification	Row name	Column name	Old value
2011-11-15	Marine biotoxins	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Cryptosporidium	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Giardia	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Hepatitis viruses	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Cryptosporidium	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Trichinella	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Brucella	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Hepatitis viruses	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Anisakis	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Other Viruses	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Other Parasites	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Other Bacterial agents	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Other Bacterial agents	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Cl. perfringens	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Norovirus	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Other Clostridia	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Cl. botulinum	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Cl. botulinum	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Other Agents	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Norovirus	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Other Bacillus	Weak evidence or no vehicle outbreaks - Deaths	unknown

Date of Modification	Row name	Column name	Old value
2011-11-15	Trichinella	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Other Viruses	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Anisakis	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Brucella	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Staphylococcal enterotoxins	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Staphylococcal enterotoxins	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Histamine	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Trichinella	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Other Parasites	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Other Parasites	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Shigella	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Hepatitis viruses	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Brucella	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Cryptosporidium	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Staphylococcal enterotoxins	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Other Agents	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Cl. perfringens	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Cl. botulinum	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Other Agents	Weak evidence or no vehicle outbreaks - Human cases	unknown
	S. Enteritidis	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Campylobacter	Weak evidence or no vehicle outbreaks - Human cases	unknown

Date of Modification	Row name	Column name	Old value
2011-11-15	Campylobacter	Weak evidence or no vehicle outbreaks - Deaths	unknown
	S. Typhimurium	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Other Listeria	Weak evidence or no vehicle outbreaks - Deaths	unknown
	S. Enteritidis	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Verotoxigenic E. coli (VTEC)	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Yersinia	Weak evidence or no vehicle outbreaks - Human cases	unknown
	S. Typhimurium	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Verotoxigenic E. coli (VTEC)	Weak evidence or no vehicle outbreaks - Deaths	unknown
	S. Typhimurium	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	S. Enteritidis	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Other serovars	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Other serovars	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	B. cereus	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Verotoxigenic E. coli (VTEC)	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Other Listeria	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Listeria monocytogenes	Weak evidence or no vehicle outbreaks - Deaths	unknown
	B. cereus	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Other serovars	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Campylobacter	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Yersinia	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	Other Listeria	Weak evidence or no vehicle outbreaks - Hospitalized	unknown

Date of Modification	Row name	Column name	Old value
2011-11-15	Yersinia	Weak evidence or no vehicle outbreaks - Deaths	unknown
	Listeria monocytogenes	Weak evidence or no vehicle outbreaks - Human cases	unknown
	Listeria monocytogenes	Weak evidence or no vehicle outbreaks - Hospitalized	unknown
	B. cereus	Weak evidence or no vehicle outbreaks - Human cases	unknown
2011-11-09	Unknown agent	Total number of outbreaks	2
	Unknown agent	Weak evidence or no vehicle outbreaks - Number of outbreaks	1

Date of Modification	New value
2011-11-15	0
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Date of Modification	New value
2011-11-15	0
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Date of Modification	New value
2011-11-15	0
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Date of Modification	New value
2011-11-15	0
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Date of Modification	New value
2011-11-15	0
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2011-11-09	1
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Table Foodborne Outbreaks: detailed data for Salmonella

Please use CTRL for multiple selection fields

S. Toronto

	Value
FBO Code	Please ignore this entry!
Number of outbreaks	1
Number of human cases	unknown
Number of hospitalisations	unknown
Number of deaths	unknown
Food vehicle	Cheese
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

The following amendments were made:

Date of Modification	Row name	Column name	Old value
2011-11-17	S. Toronto	FBO Code	

Date of Modification	New value
2011-11-17	Please ignore this entry!

Table Foodborne Outbreaks: detailed data for Staphylococcal enterotoxins

Please use CTRL for multiple selection fields

Enterotoxin A

	Value
FBO Code	SI_03
Number of outbreaks	1
Number of human cases	84
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	potato salad and meat cheese
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	School, kindergarten
Origin of food vehicle	Intra EU trade
Contributory factors	Infected food handler
Mixed Outbreaks (Other Agent)	no
Additional information	

Table Foodborne Outbreaks: detailed data for Unknown agent

Please use CTRL for multiple selection fields

Unknown

	Value
FBO Code	SI_01
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Crustaceans, shellfish, molluscs and products thereof
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Aircraft, ship, train
Place of origin of problem	Aircraft, ship, train
Origin of food vehicle	Intra EU trade
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Viruses

Please use CTRL for multiple selection fields

Calicivirus - norovirus (Norwalk-like virus)

	Value
FBO Code	SI_02
Number of outbreaks	1
Number of human cases	31
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of food vehicle	Intra EU trade
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	RR (fish)=6, p<0,05