European Food Safety Authority

ZOONOSES MONITORING

CZECH REPUBLIC

The Report referred to in Article 9 of Directive 2003/99/EC

TRENDS AND SOURCES OF ZOONOSES AND ZOONOTIC AGENTS IN HUMANS, FOODSTUFFS, ANIMALS AND FEEDINGSTUFFS

including information on foodborne outbreaks, antimicrobial resistance in zoonotic agents and some pathogenic microbiological agents.

IN 2009

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: Czech Republic

Reporting Year:

Laboratory name	Description	Contribution
State Veterinary Administration of the Czech Republic	Control and monitoring of animal health situation and protection of consumers from products of animal origin	Contact point for Commission in accordance with Article 3 (2) Regulation 2003/99/EC. Monitoring, data collection and reporting
Czech Agriculture and Foot Inspection Authority (CAFIA)	Responsible for the control at wholesale and retail level of former foodstuffs including packaged meat and meet products	Sampling, laboratory testing and reporting.
National Institute of Public Health (NIPH)	Health promotion and protection, disease prevention and follow-up environmental impact on the health status of the population. Two department are involved to the zoonoses reporting: Department of epidemiology and microbiology and Department of food chain hygiene.	Foodborn outbreaks reporting, sampling, laborytory testing and reporting.

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 Czech Republic during the year 2009 .

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

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

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

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

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

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1. ANIMAL POPULATIONS

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

A. Information on susceptible animal population

Sources of information

Czech Statistical Office
Official statistics from Central Register of Animals in the Czech Republic which is performing in accordance with Breeding Act No. 154/2000 as amended
Data from State Veterinary Administration database

Dates the figures relate to and the content of the figures

Numbers of animals and holdings related to 31. 12. 2009.

National evaluation of the numbers of susceptible population and trends in these figures

Animal population is roughly the same level as in last year's, small changes occur in each category. The number of cattle holdings little bit decreased whereas the number of animals slightly increased. The number of sheep holdings and animals increased in year 2008. The same trends were in goats population. The number of pig holdings decreased, number of animals slightly increased. Number of Gallus gallus were approximatelly atthe same level as in 2007, but number of flocks decreased as compared with year 2007.Number of geese and ducks were going up. Number of holdings with turkeys were going up but number of turkey decreased.

Geographical distribution and size distribution of the herds, flocks and holdings

The geographical distribution of animals and holdings on the whole territory in the Czech Republic is approximately equal.

Table Susceptible animal populations

* Only if different than current reporting year

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*
Cattle (bovine animals)	meat production animals					235228		3190	
	dairy cows and heifers					747010		11153	
	calves (under 1 year)					392090		14314	
	- in total			286149		1374328		19600	
Deer	farmed - in total			89		9621		69	
Ducks	parent breeding flocks	32				64063		30	
	meat production flocks	65				4000000		65	
	elite breeding flocks	2				6762		2	
	- in total [1)]	99		3007115		4070825		97	
Gallus gallus (fowl)	elite breeding flocks, unspecified - in total	7				69746		3	
	parent breeding flocks, unspecified - in total	610				3881158		110	
	breeding flocks, unspecified - in total	620				3970833		114	
	grandparent breeding flocks for egg production line	3				19929		3	

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*
Gallus gallus (fowl)	parent breeding flocks for egg production line	95				1844260		17	
	breeding flocks for egg production line - in total	105				1933935		21	
	broilers	6035				148901510		380	
	grandparent breeding flocks, unspecified - in total	3				19929		3	
	elite breeding flocks for meat production line	0				0		0	
	laying hens	467				7603089		73	
	breeding flocks for meat production line - in total	515				2036898		93	
	parent breeding flocks for meat production line	515				2036898		93	
	grandparent breeding flocks for meat production line	0				0		0	
	elite breeding flocks for egg production line	7				69746		3	
	- in total	7122		131985020		160475432		567	
Geese	grandparent breeding flocks	3				1090		1	
	meat production flocks	14				204000		13	
	elite breeding flocks	3				3503		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*
Geese	parent breeding flocks	11				8883		10	
	- in total	31				217476		25	
Goats	meat production animals					1868		956	
	animals over 1 year					7058		4835	
	milk goats					9429		438	
	animals under 1 year					6372		2864	
	- in total			627		24727		4141	
Pigs	breeding animals					391574		981	
	fattening pigs					1739155		1964	
Pigs - breeding animals - unspecified	breeding animals - unspecified - sows and gilts							1867	
Pigs	- in total			3289761		2130729		3404	
Sheep	animals over 1 year					83290		9684	
	mixed herds					64541		6894	
	milk ewes					1243		483	

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*
Sheep	meat production animals					14467		1826	
	animals under 1 year (lambs)					44577		8469	
	- in total			11083		208118		10997	
Solipeds, domestic	horses - in total			332		79101		13175	
Turkeys	parent breeding flocks	10				39850		2	
	breeding flocks, unspecified - in total	10				39850		2	
	meat production flocks	274				1068150		119	
	- in total	284		202741		1108000		123	
Wild boars	farmed - in total					129		9	

Comments:

[1)] No of slaugtered animals included ducks and geese together

Footnote:

Number of broiler flocks (Gallus gallus) is the total number of flocks tested during the whole year 2009.

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

The monitoring and control programmes for Salmonella are carried out in the whole food chain. To this programmes are involved three institutions which are in charge for food safety and public health protection. Czech Agricultre and Food Inspection Authority and State Veterinary Administration have been established by Ministry of Agriculture and National Institute of Public Health has been establish by Ministry of Health. The Salmonellosis is notifiable disease in both in human and animal population and the obligation for notification is laied down in the legislation.

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

The main sources of infection in humans were products form eggs and poultry meat. The number of reported cases in human population has decreasing tendency during last years.

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

There is no relevance between finding in animals and finding in human. This cases are very rare. The main source of infection is through to foodstuffs of animal origin.

Recent actions taken to control the zoonoses

State Veterinary Administration, Ministry of Agriculture and Poultry Breeding Association perform in accordance with Regulation No 2160/2003 Salmonella control programmes in breeding flocks, laying hens producing table eggs and broilers.

2.1.2 Salmonellosis in humans

A. Salmonellosis in humans

Reporting system in place for the human cases

Infectious diseases (all infections including parasitary) are notified on legal basis (20/1966, 258/2000.) Physicians are obliged to notify the occurence of the infection disease and data are collected by the net of Regional Public Health Institutes with their district branch offices. The data are centrally collected and processed by the National Institute of Public health.

Case definition

Clinical signs compatible with salmonellosis, e.g. diarrhoea, abdominal pain, nausea and sometimes vomiting and bacteriological investigation.

Diagnostic/analytical methods used

Microbiological investigation, cultivation, serotyping, phagetyping

Notification system in place

Infectious diseases (all infections including parasitary) are notified on legal basis (20/1966, 258/2000). Physicians are obliged to notify the occurence of the infection disease and send collected data by the net of Regional Public Health Institutes with their district branch offices. The data are centrally collected and processed by the National Institute of Public health.

History of the disease and/or infection in the country

Incidence of salmonelloses was growing during the period from 1981 and got the plateau in late eighties. The brake was in 1989 when incidence reached three times higher levels than in previous years. The highest incidence rates were notified in 1995. Since 1998 the rates are steadily dropping down. Salmonelloses are unevenly distributed in our country. The highest rates were generally notified in agricultural districts in the east.

Results of the investigation

Less attention is paid to thermic processing of poultry and eggs and they became predominant risk food. Salmonella Enteritidis is the prevalent serotype (95% of all cases)in recent years.

2.1.3 Salmonella in foodstuffs

A. Salmonella spp. in pig meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The samples were taken at selected slaughterhouses. Sampling is done randomly on the surface of the five carcasses. The samples were taken in accordance with Directive 2003/99/EC. Samples were taken from the specified locations of carcass in half way through the slaughter day and before chilling.

At meat processing plant

The samples were taken in the ordinary surveillance.

At retail

Frequency of the sampling

At slaughterhouse and cutting plant

Once a month

At meat processing plant

Once a month

Type of specimen taken

At slaughterhouse and cutting plant

Surface of carcass

At meat processing plant

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Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

Five carcasses shall be sampled at random during each sampling session. Five carcasses of pigs were sampled before chilling using the non-destructive method with an abrasive sponge(according ISO 17604). The samples were taken from four sites of carcass (mid-back, hind limb - medial, breast - lateral, abdomen - lateral). Each sample was taken from area-100cm2.
The samples were aseptically removed and placed aseptically into a sample container and transferred to the laboratory.

At meat processing plant

The samples - meat products, were placed aseptically into a sample container and transferred to the laboratory.

At retail

The samples - final product, had to placed aseptically into a sample container and transferred to the laboratory.

Definition of positive finding

At slaughterhouse and cutting plant

presence of Salmonella in 25 g of sample

At meat processing plant

presence in 25 g

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

Bacteriological method: ISO 6579:2002

Preventive measures in place

Controls of HACCP, GMP and GHP systems

Control program/mechanisms

The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Alert System for Food and Feed.

Recent actions taken to control the zoonoses

SVA, NIPH and CAFIA carry out monitoring and control programs in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

Measures in case of the positive findings or single cases

In the case of positive result of the investigation the competent authority takes measures to prevent spreading of the infection to the food chain.

Notification system in place

The positive result of the bacteriological test has to be reported to the appropriate Regional Veterinary Administration (RVA) and the RVA has oblige to take appropriate measures. The positive results are reported to the RVA from laboratories which made the tests.

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

The prevalence of the Salmonella spp. in pig meat and products is low and the situation is stable and similar like in previous years.

B. Salmonella spp. in bovine meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The samples were taken at selected slaughterhouses. Sampling is done randomly on the surface of the five carcasses. The samples were taken in accordance with Directive 2003/99/EC. Samples were taken from the specified locations of carcass in half way through the slaughter day and before chilling.

At meat processing plant

The samples are taken in the ordinary surveillance.

Frequency of the sampling

At slaughterhouse and cutting plant

Once a month

At meat processing plant

Sampling distributed evenly throughout the year

Type of specimen taken

At slaughterhouse and cutting plant

Surface of carcass

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

Five carcasses shall be sampled at random during each sampling session. Five carcasses of bovine animals were sampled before chilling using the non-destructive method with an abrasive sponge (according ISO 17604). The samples were taken from four sites of carcass - rump, flank, brisket, neck. Each sample was taken from area-100cm2. The samples were aseptically removed and placed aseptically into a sample container and transferred to the laboratory.

At meat processing plant

The samples - meat product (final product), were placed aseptically into a sample container and transferred to the laboratory.

Definition of positive finding

At slaughterhouse and cutting plant

presence in 25 g

At meat processing plant

presence of salmonella in 25 g of sample

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

Bacteriological method: ISO 6579:2002

Preventive measures in place

control of HACCAP and GHP system

Control program/mechanisms

The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Alert System for Food and Feed.

Recent actions taken to control the zoonoses

SVA, NIPH and CAFIA carry out monitoring and control programs in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

Measures in case of the positive findings or single cases

In the case of positive result of the investigation the competent authority takes measures to prevent spreading of the infection to the food chain.

Notification system in place

The positive result of the bacteriological test has to be reported to the appropriate Regional Veterinary Administration (RVA) and the RVA has oblige to take appropriate measures. The positive results are reported to the RVA from laboratories which made the tests.

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

The prevalence of the Salmonella spp. in bovine meat and products is stable and similar like in previous years.

C. Salmonella spp. in broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The sampling is carried out from carcasses at slaughterhouses after chilling.

At meat processing plant

The samples were taken in the ordinary surveilance.

At retail

The State Veterinary Administration (SVA) took 120 chilled and 120 frozen broilers(Gallus gallus) at retail (supermarkets)

Frequency of the sampling

At slaughterhouse and cutting plant

Once a month

At meat processing plant

Sampling distributed evenly throughout the year

At retail

Once a month

Type of specimen taken

At slaughterhouse and cutting plant

neck skin samples

At retail

Fresh meat

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

Fifteen neck skin samples were taken randomly from 15 carcasses of broilers after chilling. A piece of approximately 10g from neck sin shall be obtained from each carcase. On each occasion the neck skin samples from three carcasses shall be pooled before examination in order to form 5 x 25g final samples.

At meat processing plant

The samples - meat product (final product), were placed aseptically into a sample container and transfer to the laboratory.

At retail

SVA took samples in supermarkets of 8 the biggest cities in the Czech republic

Definition of positive finding

At slaughterhouse and cutting plant

presence of salmonella in 25 g of sample

At meat processing plant

presence of salmonella in 25 g of sample

At retail

As the positive finding, SVA considered in its monitoring program the positive findings of Salmonella spp. on broilers skin

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

Bacteriological method: ISO 6579:2002

At retail

Bacteriological method: ISO 6579:2002

Preventive measures in place

creation and control of HACCP and GHP system

Control program/mechanisms

The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Alert System for Food and Feed.

Recent actions taken to control the zoonoses

SVA, NIPH and CAFIA carry out monitoring and control programs in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

Measures in case of the positive findings or single cases

In the case of positive result of the investigation the competent authority takes measures to prevent spreading of the infection to the food chain.

Notification system in place

The positive result of the bacteriological test has to be reported to the appropriate Regional Veterinary Administration (RVA) and the RVA has oblige to take appropriate measures. The positive results are reported to the RVA from laboratories which made the tests.

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

The prevalence of the Salmonella spp. in broiler meat and products is stable and situation is similar like in previous years.

D. Salmonella spp. in turkey meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The sampling is carried out from carcasses at slaughterhouses after chilling. Monitoring take place in accordance with Directive 2003/99/EC.

At meat processing plant

The samples were taken in the ordinary surveillance. The final products are sampled in the end of production.

Frequency of the sampling

At slaughterhouse and cutting plant

Once a month

At meat processing plant

Sampling distributed evenly throughout the year

Type of specimen taken

At slaughterhouse and cutting plant

neck skin samples

At meat processing plant

final product

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

Fifteen neck skin samples were taken randomly from 15 carcasses of broilers after chilling. A piece of approximately 10g from neck sin shall be obtained from each carcase. On each occasion the neck skin samples from three carcasses shall be pooled before examination in order to form 5 x 25g final samples.

At meat processing plant

the samples - one piece of final product must be placed aseptically into a sample container and transfer to the laboratory

At retail

Definition of positive finding

At slaughterhouse and cutting plant

presence of salmonella in 25 g of sample

At meat processing plant

presence of salmonella in 25 g of sample

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

Bacteriological method: ISO 6579:2002

Preventive measures in place

creation and control of HACCP and GHP system

Control program/mechanisms

The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Alert System for food and feed.

Recent actions taken to control the zoonoses

SVA, NIPH and CAFIA carry out monitoring and control programs in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

Measures in case of the positive findings or single cases

In the case of positive result of the investigation the competent authority takes measures to prevent spreading of the infection to the food chain.

Notification system in place

The positive result of the bacteriological test has to be reported to the appropriate Regional Veterinary Administration (RVA)and the RVA has oblige to take appropriate measures. The positive results are reported to the RVA from laboratories which made the tests.

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

The prevalence of the Salmonella spp. in turkey meat and products is low and the situation is stable and similar like in previous years.

E. Salmonella spp. in food - Other food - food non animal origin - at retail - official food or feed controls - random sampling

Monitoring system

Sampling strategy

There is no official National program for monitoring of Salmonella spp. at retail. State Veterinary Administration of the Czech Republic (SVA) make the controls by whole food establishment managements in the Czech Republic.

Czech Agriculture and Food Inspection Authority (CAFIA) performed control at retail according to Commisssion Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs. Samples were collected by competent authority as part of an official sampling from all 14 regions of the Czech Republic within a year by the inspectors from the Regional inspectorates and analysed in designated laboratories for analysis samples taken during official controls (Article 12, Regulation (EC) No 882/2004). The sampling by CAFIA was random. However, in case of consumer complaints was the sampling targeted.

National Institute of Public Health (NIPH) carry out monitoring of Salmonella in food at retail level in relation to protection of public health. Samples were collected from 12 regions 4 times per year by the team of worker from the Local Public Health Centers and transported to the NIPH for bacteriological examination.

Frequency of the sampling

The samples have been taken by CAFIA during the whole year mostly randomly.

The samples have been taken by NIPH during the whole year randomly every three months.

Type of specimen taken

food non animal and animal origin

Methods of sampling (description of sampling techniques)

Sample of one hundred grams minimum each is taken in a sterile way, into clean and dry plastic bag. The samples are placed into refrigerated container and immediately sent to the laboratory for investigation. Number of subsamples (n=5) were taken in particular food categories according to a sampling - plan which is given to the Chapter 1 Food safety criteria of Commission Regulation (EC) No 2073/2005.

Definition of positive finding

A batch was considered to be positive where Salmonella spp. has been isolated from at least one single sample taken out of the batch.

Diagnostic/analytical methods used

EN ISO 6579: 2002 Microbiology of food and animal feedingstuffs - Horizontal method for the detection of Salmonella spp.

Preventive measures in place

According to Article 4 of Regulation (EC) No 852/2004, food business operators are to comply with microbiological criteria. This should include testing against the values set for the criteria through the taking of samples, the conduct of analysis and the implementation of corrective actions, in accordance with food law and the instructions given by the competent authority.

Control program/mechanisms

The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Alert System for Food and Feed (RASFF).

Recent actions taken to control the zoonoses

Measures in case of the positive findings or single cases

In the case of positive result of investigation the whole batch is recalled from the retail and the competent authority takes measures to prevent spreading of the infection.

Results of the investigation

See table Salmonella in other food.

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 6,7:-:1,5	S. Agona	S. Indiana
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail	CAFIA	Batch	25g	24	0						
Meat from broilers (Gallus gallus) - carcass - spent hens - at retail - Survey	NIPH	Single	25g	12	4	2		2			
Meat from broilers (Gallus gallus) - fresh - at slaughterhouse - Monitoring - official sampling [1)]	SVA	Batch	25g	708	21	1			8	2	
Meat from broilers (Gallus gallus) - fresh - chilled - at retail - Monitoring - official sampling	SVA	Single	27g	120	1				1		
Meat from broilers (Gallus gallus) - fresh - frozen - at retail - Monitoring - official sampling	SVA	Single	27g	120	3						1
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	1205	0						
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - Survey	NIPH	Single	25g	12	4			4			
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVA	Batch	25g	249	0						
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - Survey	NIPH	Single	25g	36	0						
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	794	5						

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 6,7:-:1,5	S. Agona	S. Indiana
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls	SVA	Batch	25g	81	4		1		1	1	
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	3	0						
Meat from broilers (Gallus gallus) - offal - unspecified - at retail - Survey	NIPH	Single	25g	12	0						
Meat from duck - at processing plant - Surveillance - official controls	SVA	Batch	25g	21	0						
Meat from turkey - fresh - at slaughterhouse - Monitoring - official sampling [2)]	SVA	Batch	25g	168	4					1	
Meat from turkey - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	78	0						
Meat from turkey - meat preparation - intended to be eaten cooked - at retail - Survey	NIPH	Single	25g	12	2			2			
Meat from turkey - meat products - cooked, ready-to -eat - at processing plant - Surveillance - official controls	SVA	Batch	25g	19	1						
Meat from turkey - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	129	6						
Meat from turkey - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls	SVA	Batch	25g	25	3						
Meat from turkey - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	35	4						

Table Salmonella in poultry meat and products thereof

	S. Infantis	S. Kentucky	S. Kottbus	S. Montevideo	S. Newport	S. Ohio	S. Saintpaul	S. Zanzibar
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail								
Meat from broilers (Gallus gallus) - carcass - spent hens - at retail - Survey								
Meat from broilers (Gallus gallus) - fresh - at slaughterhouse - Monitoring - official sampling [1)]			1	3	5	1		
Meat from broilers (Gallus gallus) - fresh - chilled - at retail - Monitoring - official sampling								
Meat from broilers (Gallus gallus) - fresh - frozen - at retail - Monitoring - official sampling		2						
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls								
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - Survey								
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls								
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - Survey								
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls	1		1	1		2		
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls					1			

Table Salmonella in poultry meat and products thereof

	S. Infantis	S. Kentucky	S. Kottbus	S. Montevideo	S. Newport	S. Ohio	S. Saintpaul	S. Zanzibar
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls								
Meat from broilers (Gallus gallus) - offal - unspecified - at retail - Survey								
Meat from duck - at processing plant - Surveillance - official controls								
Meat from turkey - fresh - at slaughterhouse - Monitoring - official sampling [2)]					3			
Meat from turkey - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls								
Meat from turkey - meat preparation - intended to be eaten cooked - at retail - Survey								
Meat from turkey - meat products - cooked, ready-to -eat - at processing plant - Surveillance - official controls					1			
Meat from turkey - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls					5		1	
Meat from turkey - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls					1		1	1
Meat from turkey - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls					3		1	

Comments:

[1)] neck skin

Table Salmonella in poultry meat and products thereof

[2)] neck skin

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 4,12:i:-	S. 6,7:r:-	S. Agona
Meat from pig - meat preparation - intended to be eaten raw - at retail	CAFIA	Batch	25g	11	0						
Meat from pig - meat products - cooked, ready-to-eat - at retail	CAFIA	Batch	25g	77	0						
Other products of animal origin - gelatin and collagen	CAFIA	Batch	25g	17	0						
Meat from bovine animals - fresh - at slaughterhouse - Monitoring - official sampling [1)]	SVA	Batch	25g	4410	3	1	1				1
Meat from bovine animals - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	981	2				1		1
Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVA	Batch	25g	467	1						
Meat from bovine animals - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	3	0						
Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	45	0						
Meat from pig - fresh - at slaughterhouse - Monitoring - official sampling [2)]	SVA	Batch	25g	5262	9		1			1	1
Meat from pig - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	2058	5	1			1		1
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVA	Batch	25g	1546	1		1				

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 4,12:i:-	S. 6,7:r:-	S. Agona
Meat from pig - meat products - cooked, ready-to-eat - at retail - Survey	NIPH	Single	25g	60	0						
Meat from pig - meat products - fermented sausages - at retail - Surveillance - official controls	CAFIA	Batch	25g	13	0						
Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	150	5		2				
Meat from pig - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls	SVA	Batch	25g	27	0						
Meat from pig - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	161	0						
Meat, mixed meat - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	1508	4		2				
Meat, mixed meat - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVA	Batch	25g	1427	2		1				
Meat, mixed meat - meat products - cooked, ready-to-eat - at retail - Surveillance - official controls	CAFIA	Batch	25g	44	0						
Meat, mixed meat - meat products - fermented sausages - at processing plant - Surveillance - official controls	SVA	Batch	25g	159	1	1					
Meat, mixed meat - minced meat - intended to be eaten cooked - at retail - Surveillance - official controls	CAFIA	Batch	25g	65	0						

Table Salmonella in red meat and products thereof

	S. Brandenburg	S. Derby	S. Goldcoast	S. Infantis	S. London	S. Ohio	S. Rissen	Salmonella spp.
Meat from pig - meat preparation - intended to be eaten raw - at retail								
Meat from pig - meat products - cooked, ready-to-eat - at retail								
Other products of animal origin - gelatin and collagen								
Meat from bovine animals - fresh - at slaughterhouse - Monitoring - official sampling [1)]								
Meat from bovine animals - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls								
Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls				1				
Meat from bovine animals - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls								
Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls								
Meat from pig - fresh - at slaughterhouse - Monitoring - official sampling [2)]		3		1	1			1
Meat from pig - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls	1				1			
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls								

Table Salmonella in red meat and products thereof

	S. Brandenburg	S. Derby	S. Goldcoast	S. Infantis	S. London	S. Ohio	S. Rissen	Salmonella spp.
Meat from pig - meat products - cooked, ready-to-eat - at retail - Survey								
Meat from pig - meat products - fermented sausages - at retail - Surveillance - official controls								
Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls			1			1	1	
Meat from pig - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls								
Meat from pig - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls								
Meat, mixed meat - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls			2					
Meat, mixed meat - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls		1						
Meat, mixed meat - meat products - cooked, ready-to-eat - at retail - Surveillance - official controls								
Meat, mixed meat - meat products - fermented sausages - at processing plant - Surveillance - official controls								
Meat, mixed meat - minced meat - intended to be eaten cooked - at retail - Surveillance - official controls								

Table Salmonella in red meat and products thereof

Comments:

[1)] carcass swabs
[2)] carcass swabs

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
Fruits and vegetables - precut - ready-to-eat [1)]	CAFIA	Batch	25g	48	0			
Cocoa and cocoa preparations, coffee and tea - at retail - Survey	NIPH	Single	25g	12	0			
Egg products - at processing plant - Surveillance - official controls	SVA	Batch	25g;	456	0			
Eggs - raw material (liquid egg) for egg products - at processing plant - Surveillance - official controls	SVA	Batch	25g	256	8	8		
Eggs - table eggs - at packing centre - Surveillance - official controls	SVA	Batch	25g	330	0			
Eggs - table eggs - at retail - Survey	NIPH	Single	25g	48	1	1		
Fish - at retail - Survey	NIPH	Single	25g	24	1	1		
Fish - smoked - at retail - Survey	NIPH	Single	25g	12	0			
Fishery products, unspecified - raw - at processing plant - Surveillance - official controls	SVA	Batch	25g	33	0			
Fishery products, unspecified - ready-to-eat - at retail - Survey	NIPH	Single	25g	12	0			
Fruits - at retail - Survey	NIPH	Single	25g	12	0			
Infant formula - dried - intended for infants below 6 months - at retail - Survey	NIPH	Single	25g	12	0			
Meat from bovine animals and pig - minced meat - at retail - Survey	NIPH	Single	25g	12	0			
Meat from pig - offal - liver - at retail - Survey	NIPH	Single	25g	12	0			
Meat from rabbit - fresh - at retail - Survey	NIPH	Single	25g	12	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
Meat, mixed meat - meat products - cooked, ready-to-eat - at retail - Survey	NIPH	Single	25g	84	0			
Meat, mixed meat - meat products - fermented sausages - at retail - Survey	NIPH	Single	25g	24	0			
Molluscan shellfish - cooked - at processing plant - Surveillance - official controls	SVA	Batch	25g	10	0			
Mushrooms - at retail - Survey	NIPH	Single	25g	12	0			
Other processed food products and prepared dishes [2)] - at processing plant - Surveillance - official controls	CAFIA	Batch	25g	28	0			
Other processed food products and prepared dishes [3)] - at retail - Survey	NIPH	Single	25g	12	0			
Ready-to-eat salads - at processing plant - Surveillance - official controls	CAFIA	Batch	25g	191	0			
Ready-to-eat salads - at retail - Surveillance - official controls	CAFIA	Batch	25g	56	0			
Sweets - at processing plant - Surveillance - official controls	CAFIA	Batch	25g	396	0			
Sweets - at retail - Surveillance - official controls	CAFIA	Batch	25g	60	0			
Sweets - at retail - Survey	NIPH	Single	25g	12	0			
Vegetables - at retail - Survey	NIPH	Single	25g	60	0			
Vegetables - pre-cut - frozen vegetables - at retail - Survey	NIPH	Single	25g	36	0			

Comments:

[1)] at retail (32 units tested), at processing plant (16 units tested)

Table Salmonella in other food

[2)] Dumplings
[3)] Bread dumpling

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	S. Orion
Dairy products (excluding cheeses) - ice-cream - at retail	CAFIA	Batch	25g	7	0				
Cheeses made from cows' milk - hard - made from pasteurised milk - at retail - Survey	NIPH	Single	25g	12	0				
Cheeses made from cows' milk - soft and semi-soft - at processing plant - Surveillance - official controls	SVA	Batch	25g	23	0				
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	154	0				
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail - Survey	NIPH	Single	25g	24	0				
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	23	0				
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	11	0				
Dairy products (excluding cheeses) - butter - made from pasteurised milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	54	0				
Dairy products (excluding cheeses) - cream - made from raw or low heat-treated milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	7	0				
Dairy products (excluding cheeses) - ice-cream - at processing plant - Surveillance - official controls	SVA	Batch	25g	248	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	S. Orion
Dairy products (excluding cheeses) - ice-cream - at retail - Survey	NIPH	Single	25g	12	0				
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - Surveillance - official controls	SVA	Batch	25g	3387	0				
Milk, cows' - pasteurised milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	135	0				
Milk, cows' - raw - intended for direct human consumption - at farm - Surveillance - official controls	SVA	Batch	25g	15	0				
Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products - at processing plant - Surveillance - official controls	SVA	Batch	25g	19	1				1
Milk, goats' - raw - intended for direct human consumption - at farm - Surveillance - official controls	SVA	Batch	25g	4	0				

2.1.4 Salmonella in animals

A. Salmonella spp. in Gallus Gallus - breeding flocks

Monitoring system

Sampling strategy

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

The sampling strategy was in accordance with Regulation (EC) No. 2160/2003 of the European Parliament and the Concil and Commission Regulation (EC) 1003/2005.

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

4 weeks

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

2 weeks

Type of specimen taken

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

Internal linings of delivery boxes

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

Faeces

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

Faeces

Methods of sampling (description of sampling techniques)

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

At day-old chicks after transport are taken samples from internal wall of transport boxes, 10 swabs from each delivery. All fallen chicks (max. 60) were tested as well.

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

Pooled samples from faces (each weighing not less than 1 g) with regard on the number of birds in the building. 250 - 349 birds 200 samples, 350 - 449 birds 220 samples, 450 - 799 birds 250 samples, 800 - 999 birds 260 samples, 1000 and more birds 300 samples. Faeces may be poled for analysis up to a minimum of two pools and also the boot swabs may be poled for analysis into a minimum of two pools and separately tested.

Breeding flocks: Production period

Pooled samples from faces (each weighing not less than 1 g) with regard on the number of birds in the building. 250 - 349 birds 200 samples, 350 - 449 birds 220 samples, 450 - 799 birds 250 samples, 800 - 999 birds 260 samples, 1000 and more birds 300 samples. Faeces may be poled for analysis up to a minimum of two pools and also the boot swabs may be poled for analysis into a minimum of two pools and separately tested.

Case definition

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

The breeding flock is considered as infected with Salmonella enteritidis and Salmonella typhimurium when the presence of Salmonella is detected in official sample or when the initial positive result of operator sampling is confirmed by positive result of official sample taken in order to exclude the false positive result of operator sampling. The confirmation method is based on technical specifications referred to in Article 5 of Commission Decision 2004/665/EC (5 pooled faeces samples and 2 pooled dust samples separately analysed).

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

The breeding flock is considered as infected with Salmonella enteritidis and Salmonella typhimurium when the presence of Salmonella is detected in official sample or when the initial positive result of operator sampling is confirmed by positive result of official sample taken in order to exclude the false positive result of operator sampling. The confirmation method is based on technical specifications referred to in Article 5 of Commission Decision 2004/665/EC (5 pooled faeces samples and 2 pooled dust samples separately analysed).

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

The breeding flock is considered as infected with Salmonella enteritidis and Salmonella typhimurium when the presence of Salmonella is detected in official sample or when the initial positive result of operator sampling is confirmed by positive result of official sample taken in order to exclude the false positive result of operator sampling. The confirmation method is based on technical specifications referred to in Article 5 of Commission Decision 2004/665/EC (5 pooled faeces samples and 2 pooled dust samples separately analysed).

Diagnostic/analytical methods used

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

Bacteriological method: ISO 6579:2002

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

Bacteriological method: ISO 6579:2002

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

Bacteriological method: ISO 6579:2002

Vaccination policy

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

Vaccination is mandatory against Salmonella enteritidis since 1st January 2007. Before 1st January 2007 the vaccination was carry out on voluntary basis.

Control program/mechanisms

The control program/strategies in place

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

Aim of the programme is to monitor, on the basis of sampling in all poultry flocks, occurrence of invasive serotypes of S. enteritidis, S. typhimurium, S. infantis, S. virchow and S. hadar, and to take measures aimed in particular at the protection of public health, as well as health of other poultry populations. To ensure the reduction of percentage of positive breeding poultry flocks to 1% within the period of 3 years. The entire territory of the Czech Republic and all registered poultry holdings are included in the monitoring.

Official checks at the level of poultry flocks are organized and carried out by the relevant Regional Veterinary Administrations (RVA), which also take measures in the case of positive results.

Sampling in poultry flocks is carried out by farmers or private veterinarians. Official confirmation samples are taken and sent to the laboratory examination by official veterinarians from the relevant RVA.

Legal basis of the programme
The programme has been approved by the Commision.
Legal basis of the programme represent the following pieces of legislation:

a) Regulation (EC) No. 2160/2003 of the European Parliament and of the Council of 17 November 2003 on the control of salmonella and other specified food-borne zoonotic agents, on the basis of which must Member States draw up national programmes for control of salmonellae.
b) Commission Regulation (EC) No. 1003/2005 of 30 June 2005 implementing Regulation (EC) No. 2160/2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in breeding flocks of Gallus gallus and amending Regulation (EC) No 2160/2003.
c) Act No. 166/1999 concerning veterinary care and amending certain related laws (Veterinary Act), as amended (hereinafter referred to as the â€œVeterinary Actâ€).
d) Decree of the Ministry of Agriculture No. 356/2004 concerning monitoring of zoonoses and zoonotic agents and amending Decree No. 299/2003 concerning measures for prevention and eradication of contagious diseases and diseases communicable from animals to man.

Measures in case of the positive findings or single cases

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

Measures taken following the detection of S. enteritidis and/or S. typhimurium in
faecal samples taken by a farmer:
In order to exclude false - positive initial results from the samples taken by operator, the relevant RVA carried out official sampling after positive result in samples taken by operator. Sampling is carried out according to Annex 1, 4 (b)(i) of Commission Regulation No 1237/2007, amending Regulation EC No 2160/2003 of the European Parliament and of the Council and Decision 2006/696/EC and it is based on the technical specifications referred to in Article 5 of Commission Decision 2004/665/EC (seven samples); all samples of faeces and dust must be analysed separately.
In the case of a suspicion on the presence of inhibitory substances, the laboratory shall perform a confirmatory test, in order to exclude the use of antibiotics likely to affect the results of the confirmatory analysis.
Pending the completion of the confirmatory examination, the RVA shall impose at least the following measures:
bacteriological analysis of feeds and water, if necessary, for the detection Salmonella spp.;
in the case of a positive result of the detection of S. enteritidis and/or S. typhimurium, hatching eggs shall be suspended pending the completion of the confirmatory analyses;
a thorough mechanical cleansing and disinfection of the house, as well as other premises (e.g. stores of feeds and litter), shall be performed. A thorough mechanical cleansing of halls and technologies, followed by disinfection and safe disposal of faeces or litter shall be performed on completion of each production cycle.
In the case of a negative result of the confirmatory examination the flock shall be considered negative.
Measures taken in the case of positive official samples and positive confirmatory examinations for S. enteritidis and/or S. typhimurium:
The RVA shall perform an epidemiological investigation in the holding, aimed at the detection of the possible source of the infection and shall impose at least that:
a)Bacteriological examination of feeds and water for the detection Salmonella spp. is performed, if necessary;
b)All birds, including day-old chicks, in the positive flock must be slaughtered or destroyed so as to reduce

as much as possible the risk of Salmonella spreading. Slaughtering must be carried out in accordance with Community legislation on food hygiene. By-products derived from such birds and not intended for human consumption, must be disposed in accordance with Regulation (EC) of the European Parliament and of the Council No 1774/2002 laying down health rules concerning animal by-products not indented for human consumption;
c)Non-incubated eggs must be destroyed;
d)Where eggs for hatching are still present in a hatchery, they must be destroyed or treated in accordance with Regulation (EC) of the European Parliament and of the Council No 1774/2002;
e)After slaughtering or destruction of birds from infected flocks, a thorough cleansing and disinfection, as well as disposal of faeces or litter, must be performed in accordance with the instructions of the relevant RVA;
f)The relevant RVA performs the supervision on the efficacy of the disinfection carried out by the farmer; the checks on the efficacy of the disinfection shall be performed by means of bacteriological testing of swabs, in accordance with the method specified by the NRL;
g)All others flocks at the holding are officially sampled.

Notification system in place

Notification system is lay down by the Act No. 166/1999 of 13 July 1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

B. Salmonella spp. in Gallus Gallus - broiler flocks

Monitoring system

Frequency of the sampling

Broiler flocks: Before slaughter at farm

3 weeks prior to slaughter

Type of specimen taken

Broiler flocks: Before slaughter at farm

Faeces

Methods of sampling (description of sampling techniques)

Broiler flocks: Before slaughter at farm

Two pairs of boot/socks swabs were taken. For free range flocks of broilers, samples were collected in the area inside the house. All boot/sock swabs were pooled into one sample. In flocks with less than 100 broilers, where it is not possible to use boot/sock swabs as access to the houses is not possible, they may be replaced by hand drag swabs, where the boot swabs or socks are worn over gloved hands and rubbed over surfaces contaminated with fresh faeces. Before putting on the boot/sock swabs, their surface was moistened with maximum recovery diluents (MRD: 0.8 % sodium chloride, 0.1 % peptone in sterile deionised water), or sterile water or any other diluent approved by the National Reference Laboratory at the SVI in Prague. All sections in a house are represented in the sampling in a proportionate way. Each pair must cover about 50 % of the area of the house. On completion of sampling the boot/sock swabs were carefully removed so as not to dislodge adherent material. Boot swabs were inverted to retain material. They were placed in a bag or pot and labelled.
The RVA perform training of operators and/or other persons designated by farmers to guarantee the correct application of the sampling protocol.

Case definition

Broiler flocks: Before slaughter at farm

A flock of broilers is considered positive for the purpose of verifying the achievement of the Community target, where the presence of Salmonella enteritidis and/or Salmonella typhimurium (other than vaccine strains) was detected in the flock at any occasion.

Diagnostic/analytical methods used

Broiler flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Vaccination policy

Broiler flocks

Vaccination is voluntary and in practise is not performed in broilers flocks. All breeding flocks in meet productiomn line are vaccinated mandatory against S. enteritidis.

Control program/mechanisms

The control program/strategies in place

Broiler flocks

A thorough mechanical cleansing, disinfection, disinsectisation and rat extermination is performed following dispatch of broilers to a slaughterhouse; as well as safe disposal of faeces or litter. Farmers take swab samples for laboratory check on efficacy of disinfection.
New birds may be introduced only upon confirmation of efficacy of disinfection.

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

Monitoring system

Sampling strategy

Laying hens flocks

The sampling strategy was in accordance Regulation (EC) No. 2160/2003 of the European Parliament and the Concil.

National Control Programme was started From 1 st January 2007. The aim of the National Control Programme for Salmonella Infections in Laying Hens (Gallus gallus) producing table eggs is reduction of the prevalence of Salmonella enteritidis and Salmonella typhimurium in laying hens flocks and to ensure that adequate and effective measures for monitoring and control of salmonella infections are taken in laying flocks. The reduction of the prevalence of the Salmonella in laying hens flocks is focused on achievement of the targets laying down in Commission Regulation (EC) No. 1168/2006. The National control programme was imposed one year earliear than is set up in EU legislation.

Frequency of the sampling

Laying hens: Day-old chicks

Every flock is sampled

Laying hens: Rearing period

2 weeks prior to moving

Laying hens: Production period

15 weeks

Type of specimen taken

Laying hens: Day-old chicks

Internal linings of delivery boxes

Laying hens: Rearing period

Faeces

Laying hens: Production period

Faeces

Methods of sampling (description of sampling techniques)

Laying hens: Day-old chicks

At one day-old chicks after transport are taken samples from internal wall of transport boxes, 10 swabs from each delivery. All fallen chicks (max. 60) were tested as well. At one day-old chicks after transport are taken samples from internal wall of transport boxes, 10 swabs from each delivery. All fallen chicks (max. 60) were tested as well.

Laying hens: Rearing period

a)in cage flocks, 2 × 150 grams of naturally pooled faeces were 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;
b)in barn or free-range houses, two pairs of boot swabs or socks were taken, without changing overboots between boot swabs.

Laying hens: Production period

a)in cage flocks, 2 × 150 grams of naturally pooled faeces were 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;
b)in barn or free-range houses, two pairs of boot swabs or socks were taken, without changing overboots between boot swabs.
In the case of official sampling, 3 × 150 grams of naturally polled faeces in cage flocks or 3 pairs of boot swabs in barn or free-range houses shall be collected. Individual samples must be analysed at the laboratory separately.

Case definition

Laying hens: Day-old chicks

The flock of laying hens is considered positive for S. enteritidis or S. typhimurium in the case of positive result of official sampling or in the case of positive result of official sample taken in order to exclude the false positive result of operator sampling. The confirmation method is based on technical specifications referred to in Article 5 of Commission Decision 2004/665/EC (5 pooled faeces samples and 2 pooled dust samples analysed separately).

Laying hens: Rearing period

The flock of laying hens is considered positive for S. enteritidis or S. typhimurium in the case of positive result of official sampling or in the case of positive result of official sample taken in order to exclude the false positive result of operator sampling. The confirmation method is based on technical specifications referred to in Article 5 of Commission Decision 2004/665/EC (5 pooled faeces samples and 2 pooled dust samples analysed separately).

Laying hens: Production period

The flock of laying hens is considered positive for S. enteritidis or S. typhimurium in the case of positive result of official sampling or in the case of positive result of official sample taken in order to exclude the false positive result of operator sampling. The confirmation method is based on technical specifications referred to in Article 5 of Commission Decision 2004/665/EC (5 pooled faeces samples and 2 pooled dust samples analysed separately).

Diagnostic/analytical methods used

Laying hens: Day-old chicks

Bacteriological method: ISO 6579:2002

Laying hens: Rearing period

Bacteriological method: ISO 6579:2002

Laying hens: Production period

Bacteriological method: ISO 6579:2002

Vaccination policy

Laying hens flocks

Vaccination against Salmonella enteritidis in laying hens flocks producing table eggs is mandatory since 1st January 2007. Vaccination against Salmonella enteritidis in laying hens flocks producing table eggs

was voluntary and most of the flocks of laying hens have not been vaccinated against any serotype of Salmonella spp. is mandatory since 1st January 2007.

Control program/mechanisms

The control program/strategies in place

Laying hens flocks

The aim of the National Control Programme for Salmonella Infections in Laying Hens (Gallus gallus) producing table eggs, to be applied from the year 2008 is reduction of the prevalence of Salmonella enteritidis and Salmonella typhimurium in laying hens flocks and to ensure that adequate and effective measures for monitoring and control of salmonella infections are taken in laying flocks. The reduction of the prevalence of the Salmonella in laying hens flocks will be focused on achievement of the targets laying down in Commission Regulation (EC) No. 1168/2006.
The central authority competent for supervising and coordinating all activities in veterinary care is the State Veterinary Administration, which performs its powers at the whole territory of the Czech Republic (Â§ 47, Veterinary Act No 166/1999 Col. of Acts). SVA of the CR coordinates the activities of Regional Veterinary Administrations and lay down Methodology for Animal Health Control.
Legal basis
a)Regulation (EC) No. 2160/2003 of the European Parliament and of the Council of 17 November 2003 on the control of salmonella and other specified food-borne zoonotic agents;
b)Commission Regulation (EC) No 1177/2006 of 1 August 2006 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella in poultry;
c)Commission Regulation (EC) No 1168/2006 of 31 July 2006 implementing Regulation (EC) No 2160/2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in laying hens of Gallus Gallus and amending Regulation (EC) No 1003/2005;
d)Commission Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs;
e)Commission Regulation (EC) No 1091/2005 of 12 July 2005 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella;
f)Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs;
g)Directive 2003/99/EC of the European Parliament and of the Council of 17 November 2003 on the monitoring of zoonoses and zoonotic agents, amending Council Decision 90/424/EEC and repealing Council Directive 92/117/EEC;
h)Act No. 166/1999 concerning veterinary care and amending certain related laws, as amended (Veterinary Act);
i)Act No. 154/2000 concerning pedigree breeding, breeding and registration of farm animals and amending certain related laws, as amended (Breeding Act);
j)Act No. 146/2002 concerning the Czech Agriculture and Food Inspection Authority and amending certain related laws, as amended;
k)Act No. 20/1966 concerning public health care, as amended;
l)Decree No. 356/2004 concerning the monitoring of zoonoses and zoonotic agents and amending Decree No. 299/2003 concerning measures for prevention and eradication of contagious diseases and diseases communicable from animals to man;
m)DeNo. 296/2003 concerning animal health and its protection, animal movement and transportation and authorization and professional qualification for performance of certain professional veterinary activities; Decree No. 136/2004 laying down details for identification of animals and their registration and registration of holdings and person designated by Breeding Act.

Measures in case of the positive findings or single cases

Laying hens flocks

Measures taken in the case of salmonella detection (S. enteritidis and/or S. typhimurium) in faeces:

The relevant RVA shall order at least the following measures:

1) Table eggs coming from infected flocks may be used for human consumption only if treated in a manner that guarantees the destruction of all Salmonella serotypes with public health significance in accordance with Community legislation on food hygiene;

Eggs shall be:
(a) 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 (1);

(b) 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.
(c) Prohibited access to packaging centres unless the competent authority is satisfied with the measures to pre-vent possible cross-contamination of eggs from other flocks.

2) In order to exclude false - positive initial results from the samples taken by operator, the relevant RVA carried out official sampling after positive result in samples taken by operator. Sampling is carried out according to Annex 1, 4 (b)(i) of Commission Regulation No 1237/2007, amending Regulation EC No 2160/2003 of the European Parliament and of the Council and Decision 2006/696/EC and it is based on the technical specifications referred to in Article 5 of Commission Decision 2004/665/EC (seven samples); all samples of faeces and dust must be analysed separately.

In the case of a suspicion on the presence of inhibitory substances, the laboratory shall perform a confirmatory test, in order to exclude the use of antibiotics likely to affect the results of the confirmatory analysis.

Measures taken in the case of confirmation of the infection:
•In the case of positive result of the confirmatory examination, the flock in question is considered infected. Safe disposal of poultry showing clinical signs is performed; in other poultry targeted effective treatment, including use of probiotics or acidification of water and feeds, is recommended;
•When birds from infected flocks are slaughtered or destroyed, steps must be taken to reduce the risk of spreading zoonoses as far as possible. Slaughtering is carried out in accordance with Community legislation on food hygiene. Products derived from such birds may be placed on the market for human consumption in accordance with Community legislation on food hygiene. If not destined for human consumption, such products must be used or disposed of in accordance with Regulation (EC) No 1774/2002;
•Thorough cleansing and disinfection, including safe removal of faeces or litter must be performed after slaughtering or killing of poultry from infected flocks;
•Table eggs coming from infected flocks may be used for human consumption only after their in a way ensuring that they are completely free of all salmonella serotypes of public health relevance, in accordance with food hygiene legislation;
•Performance of further bacteriological examination of feed and water for the presence of Salmonella spp., if necessary;

Notification system in place

Notification system is lay down by the Act No. 166/1999 of 13 July 1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

Table Salmonella in breeding flocks of Gallus gallus

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	Salmonella spp., unspecified
Gallus gallus (fowl) - parent breeding flocks for egg production line - day-old chicks	6	NRL for Salmonella	Flock	6	0						
Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period	10	NRL for Salmonella	Flock	10	0						
Gallus gallus (fowl) - parent breeding flocks for egg production line - adult	95	NRL for Salmonella	Flock	95	1				1		
Gallus gallus (fowl) - grandparent breeding flocks for egg production line	4	NRL for Salmonella	Flock	4	0						
Gallus gallus (fowl) - elite breeding flocks for egg production line	15	NRL for Salmonella	Flock	15	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks	93	NRL for Salmonella	Flock	93	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period	555	NRL for Salmonella	Flock	555	5						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - adult	515	NRL for Salmonella	Flock	515	8	5					
Gallus gallus (fowl) - elite breeding flocks for egg production line - adult - at farm - environmental sample - boot swabs	7	NRL for Salmonella	Flock	7	0						
Gallus gallus (fowl) - elite breeding flocks for egg production line - day-old chicks	4	NRL for Salmonella	Flock	4	0						
Gallus gallus (fowl) - elite breeding flocks for egg production line - during rearing period	4	NRL for Salmonella	Animal	4	0						

Table Salmonella in breeding flocks of Gallus gallus

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	Salmonella spp., unspecified
Gallus gallus (fowl) - grandparent breeding flocks for egg production line - adult - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling	3	NRL for Salmonella	Flock	3	0						
Gallus gallus (fowl) - grandparent breeding flocks for egg production line - during rearing period - at farm - environmental sample - boot swabs - Control and eradication programmes - industry sampling - census sampling	1	NRL for Salmonella	Flock	1	0						

	S. Agona	S. Mbandaka	S. Montevideo	S. Tennessee
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) - grandparent breeding flocks for egg production line				
Gallus gallus (fowl) - elite breeding flocks for egg production line				
Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks				
Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period	1		4	

Table Salmonella in breeding flocks of Gallus gallus

	S. Agona	S. Mbandaka	S. Montevideo	S. Tennessee
Gallus gallus (fowl) - parent breeding flocks for broiler production line - adult		1	1	1
Gallus gallus (fowl) - elite breeding flocks for egg production line - adult - at farm - environmental sample - boot swabs				
Gallus gallus (fowl) - elite breeding flocks for egg production line - day-old chicks				
Gallus gallus (fowl) - elite breeding flocks for egg production line - during rearing period				
Gallus gallus (fowl) - grandparent breeding flocks for egg production line - adult - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling				
Gallus gallus (fowl) - grandparent breeding flocks for egg production line - during rearing period - at farm - environmental sample - boot swabs - Control and eradication programmes - industry sampling - census sampling				

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 4,12:i:-	S. 6,7:-:1,5	S. Agona
Gallus gallus (fowl) - laying hens - day-old chicks	153	NRL for Salmonella	Flock	153	1						
Gallus gallus (fowl) - laying hens - during rearing period	172	NRL for Salmonella	Flock	172	2	2					
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling	467	NRL for Salmonella	Flock	467	60	51					1
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry	467	NRL for Salmonella	Flock	303	11	9					
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling	467	NRL for Salmonella	Flock	277	39	32					1
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - suspect sampling	467	NRL for Salmonella	Flock	63	10	10					
Gallus gallus (fowl) - broilers - before slaughter - at farm - Control and eradication programmes - official and industry sampling	6035	NRL for Salmonella	Flock	6035	445	233	10			26	1
Turkeys - breeding flocks, unspecified - adult - at farm - environmental sample - boot swabs - Control and eradication programmes - industry sampling - census sampling	4	NRL for Salmonella	Flock	4	4						
Turkeys - meat production flocks - before slaughter - at farm - environmental sample - boot swabs	20	NRL for Salmonella	Flock	20	6						

Table Salmonella in other poultry

	S. Cubana	S. Gallinarum	S. Hadar	S. Havana	S. I 4,12,27:b:-	S. Indiana	S. Infantis	S. Isangi	S. Kentucky	S. Kottbus	S. Lille
Gallus gallus (fowl) - laying hens - day-old chicks										1	
Gallus gallus (fowl) - laying hens - during rearing period											
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling	1			6							
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry				1							
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling	1			5							
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			3	1	1	8	38	4	29	2	6
Turkeys - breeding flocks, unspecified - adult - at farm - environmental sample - boot swabs - Control and eradication programmes - industry sampling - census sampling									1		
Turkeys - meat production flocks - before slaughter - at farm - environmental sample - boot swabs									1		

Table Salmonella in other poultry

	S. London	S. Mbandaka	S. Montevideo	S. Newport	S. Ohio	S. Oranienburg	S. Rissen	S. Saintpaul	S. Schwarzengrund	S. Senftenberg	S. Tennessee
Gallus gallus (fowl) - laying hens - day-old chicks											
Gallus gallus (fowl) - laying hens - during rearing period											
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling			1								
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry			1								
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling											
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	1	6	7	6	44		1		6	1	8
Turkeys - breeding flocks, unspecified - adult - at farm - environmental sample - boot swabs - Control and eradication programmes - industry sampling - census sampling				3							
Turkeys - meat production flocks - before slaughter - at farm - environmental sample - boot swabs				2				3			

Table Salmonella in other poultry

	S. enterica subsp. enterica, rough
Gallus gallus (fowl) - laying hens - day-old chicks	
Gallus gallus (fowl) - laying hens - during rearing period	
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling	
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry	
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling	
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	3
Turkeys - breeding flocks, unspecified - adult - at farm - environmental sample - boot swabs - Control and eradication programmes - industry sampling - census sampling	
Turkeys - meat production flocks - before slaughter - at farm - environmental sample - boot swabs	

Footnote:

The number of "Unit tested" for "industry sampling" is lower than "Unit tested" for "official and industry sampling". Only official samplig is performed within the reported year in following cases:
1. The official sample is taken at the beginning of reported year from the flock before slaughtering.
2. The official sample is taken at the end of reported year from the flock at the age of 24 weeks.

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 4,12:i:-	S. 4,12:l,v:-	S. 6,7:-:1,5	S. Agona
Cattle (bovine animals) - adult cattle over 2 years	NRL for Salmonella	Animal	251	1							
Cattle (bovine animals) - calves (under 1 year)	NRL for Salmonella	Animal	445	23	3	11		2			1
Goats	NRL for Salmonella	Animal	21	0							
Pigs [1)]	NRL for Salmonella	Animal	635	8	3			2		2	
Pigs - breeding animals	NRL for Salmonella	Animal	87	1		1					
Pigs - fattening pigs	NRL for Salmonella	Animal	837	22	2	10		2	1		
Sheep	NRL for Salmonella	Animal	52	0							
Solipeds, domestic	NRL for Salmonella	Animal	42	0							
Cattle (bovine animals) - heifers - Clinical investigations	NRL for Salmonella	Animal	181	0							
Goats - animals over 1 year - Clinical investigations	NRL for Salmonella	Animal	8	0							
Sheep - animals under 1 year (lambs) - in total - Clinical investigations	NRL for Salmonella	Animal	35	0							

	S. Choleraesuis	S. Derby	S. Dublin	S. Goldcoast	S. Infantis	S. Orion	S. Rissen
Cattle (bovine animals) - adult cattle over 2 years					1		
Cattle (bovine animals) - calves (under 1 year)		1	1		1	3	
Goats							

Table Salmonella in other animals

	S. Choleraesuis	S. Derby	S. Dublin	S. Goldcoast	S. Infantis	S. Orion	S. Rissen
Pigs [1)]				1			
Pigs - breeding animals							
Pigs - fattening pigs	2	4					1
Sheep							
Solipeds, domestic							
Cattle (bovine animals) - heifers - Clinical investigations							
Goats - animals over 1 year - Clinical investigations							
Sheep - animals under 1 year (lambs) - in total - Clinical investigations							

Comments:

[1)] pigtets

Footnote:

Data indicated in this table don't relate to sampling in the framework of control and eradication propgrammes. There are results of examinations of individual animals showing clinical signs of the disease in this table.

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Ostriches	NRL for Salmonella	Animal	44	0			
Partridges	NRL for Salmonella	Animal	5	0			
Pheasants	NRL for Salmonella	Animal	123	0			
Pigeons	NRL for Salmonella	Animal	93	3		3	
Quails	NRL for Salmonella	Animal	49	0			

Footnote:

Data indicated in this table don't relate to sampling in the framework of control and eradication propgrammes. There are results of examinations of individual animals showing clinical signs of the disease in this table.

2.1.5 Salmonella in feedingstuffs

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Havana	S. Kedougou
Compound feedingstuffs for cattle - final product - at processing plant - Surveillance - official controls	SVA	Batch	25g	67	0					
Compound feedingstuffs for pigs - final product - at processing plant - Surveillance - official controls	SVA	Batch	25g	182	0					
Compound feedingstuffs for pigs - process control - at feed mill - Surveillance - official controls	SVA	Batch	25g	190	0					
Compound feedingstuffs for poultry (non specified) - final product - at processing plant - Control and eradication programmes	SVA	Batch	25g	227	0					
Compound feedingstuffs for poultry (non specified) - process control - at feed mill - Surveillance - official controls	SVA	Batch	25g	168	0					
Compound feedingstuffs for poultry - broilers - final product - at processing plant - Control and eradication programmes	SVA	Batch	25g	170	0					
Compound feedingstuffs for poultry - broilers - process control - at feed mill - Surveillance - official controls	SVA	Batch	25g	459	0					
Compound feedingstuffs for poultry - laying hens - final product - at processing plant - Control and eradication programmes	SVA	Batch	25g	43	1				1	

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Havana	S. Kedougou
Compound feedingstuffs for poultry - laying hens - process control - at feed mill - Surveillance - official controls	SVA	Batch	25g	179	0					
Compound feedingstuffs for poultry -breeders - final product - at processing plant - Control and eradication programmes	SVA	Batch	25g	5	0					
Compound feedingstuffs for poultry -breeders - process control - at feed mill - Surveillance - official controls	SVA	Batch	25g	40	0					
Pet food - dog snacks (pig ears, chewing bones) - at processing plant - Surveillance - official controls	SVA	Batch	25g	307	2					2

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Havana
Feed material of cereal grain origin - barley derived - at feed mill - Surveillance - official controls	SVA	Batch	25g	237	0				
Feed material of cereal grain origin - maize - at feed mill - Surveillance - official controls	SVA	Batch	25g	115	0				
Feed material of cereal grain origin - maize - derived - at feed mill - Surveillance - official controls	SVA	Batch	25g	25	0				
Feed material of cereal grain origin - other cereal grain derived - at feed mill - Surveillance - official controls	SVA	Batch	25g	13	0				
Feed material of cereal grain origin - wheat derived - at feed mill - Surveillance - official controls	SVA	Batch	25g	463	0				
Feed material of oil seed or fruit origin - other oil seeds derived - at feed mill - Surveillance - official controls	SVA	Batch	25g	62	0				
Feed material of oil seed or fruit origin - rape seed derived - at feed mill - Surveillance - official controls	SVA	Batch	25g	111	4				4
Feed material of oil seed or fruit origin - soya (bean) derived - at feed mill - Surveillance - official controls	SVA	Batch	25g	65	0				
Other feed material - forages and roughages - at feed mill - Surveillance - official controls	SVA	Batch	25g	10	0				
Other feed material - legume seeds and similar products - at feed mill - Surveillance - official controls	SVA	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	S. 6,7:b:-	S. Ohio	S. Oranienburg
Feed material of land animal origin - animal fat - at feed mill - Surveillance - official controls	SVA	Batch	25g	48	0						
Feed material of land animal origin - blood meal - at feed mill - Surveillance - official controls	SVA	Batch	25g	48	0						
Feed material of land animal origin - bone meal - at feed mill - Surveillance - official controls	SVA	Batch	25g	178	0						
Feed material of land animal origin - feather meal - at feed mill - Surveillance - official controls	SVA	Batch	25g	141	0						
Feed material of land animal origin - meat and bone meal - at feed mill - Surveillance - official controls	SVA	Batch	25g	360	0						
Feed material of land animal origin - meat meal - at feed mill - Surveillance - official controls	SVA	Batch	25g	250	0						
Feed material of land animal origin - poultry offal meal - at feed mill - Surveillance - official controls	SVA	Batch	25g	254	0						
Feed material of marine animal origin - fish meal - at feed mill - Surveillance - official controls	SVA	Batch	25g	138	3				1	1	1
Feed material of marine animal origin - fish oil - at feed mill - Surveillance - official controls	SVA	Batch	25g	10	0						
Feed material of marine animal origin - other fish products - at feed mill - Surveillance - official controls	SVA	Batch	25g	5	0						

2.1.6 Salmonella serovars and phagetype distribution

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

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Gallus gallus (fowl) - breeding flocks for broiler production line - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - breeding flocks for egg production line - adult - at farm - environmental sample - boot swabs		Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring
Number of isolates in the laboratory									13		1		445
Number of isolates serotyped	0	0	0	0	0	0	0	3	13	0	1	0	445
Number of isolates per serovar													
S. 6,7:-:1,5													26

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Gallus gallus (fowl) - breeding flocks for broiler production line - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - breeding flocks for egg production line - adult - at farm - environmental sample - boot swabs		Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring
Number of isolates in the laboratory									13		1		445
Number of isolates serotyped	0	0	0	0	0	0	0	3	13	0	1	0	445
Number of isolates per serovar													
S. Agona									1				1
S. Cubana													
S. Enteritidis									5				233
S. Hadar													3
S. Havana													1
S. Indiana													8
S. Infantis													38

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Gallus gallus (fowl) - breeding flocks for broiler production line - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - breeding flocks for egg production line - adult - at farm - environmental sample - boot swabs		Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring
Number of isolates in the laboratory									13		1		445
Number of isolates serotyped	0	0	0	0	0	0	0	3	13	0	1	0	445
Number of isolates per serovar													
S. Isangi													4
S. Kentucky													29
S. Kottbus													2
S. Lille													6
S. London													1
S. Mbandaka									1				6
S. Montevideo									5				7

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Gallus gallus (fowl) - breeding flocks for broiler production line - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - breeding flocks for egg production line - adult - at farm - environmental sample - boot swabs		Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring
Number of isolates in the laboratory									13		1		445
Number of isolates serotyped	0	0	0	0	0	0	0	3	13	0	1	0	445
Number of isolates per serovar													
S. Newport													6
S. Ohio													44
S. Oranienburg													
S. Rissen													1
S. Saintpaul													
S. Schwarzengrund													6
S. Senftenberg													1

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Gallus gallus (fowl) - breeding flocks for broiler production line - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - breeding flocks for egg production line - adult - at farm - environmental sample - boot swabs		Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring
Number of isolates in the laboratory									13		1		445
Number of isolates serotyped	0	0	0	0	0	0	0	3	13	0	1	0	445
Number of isolates per serovar													
S. Tennessee									1				8
S. Typhimurium								3			1		10
S. enterica subsp. enterica, rough													3
Salmonella spp.													1

Table Salmonella serovars in animals

Serovar	Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling	Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling		Turkeys - breeding flocks, unspecified - adult - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Turkeys - meat production flocks - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling	
Sources of isolates	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory		64		4		6	
Number of isolates serotyped	0	64	0	4	0	6	0
Number of isolates per serovar							
S. 6,7:-:1,5							
S. Agona		1					
S. Cubana		1					
S. Enteritidis		53					
S. Hadar							
S. Havana		6					
S. Indiana							

Table Salmonella serovars in animals

Serovar	Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling	Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling		Turkeys - breeding flocks, unspecified - adult - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Turkeys - meat production flocks - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling	
Sources of isolates	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory		64		4		6	
Number of isolates serotyped	0	64	0	4	0	6	0
Number of isolates per serovar							
S. Infantis							
S. Isangi							
S. Kentucky				1		1	
S. Kottbus		1					
S. Lille							
S. London							
S. Mbandaka							

Table Salmonella serovars in animals

Serovar	Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling	Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling		Turkeys - breeding flocks, unspecified - adult - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Turkeys - meat production flocks - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling	
Sources of isolates	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory		64		4		6	
Number of isolates serotyped	0	64	0	4	0	6	0
Number of isolates per serovar							
S. Montevideo		1					
S. Newport				3		2	
S. Ohio							
S. Oranienburg		1					
S. Rissen							
S. Saintpaul						3	
S. Schwarzengrund							

Table Salmonella serovars in animals

Serovar	Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling	Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling		Turkeys - breeding flocks, unspecified - adult - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Turkeys - meat production flocks - before slaughter - at farm - environmental sample - Control and eradication programmes - official and industry sampling	
Sources of isolates	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory		64		4		6	
Number of isolates serotyped	0	64	0	4	0	6	0
Number of isolates per serovar							
S. Senftenberg							
S. Tennessee							
S. Typhimurium							
S. enterica subsp. enterica, rough							
Salmonella spp.							

Table Salmonella serovars in food

Serovar	Meat from bovine animals	Meat from pig	Meat from broilers (Gallus gallus)	Meat from other poultry species	Other products of animal origin	Meat, mixed meat - meat products	Other food
Sources of isolates	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
Number of isolates in the laboratory	6	20	38	18	8	7	8
Number of isolates serotyped	6	20	38	18	8	7	8
Number of isolates per serovar							
S. 4,12:i:-	1	1					
S. 6,7:-:1,5			11		1		
S. 6,7:r:-		1					
S. Agona	2	2	4	1			
S. Brandenburg		1	1				
S. Derby		3				1	
S. Enteritidis	1	1	1		4	1	8
S. Goldcoast		1				2	
S. Indiana			1				
S. Infantis	1	1	2				
S. Kentucky			2		1		

Table Salmonella serovars in food

Serovar	Meat from bovine animals	Meat from pig	Meat from broilers (Gallus gallus)	Meat from other poultry species	Other products of animal origin	Meat, mixed meat - meat products	Other food
Sources of isolates	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
Number of isolates in the laboratory	6	20	38	18	8	7	8
Number of isolates serotyped	6	20	38	18	8	7	8
Number of isolates per serovar							
S. Kottbus			2				
S. London		2					
S. Montevideo			4				
S. Newport			6	13	1		
S. Ohio		1	3				
S. Rissen		1					
S. Saintpaul				3			
S. Typhimurium	1	4	1			3	
S. Zanzibar				1	1		
Salmonella spp.		1					

Table Salmonella Enteritidis phagetypes in animals

Phagetype	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Gallus gallus (fowl) - breeding flocks for broiler production line - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - laying hens - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling
	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring
									5		233		53
	0	0	0	0	0	0	0	0	5	0	233	0	53
1a											7		
1b													6
4													3
4b									3		6		2
6											3		
6c											35		1

Table Salmonella Enteritidis phagetypes in animals

Phagetype	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Gallus gallus (fowl) - breeding flocks for broiler production line - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - laying hens - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling
	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring
									5		233		53
	0	0	0	0	0	0	0	0	5	0	233	0	53
7											1		
8									2		155		31
DT RDNC											1		
PT 13													1
PT 14b											3		
PT 21a											1		

Table Salmonella Enteritidis phagetypes in animals

Phagetype	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Gallus gallus (fowl) - breeding flocks for broiler production line - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - laying hens - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling
	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring
									5		233		53
	0	0	0	0	0	0	0	0	5	0	233	0	53
PT 23											18		7
PT 29											1		
PT 35													1
PT 5c											1		
PT U											1		1

Table Salmonella Enteritidis phagetypes in animals

Phagetype	Gallus gallus (fowl) - laying hens - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling
	Clinical
	0
1a	
1b	
4	
4b	
6	
6c	

Table Salmonella Enteritidis phagetypes in animals

Phagetype	Gallus gallus (fowl) - laying hens - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling
	Clinical
	0
7	
8	
DT RDNC	
PT 13	
PT 14b	
PT 21a	

Table Salmonella Enteritidis phagetypes in animals

Phagetype	Gallus gallus (fowl) - laying hens - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling
	Clinical
	0
PT 23	
PT 29	
PT 35	
PT 5c	
PT U	

Table Salmonella Typhimurium phagetypes in animals

Phagetype	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Gallus gallus (fowl) - breeding flocks for egg production line - adult - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling		Gallus gallus (fowl) - broilers - before slaughter - at farm - environmental sample - boot swabs - Control and eradication programmes - official and industry sampling	
	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
									1		10	
	0	0	0	0	0	0	0	0	1	0	10	0
DT 1									1			
DT 104											3	
DT 120											4	
DT 43											1	
DT 9											2	

Table Salmonella Enteritidis phagetypes in food

Phagetype	Meat from bovine animals	Meat from pig	Meat from broilers (Gallus gallus)	Meat from other poultry species	Other products of animal origin	Meat, mixed meat - meat products	Other food - at processing plant
	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
	1	1	1		4	1	8
	1	1	1	0	4	1	8
1							1
4b		1					
8			1			1	6
PT 21							1
PT 6c					1		
PT 8					3		
U	1						

Table Salmonella Typhimurium phagetypes in food

Phagetype	Meat from bovine animals	Meat from pig	Meat from broilers (Gallus gallus)	Meat from other poultry species	Other products of animal origin	Meat, mixed meat - meat products
	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
	1	4	1			3
	1	4	1	0	0	3
DT 104		2				
DT 120		1				1
DT 193						1
DT 193a	1					
RDNC		1	1			
U 310						1

Table Salmonella Enteritidis phagetypes in humans

Phagetype	Humans	
	Monitoring	Clinical
		625
	0	597
PT 1		6
PT 13		35
PT 13a		50
PT 1b		10
PT 21c		14
PT 4		17
PT 4b		35
PT 56		6
PT 6c		17
PT 8		400
RDNC		7

Table Salmonella Typhimurium phagetypes in humans

Phagetype	Humans	
	Monitoring	Clinical
		147
	0	131
DT 1		3
DT 104		46
DT 120		44
DT 141		15
DT 193		4
DT 193a		3
DT 8		5
RDNC		4
U 302		4
U 311		3

2.1.7 Antimicrobial resistance in Salmonella isolates

A. Antimicrobial resistance in Salmonella in cattle

Sampling strategy used in monitoring

Frequency of the sampling

There is the specific monitoring program for antimicrobial resistence applied in the Czech Republic.

Type of specimen taken

faeces, rectal swabs, large intestine content,

Methods of sampling (description of sampling techniques)

The sampling is random from diseased animals at farm.

Procedures for the selection of isolates for antimicrobial testing

Only one isolate from each serotype per holding and year is examinated.

Methods used for collecting data

Data is collected from laboratories in the NRL.

Laboratory methodology used for identification of the microbial isolates

As the standardized method is certified of CLSI, i.e. Broth dilution metod on standardised EUMVS format

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline
chloramphenicol
ciprofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin

cefotaxim
ceftazidime
ampicillin

Cut-off values used in testing

epidemiological cut-off values recomanded by EUCAST in case of assignation,CLSI,ARBAO

B. Antimicrobial resistance in Salmonella in foodstuff derived from cattle

Sampling strategy used in monitoring

Frequency of the sampling

There is the specific monitoring program for antimicrobial resistence applied in the Czech Republic. This monitoring take place together with monitorig zoonoses in accordance with Directive 2003/99/EC one times a month in slaughterhouses.

Type of specimen taken

The sampling is carry out from carcasses in slaughterhouses. The carcasses of bovine animals are sampled using the non-destructive method with swabs of carcass-100cm2.The alternative method is the dectructive method. Four muscle samples cover 5 cm2 each (total 20 cm2)are sampled before chilling. Sections of tissue cut a slice of 5 cm2 and maximum thickness of 5 mm off the carcass with sterile instrument.

The samples must be aseptically cut and placed aseptically into a sample container in slaughterhouses, transfered to the laboratory.

Methods of sampling (description of sampling techniques)

The sampling is stratified by location slaughterhouses. The sampling is the component of zoonoses monitoring.

Procedures for the selection of isolates for antimicrobial testing

The investigation carry out in all isolated serotype.

Methods used for collecting data

The isolates are collected from laboratories to be tested centrally at the NRL.

Laboratory methodology used for identification of the microbial isolates

As the standardized method is certified of CLSI, i.e. Broth dilution metod on standardised EUMVS format

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline

chloramphenicol

ciprofloxacin

nalidixic acid

trimethoprim

sulfonamide

streptomycin

gentamicin

cefotaxim

ceftazidim

ampicillin

Cut-off values used in testing

epidemiological cut-off values recomanded by EUCAST in case of assignation,CLSI, ARBAO

Control program/mechanisms

The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Allert System for Food and Feed.

Recent actions taken to control the zoonoses

SVA, NIPH and CAFIA carry out monitoring and control programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

C. Antimicrobial resistance in Salmonella in foodstuff derived from pigs

Sampling strategy used in monitoring

Frequency of the sampling

There is the specific monitoring program for antimicrobial resistence applied in the Czech Republic. This monitoring take place in accordance with Directive 2003/99/EC. The sampling of carcasses is carry out one times a month in slaughterhouses.

Type of specimen taken

The same samples are taken in zoonoses monitoring - four tissue samples or swabs from five pig carcases.The pig carcasses are sampled using the non-destructive method with swabs of carcass-100cm2.The alternative method is the destructive method. Four samples of the muscle tissue cover 5 cm2 each (total 20 cm2) before chilling. Pieces of tissue cut a slice of 5 cm2 and maximum thickness of 5 mm off the carcass with sterile instrument.

The samples must be aseptically cut and placed aseptically into a sample container in slaughterhouse, transfered to the laboratory.

Methods of sampling (description of sampling techniques)

The sampling is stratified by location slaughterhouses. The sampling is the component of zoonoses monitoring.

Procedures for the selection of isolates for antimicrobial testing

The investigation carry out in all isolated serotype.

Methods used for collecting data

The isolates are collected from laboratories to be tested centrally at the NRL.

Laboratory methodology used for identification of the microbial isolates

As the standardized method is certified of CLSI, i.e. Broth dilution metod on standardised EUMVS format

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline

chloramphenicol

ciprofloxacin

nalidixic acid

trimethoprim

sulfonamide

streptomycin

gentamicin

cefotaxim

ceftazidime

ampicillin

Cut-off values used in testing

epidemiological cut-off values recomanded by EUCAST in case of assignation,CLSI, ARBAO

Preventive measures in place

Creation and control of HACCP and GHP system.

Control program/mechanisms

The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Allert System for Food and Feed.

Recent actions taken to control the zoonoses

SVA, NIPH and CAFIA carry out monitoring and control programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

D. Antimicrobial resistance in Salmonella in foodstuff derived from poultry

Sampling strategy used in monitoring

Frequency of the sampling

There is the specific monitoring program for antimicrobial resistence applied together with monitoring zoonoses in the Czech Republic. This monitoring take place together with monitorig zoonoses in accordance with Directive 2003/99/EC.The samlptes were taken one times a month in slaughterhouses.

Type of specimen taken

Neck skin samples are taken randomly from 15 carcasses of broilers after chilling. Minimal weight each of samples is 10g.

Methods of sampling (description of sampling techniques)

The sampling is stratified by location slaughterhouses. The sampling is the component of zoonoses monitoring.

Procedures for the selection of isolates for antimicrobial testing

The investigation carry out in all isolated serotype.

Methods used for collecting data

The isolates are collected from laboratories to be tested centrally at the NRL.

Laboratory methodology used for identification of the microbial isolates

As the standardized method is certified of CLSI, i.e. Broth dilution metod on standardised EUMVS format

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline
chloramphenicol
ciprofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin
cefotaxim
ceftazidime
ampicillin

Cut-off values used in testing

epidemiological cut-off values recomanded by EUCAST in case of assignation,CLSI, ARBAO

Control program/mechanisms

The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Allert System for Food and Feed.

Recent actions taken to control the zoonoses

SVA, NIPH and CAFIA carry out monitoring and control programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

E. Antimicrobial resistance in Salmonella in pigs

Sampling strategy used in monitoring

Frequency of the sampling

There is the specific monitoring program for antimicrobial resistence applied in the Czech Republic.

Type of specimen taken

faeces, rectal swabs, large intestine content,

Methods of sampling (description of sampling techniques)

The sampling is random from diseased animals at farm.

Procedures for the selection of isolates for antimicrobial testing

Only one isolate from each serotype per holding and year is examinated.

Methods used for collecting data

Data is collected from laboratories in the NRL.

Laboratory methodology used for identification of the microbial isolates

As the standardized method is certified of CLSI, i.e. Broth dilution metod on standardised EUMVS format

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline
chloramphenicol
ciprofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin
cefotaxim
ceftazidime
ampicillin

Cut-off values used in testing

epidemiological cut-off values recomanded by EUCAST in case of assignation, CLSI, ARBAO

F. Antimicrobial resistance in Salmonella in poultry

Sampling strategy used in monitoring

Frequency of the sampling

There is the specific monitoring program for antimicrobial resistance applied in the Czech Republic.

Type of specimen taken

faeces, cloacal swabs, caecum, organs. Samples in breeding flocks (Gallus gallus) and laying hens producing tabloe eggs are taken in the framework of National control programmes.

Methods of sampling (description of sampling techniques)

1.The sampling is random from the diseased animals at farm.

2. Faeces and dust

Procedures for the selection of isolates for antimicrobial testing

Only one isolate of each serotype per holding and year is examinated.

Methods used for collecting data

The isolates are collected from laboratories to be tested centrally at the NRL.

Laboratory methodology used for identification of the microbial isolates

As the standardized method is certified of CLSI, i.e. Broth dilution metod on standardised EUMVS format

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline

chloramphenicol

ciprofloxacin

nalidixic acid

trimethoprim

sulfonamide

streptomycin

gentamicin

cefotaxim

ceftazidime

ampicillin

Cut-off values used in testing

epidemiological cut-off values recomanded by EUCAST in case of assignation,CLSI, ARBAO

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

Salmonella	Salmonella spp.		S. 6,7:-:1,5		S. Agona		S. Braenderup		S. Indiana	
Isolates out of a monitoring program (yes/no)			yes		yes		yes		yes	
Number of isolates available in the laboratory			1		1		1		1	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol			1	0	1	0	1	0	1	0
Fluoroquinolones - Ciprofloxacin			1	0	1	0	1	0	1	0
Fluoroquinolones - Enrofloxacin			1	0	1	0	1	0	1	0
Quinolones - Nalidixic acid			1	0	1	0	1	1	1	0
Trimethoprim			1	0	1	0	1	0	1	0
Sulfonamides - Sulfonamide			1	1	1	0	1	1	1	0
Aminoglycosides - Streptomycin			1	1	1	0	1	0	1	0
Aminoglycosides - Gentamicin			1	0	1	0	1	0	1	0
Penicillins - Ampicillin			1	0	1	0	1	0	1	0
Tetracyclines - Tetracycline			1	1	1	0	1	1	1	0
Fully sensitive					1	1			1	1
Resistant to 4 antimicrobials			1	1			1	1		
Cephalosporins - Cefotaxim			1	0	1	0	1	0	1	0

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

Salmonella	S. 6,7:-:1,5		S. Enteritidis		S. Montevideo		S. Newport	
Isolates out of a monitoring program (yes/no)	no		no		no		no	
Number of isolates available in the laboratory	9		1		3		5	
Antimicrobials:	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	9	0	1	0	3	0	5	0
Amphenicols - Florfenicol	9	0	1	0			5	0
Tetracyclines - Tetracycline	9	1	1	0	3	0	5	5
Fluoroquinolones - Ciprofloxacin	9	9	1	0	3	0	5	0
Quinolones - Nalidixic acid	9	9	1	0	3	0	5	0
Trimethoprim	9	0	1	0	3	0	5	0
Aminoglycosides - Streptomycin	9	3	1	0	3	0	5	0
Aminoglycosides - Gentamicin	9	0	1	0	3	0	5	0
Penicillins - Ampicillin	9	1	1	0	3	0	5	5
Cephalosporins - Cefotaxim	9	0	1	0	3	0	5	0
Sulfonamides	9	9	1	0	3	0	5	0
Cephalosporins - Ceftazidim	9	0	1	0	3	0	5	0
Fully sensitive			1	1	3	3		
Resistant to 2 antimicrobials							5	5
Resistant to 4 antimicrobials	9	5						
Resistant to >4 antimicrobials	9	4						

Table Antimicrobial susceptibility testing of Salmonella in Meat from broilers (Gallus gallus) - Surveillance - official controls

Salmonella	S. 6,7:-:1,5		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes		yes	
Number of isolates available in the laboratory	1		1	
Antimicrobials:	N	n	N	n
Amphenicols - Chloramphenicol	1	0	1	0
Tetracyclines - Tetracycline	1	1	1	0
Fluoroquinolones - Ciprofloxacin	1	1	1	1
Quinolones - Nalidixic acid	1	1	1	1
Trimethoprim	1	0	1	0
Aminoglycosides - Streptomycin	1	1	1	1
Aminoglycosides - Gentamicin	1	0	1	0
Penicillins - Ampicillin	1	0	1	0
Cephalosporins - Cefotaxim	1	0	1	0
Sulfonamides	1	1	1	1
Cephalosporins - Ceftazidim	1	0	1	0
Resistant to 4 antimicrobials			1	1
Resistant to >4 antimicrobials	1	1		

Table Antimicrobial susceptibility testing of Salmonella in Meat from bovine animals - Monitoring - official sampling

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

Table Antimicrobial susceptibility testing of Salmonella in Meat from bovine animals - Surveillance - official controls

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

Table Antimicrobial susceptibility testing of Salmonella in Meat from pig - Monitoring - official sampling

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

Table Antimicrobial susceptibility testing of Salmonella in Meat from pig - Surveillance - official controls

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

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

Salmonella	S. Newport	
Isolates out of a monitoring program (yes/no)	no	
Number of isolates available in the laboratory	3	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	3	0
Tetracyclines - Tetracycline	3	3
Fluoroquinolones - Ciprofloxacin	3	0
Quinolones - Nalidixic acid	3	0
Trimethoprim	3	0
Aminoglycosides - Streptomycin	3	0
Aminoglycosides - Gentamicin	3	0
Penicillins - Ampicillin	3	3
Cephalosporins - Cefotaxim	3	0
Sulfonamides	3	0
Cephalosporins - Ceftazidim	3	0
Resistant to 2 antimicrobials	3	3

Table Antimicrobial susceptibility testing of Salmonella in Meat from turkey - Surveillance - official controls

Salmonella	S. Newport		S. Saintpaul	
Isolates out of a monitoring program (yes/no)	yes		yes	
Number of isolates available in the laboratory	10		3	
Antimicrobials:	N	n	N	n
Amphenicols - Chloramphenicol	10	0	3	0
Tetracyclines - Tetracycline	10	10	3	1
Fluoroquinolones - Ciprofloxacin	10	0	3	1
Quinolones - Nalidixic acid	10	0	3	1
Trimethoprim	10	0	3	0
Aminoglycosides - Streptomycin	10	0	3	0
Aminoglycosides - Gentamicin	10	0	3	0
Penicillins - Ampicillin	10	10	3	0
Cephalosporins - Cefotaxim	10	0	3	0
Sulfonamides	10	0	3	2
Cephalosporins - Ceftazidim	10	0	3	0
Fully sensitive			3	1
Resistant to 2 antimicrobials	10	10	3	1
Resistant to 3 antimicrobials			3	1

Table Antimicrobial susceptibility testing of Salmonella in Gallus gallus (fowl) - laying hens - Control and eradication programmes

Salmonella	S. Enteritidis		S. Havana	
Isolates out of a monitoring program (yes/no)	no			
Number of isolates available in the laboratory	53		6	
Antimicrobials:	N	n	N	n
Amphenicols - Chloramphenicol	53	0	6	0
Tetracyclines - Tetracycline	53	0	6	0
Fluoroquinolones - Ciprofloxacin	53	0	6	0
Quinolones - Nalidixic acid	53	0	6	0
Trimethoprim	53	0	6	0
Aminoglycosides - Streptomycin	53	0	6	0
Aminoglycosides - Gentamicin	53	0	6	0
Penicillins - Ampicillin	53	1	6	0
Cephalosporins - Cefotaxim	53	0	6	0
Sulfonamides	53	0	6	0
Cephalosporins - Ceftazidim	53	0	6	0
Fully sensitive	53	52	6	6
Resistant to 1 antimicrobial	53	1		

Table Antimicrobial susceptibility testing of Salmonella in Gallus gallus (fowl) - breeding flocks for egg production line - Control and eradication programmes

Salmonella	S. Typhimurium	
Isolates out of a monitoring program (yes/no)	no	
Number of isolates available in the laboratory	1	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	1	0
Tetracyclines - Tetracycline	1	0
Fluoroquinolones - Ciprofloxacin	1	0
Quinolones - Nalidixic acid	1	0
Trimethoprim	1	0
Aminoglycosides - Streptomycin	1	0
Aminoglycosides - Gentamicin	1	0
Penicillins - Ampicillin	1	0
Cephalosporins - Cefotaxim	1	0
Sulfonamides	1	0
Cephalosporins - Ceftazidim	1	0
Fully sensitive	1	1

Table Antimicrobial susceptibility testing of Salmonella in Gallus gallus (fowl) - breeding flocks for broiler production line - Control and eradication programmes

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

Table Antimicrobial susceptibility testing of Salmonella in Gallus gallus (fowl) - unspecified - Clinical investigations

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

Table Antimicrobial susceptibility testing of Salmonella in Gallus gallus (fowl) - broilers - Control and eradication programmes

Salmonella	S. 6,7:-:1,5		S. Enteritidis		S. Indiana		S. Infantis		S. Kentucky		S. Lille		S. Mbandaka		S. Montevideo		S. Newport		S. Ohio		S. Schwarzengrund		S. Tennessee		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	no		no		no		no		no		no		no		no		no		no		no		no		no	
Number of isolates available in the laboratory	26		233		8		38		29		6		6		7		6		44		6		8		10	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	26	0	233	0	8	0	38	0	29	0	6	0	6	0	7	0	6	0	44	0	6	0	8	0	10	2
Tetracyclines - Tetracycline	26	26	233	0	8	0	38	36	29	0	6	0	6	0	7	0	6	6	44	0	6	0	8	0	10	6
Fluoroquinolones - Ciprofloxacin	26	26	233	38	8	0	38	36	29	0	6	0	6	0	7	0	6	0	44	0	6	0	8	0	10	0
Quinolones - Nalidixic acid	26	26	233	38	8	0	38	36	29	0	6	0	6	0	7	0	6	0	44	0	6	0	8	0	10	0
Trimethoprim	26	0	233	0	8	0	38	0	29	0	6	0	6	0	7	0	6	0	44	0	6	0	8	0	10	0
Aminoglycosides - Streptomycin	26	10	233	0	8	0	38	8	29	0	6	0	6	0	7	0	6	0	44	0	6	0	8	0	10	2
Aminoglycosides - Gentamicin	26	0	233	1	8	0	38	0	29	0	6	0	6	0	7	0	6	0	44	0	6	0	8	0	10	0
Penicillins - Ampicillin	26	0	233	1	8	0	38	3	29	2	6	0	6	0	7	0	6	6	44	1	6	0	8	0	10	2
Cephalosporins - Cefotaxim	26	0	233	0	8	0	38	7	29	1	6	0	6	0	7	0	6	0	44	1	6	0	8	0	10	0
Sulfonamides	26	26	233	1	8	0	38	36	29	0	6	0	6	0	7	0	6	0	44	0	6	0	8	0	10	2
Cephalosporins - Ceftazidim	26	0	233	1	8	0	38	0	29	1	6	0	6	0	7	0	6	0	44	1	6	0	8	0	10	0
Fully sensitive			233	193	8	8	38	2	29	27	6	6	6	6	7	7			44	43	6	6	8	8	10	4
Resistant to 1 antimicrobial									29	1															10	4
Resistant to 2 antimicrobials			233	38													6	6								
Resistant to 3 antimicrobials			233	2					29	1									44	1						
Resistant to 4 antimicrobials	26	16					38	21																		
Resistant to >4 antimicrobials	26	10					38	15																	10	2

Table Antimicrobial susceptibility testing of Salmonella in Turkeys - Control and eradication programmes

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

Table Antimicrobial susceptibility testing of Salmonella in Turkeys - Clinical investigations

Salmonella	S. Newport		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes		yes	
Number of isolates available in the laboratory	11		1	
Antimicrobials:	N	n	N	n
Amphenicols - Chloramphenicol	11	0	1	0
Tetracyclines - Tetracycline	11	11	1	0
Fluoroquinolones - Ciprofloxacin	11	0	1	0
Quinolones - Nalidixic acid	11	0	1	0
Trimethoprim	11	0	1	0
Aminoglycosides - Streptomycin	11	0	1	0
Aminoglycosides - Gentamicin	11	0	1	0
Penicillins - Ampicillin	11	11	1	0
Cephalosporins - Cefotaxim	11	0	1	0
Sulfonamides	11	0	1	0
Cephalosporins - Ceftazidim	11	0	1	0
Fully sensitive			1	1
Resistant to 2 antimicrobials	11	11		

Table Antimicrobial susceptibility testing of Salmonella in Pigs - Clinical investigations

Salmonella	S. 4,12:i:-		S. 6,7:-:1,5		S. Derby		S. Enteritidis		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes		yes		yes		yes		yes	
Number of isolates available in the laboratory	4		2		4		2		14	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	4	0	2	0	4	0	2	0	14	11
Tetracyclines - Tetracycline	4	4	2	0	4	1	2	0	14	12
Fluoroquinolones - Ciprofloxacin	4	0	2	0	4	0	2	0	14	4
Quinolones - Nalidixic acid	4	0	2	0	4	0	2	0	14	4
Trimethoprim	4	0	2	0	4	1	2	0	14	3
Aminoglycosides - Streptomycin	4	4	2	0	4	1	2	0	14	10
Aminoglycosides - Gentamicin	4	0	2	0	4	0	2	0	14	0
Penicillins - Ampicillin	4	4	2	0	4	1	2	0	14	12
Cephalosporins - Cefotaxim	4	0	2	0	4	0	2	0	14	0
Sulfonamides	4	4	2	0	4	2	2	0	14	12
Cephalosporins - Ceftazidim	4	0	2	0	4	0	2	0	14	0
Fully sensitive			2	2	4	2	2	2	14	2
Resistant to 2 antimicrobials					4	1				
Resistant to 4 antimicrobials	4	4			4	1			14	1
Resistant to >4 antimicrobials									14	11

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

Salmonella	S. 4,12:i:-		S. Dublin		S. Enteritidis		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes		yes		yes		yes	
Number of isolates available in the laboratory	2		1		3		11	
Antimicrobials:	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	2	0	1	0	3	0	11	5
Tetracyclines - Tetracycline	2	2	1	0	3	0	11	7
Fluoroquinolones - Ciprofloxacin	2	0	1	0	3	0	11	1
Quinolones - Nalidixic acid	2	0	1	0	3	0	11	1
Trimethoprim	2	0	1	0	3	0	11	0
Aminoglycosides - Streptomycin	2	2	1	0	3	0	11	7
Aminoglycosides - Gentamicin	2	0	1	0	3	0	11	0
Penicillins - Ampicillin	2	2	1	0	3	0	11	6
Cephalosporins - Cefotaxim	2	0	1	0	3	0	11	0
Sulfonamides	2	2	1	0	3	0	11	7
Cephalosporins - Ceftazidim	2	0	1	0	3	0	11	0
Fully sensitive			1	1	3	3	11	4
Resistant to 3 antimicrobials							11	1
Resistant to 4 antimicrobials	2	2						
Resistant to >4 antimicrobials							11	6

Table Antimicrobial susceptibility testing of Salmonella in Compound feedingstuffs for poultry - laying hens - final product - at processing plant - Control and eradication programmes

Salmonella	S. Havana	
Isolates out of a monitoring program (yes/no)	no	
Number of isolates available in the laboratory	1	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	1	0
Tetracyclines - Tetracycline	1	0
Fluoroquinolones - Ciprofloxacin	1	0
Quinolones - Nalidixic acid	1	0
Trimethoprim	1	0
Aminoglycosides - Streptomycin	1	0
Aminoglycosides - Gentamicin	1	0
Penicillins - Ampicillin	1	0
Cephalosporins - Cefotaxim	1	0
Sulfonamides	1	0
Cephalosporins - Ceftazidim	1	0
Fully sensitive	1	1

Table Antimicrobial susceptibility testing of Salmonella in Feed material of oil seed or fruit origin - rape seed derived - at feed mill - Surveillance - official controls

Salmonella	S. Havana	
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	0
Fluoroquinolones - Ciprofloxacin	4	0
Quinolones - Nalidixic acid	4	0
Trimethoprim	4	0
Aminoglycosides - Streptomycin	4	0
Aminoglycosides - Gentamicin	4	0
Penicillins - Ampicillin	4	0
Cephalosporins - Cefotaxim	4	0
Sulfonamides	4	0
Cephalosporins - Ceftazidim	4	0
Fully sensitive	4	4

Table Antimicrobial susceptibility testing of S. Enteritidis in Eggs - table eggs - at retail - Survey - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Enteritidis	Eggs - table eggs - at retail - Survey																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Amphenicols - Chloramphenicol	15	1	0																							
Tetracyclines - Tetracycline	14	1	0																				1			
Fluoroquinolones - Ciprofloxacin	15	1	0																							
Quinolones - Nalidixic acid	13	1	0																	1						
Trimethoprim	10	1	0																						1	
Sulfonamides - Sulfonamide	12	1	1	1																						
Aminoglycosides - Streptomycin	11	1	0											1												
Aminoglycosides - Gentamicin	12	1	0																1							
Penicillins - Ampicillin	13	1	0																			1				
Cephalosporins - Cefotaxim	14	1	0										1													

S. Enteritidis	Eggs - table eggs - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol		1					
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin						1	
Quinolones - Nalidixic acid							

Table Antimicrobial susceptibility testing of S. Enteritidis in Eggs - table eggs - at retail - Survey - quantitative data [Diffusion method]

S. Enteritidis	Eggs - table eggs - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Trimethoprim							
Sulfonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							

Table Antimicrobial susceptibility testing of S. Agona in Meat from broilers (Gallus gallus) - at retail - Survey - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Agona	Meat from broilers (Gallus gallus) - at retail - Survey																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Amphenicols - Chloramphenicol	15	1	0																			1				
Tetracyclines - Tetracycline	14	1	0																1							
Fluoroquinolones - Ciprofloxacin	15	1	0																						1	
Fluoroquinolones - Enrofloxacin	16	1	0																						1	
Quinolones - Nalidixic acid	13	1	0																	1						
Trimethoprim	10	1	0																					1		
Sulfonamides - Sulfonamide	19	1	0																	1						
Aminoglycosides - Streptomycin	11	1	0							1																
Aminoglycosides - Gentamicin	15	1	0												1											
Penicillins - Ampicillin	13	1	0													1										
Cephalosporins - Cefotaxim	14	1	1								1															

S. Agona	Meat from broilers (Gallus gallus) - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							

Table Antimicrobial susceptibility testing of S. Agona in Meat from broilers (Gallus gallus) - at retail - Survey - quantitative data [Diffusion method]

S. Agona	Meat from broilers (Gallus gallus) - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Trimethoprim							
Sulfonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Meat from broilers (Gallus gallus) - at retail - Survey - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. 6,7:-:1,5	Meat from broilers (Gallus gallus) - at retail - Survey																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	2																								
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Amphenicols - Chloramphenicol	15	2	0																		1	1				
Tetracyclines - Tetracycline	15	2	2	2																						
Fluoroquinolones - Ciprofloxacin	15	2	0															2								
Fluoroquinolones - Enrofloxacin	16	2	0													2										
Quinolones - Nalidixic acid	13	2	2	2																						
Trimethoprim	10	2	0																			1		1		
Sulfonamides - Sulfonamide	12	2	2	2																						
Aminoglycosides - Streptomycin	12	2	0							2																
Aminoglycosides - Gentamicin	12	2	0													1	1									
Penicillins - Ampicillin	13	2	0											1					1							
Cephalosporins - Cefotaxim	14	2	1							1			1													

S. 6,7:-:1,5	Meat from broilers (Gallus gallus) - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	2						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Meat from broilers (Gallus gallus) - at retail - Survey - quantitative data [Diffusion method]

S. 6,7:-:1,5	Meat from broilers (Gallus gallus) - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	2						
Antimicrobials:	29	30	31	32	33	34	>=35
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Trimethoprim							
Sulfonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							

Table Antimicrobial susceptibility testing of S. Braenderup in Meat from broilers (Gallus gallus) - at retail - Survey - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Braenderup	Meat from broilers (Gallus gallus) - at retail - Survey																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Amphenicols - Chloramphenicol	15	1	0																			1				
Fluoroquinolones - Ciprofloxacin	15	1	0																1							
Fluoroquinolones - Enrofloxacin	16	1	0														1									
Quinolones - Nalidixic acid	13	1	1	1																						
Penicillins - Ampicillin	13	1	0											1												
Cephalosporins - Cefotaxim	14	1	1								1															

S. Braenderup	Meat from broilers (Gallus gallus) - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							
Fluoroquinolones - Ciprofloxacin							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							

Table Antimicrobial susceptibility testing of S. Indiana in Meat from broilers (Gallus gallus) - at retail - Survey - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Indiana	Meat from broilers (Gallus gallus) - at retail - Survey																									
Isolates out of a monitoring program (yes/no)	yes																									
Number of isolates available in the laboratory	1																									
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Amphenicols - Chloramphenicol	15	1	0																					1		
Tetracyclines - Tetracycline	14	1	0																1							
Fluoroquinolones - Ciprofloxacin	15	1	0																					1		
Fluoroquinolones - Enrofloxacin	16	1	0																		1					
Quinolones - Nalidixic acid	13	1	0																1							
Trimethoprim	10	1	0																					1		
Sulfonamides - Sulfonamide	12	1	0																					1		
Aminoglycosides - Streptomycin	11	1	0							1																
Aminoglycosides - Gentamicin	12	1	0													1										
Penicillins - Ampicillin	13	1	0															1								
Cephalosporins - Cefotaxim	27	1	1							1																

S. Indiana	Meat from broilers (Gallus gallus) - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							

Table Antimicrobial susceptibility testing of S. Indiana in Meat from broilers (Gallus gallus) - at retail - Survey - quantitative data [Diffusion method]

S. Indiana	Meat from broilers (Gallus gallus) - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Trimethoprim							
Sulfonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							

Table Antimicrobial susceptibility testing of S. Kentucky in Meat from poultry, unspecified - at retail - Survey - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Kentucky	Meat from poultry, unspecified - at retail - Survey																									
Isolates out of a monitoring program (yes/no)	yes																									
Number of isolates available in the laboratory	1																									
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Amphenicols - Chloramphenicol	15	1	0																			1				
Tetracyclines - Tetracycline	14	1	0														1									
Fluoroquinolones - Ciprofloxacin	15	1	0																					1		
Fluoroquinolones - Enrofloxacin	16	1	0																					1		
Quinolones - Nalidixic acid	13	1	0														1									
Trimethoprim	10	1	0																			1				
Sulfonamides - Sulfonamide	12	1	0															1								
Aminoglycosides - Streptomycin	11	1	0							1																
Aminoglycosides - Gentamicin	12	1	0														1									
Penicillins - Ampicillin	13	1	0																		1					
Cephalosporins - Cefotaxim	14	1	0									1														

S. Kentucky	Meat from poultry, unspecified - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							

Table Antimicrobial susceptibility testing of S. Kentucky in Meat from poultry, unspecified - at retail - Survey - quantitative data [Diffusion method]

S. Kentucky	Meat from poultry, unspecified - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Trimethoprim							
Sulfonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							

Table Antimicrobial susceptibility testing of S. Virchow in Meat from poultry, unspecified - at retail - Survey - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Virchow	Meat from poultry, unspecified - at retail - Survey																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Amphenicols - Chloramphenicol	15	1	0																		1					
Tetracyclines - Tetracycline	14	1	0																1							
Fluoroquinolones - Ciprofloxacin	15	1	0																	1						
Fluoroquinolones - Enrofloxacin	22	1	0																1							
Quinolones - Nalidixic acid	13	1	1	1																						
Trimethoprim	10	1	0																				1			
Sulfonamides - Sulfonamide	12	1	0																	1						
Aminoglycosides - Streptomycin	11	1	0							1																
Aminoglycosides - Gentamicin	15	1	0														1									
Penicillins - Ampicillin	13	1	0													1										
Cephalosporins - Cefotaxim	14	1	0									1														

S. Virchow	Meat from poultry, unspecified - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							

Table Antimicrobial susceptibility testing of S. Virchow in Meat from poultry, unspecified - at retail - Survey - quantitative data [Diffusion method]

S. Virchow	Meat from poultry, unspecified - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Trimethoprim							
Sulfonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							

Table Antimicrobial susceptibility testing of S. Newport in Meat from poultry, unspecified - at retail - Survey - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Newport	Meat from poultry, unspecified - at retail - Survey																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Amphenicols - Chloramphenicol	15	1	0																						1	
Tetracyclines - Tetracycline	14	1	1	1																						
Fluoroquinolones - Ciprofloxacin	15	1	0																						1	
Fluoroquinolones - Enrofloxacin	16	1	0																							1
Quinolones - Nalidixic acid	13	1	0																1							
Trimethoprim	10	1	0																		1					
Sulfonamides - Sulfonamide	6	1	0															1								
Aminoglycosides - Streptomycin	11	1	0								1															
Aminoglycosides - Gentamicin	12	1	0													1										
Penicillins - Ampicillin	13	1	1	1																						
Cephalosporins - Cefotaxim	14	1	0									1														

S. Newport	Meat from poultry, unspecified - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							

Table Antimicrobial susceptibility testing of S. Newport in Meat from poultry, unspecified - at retail - Survey - quantitative data [Diffusion method]

S. Newport	Meat from poultry, unspecified - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Trimethoprim							
Sulfonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							

Table Antimicrobial susceptibility testing of S. Enteritidis in Other products of animal origin - at retail - Survey - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Enteritidis	Other products of animal origin - at retail - Survey																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	3																								
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Amphenicols - Chloramphenicol	15	3	0																	1		1			1	
Tetracyclines - Tetracycline	14	3	0														1	2								
Fluoroquinolones - Ciprofloxacin	15	3	0																				1	2		
Fluoroquinolones - Enrofloxacin	16	3	0																		2		1			
Quinolones - Nalidixic acid	13	3	0														1	1	1							
Sulfonamides - Sulfonamide	12	3	0											1	1		1									
Aminoglycosides - Streptomycin	11	3	0							1	2															
Aminoglycosides - Gentamicin	15	3	0										1			1	1									
Penicillins - Ampicillin	13	3	0															1	1			1				
Cephalosporins - Cefotaxim	14	3	1					1				1	1													

S. Enteritidis	Other products of animal origin - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	3						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							
Fluoroquinolones - Enrofloxacin							

Table Antimicrobial susceptibility testing of S. Enteritidis in Other products of animal origin - at retail - Survey - quantitative data [Diffusion method]

S. Enteritidis	Other products of animal origin - at retail - Survey						
Isolates out of a monitoring program (yes/no)	yes						
Number of isolates available in the laboratory	3						
Antimicrobials:	29	30	31	32	33	34	>=35
Quinolones - Nalidixic acid							
Sulfonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							

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

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

S. Enteritidis	Meat from broilers (Gallus gallus) - Monitoring - official 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										2	64
Amphenicols - Florfenicol	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														
Aminoglycosides - Streptomycin	16	1	0											1										
Aminoglycosides - Gentamicin		1	0							1														
Penicillins - Ampicillin	4	1	0									1												
Cephalosporins - Cefotaxim	0.5	1	0					1																
Sulfonamides	256	1	0															1						
Cephalosporins - Ceftazidim	2	1	0							1														

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Meat from broilers (Gallus gallus) - Monitoring - official sampling - quantitative data [Dilution method]

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

S. 6,7:-:1,5	Meat from broilers (Gallus gallus) - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	9																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	9	0											3	6										
Amphenicols - Florfenicol	16	8	0											3	5										
Tetracyclines - Tetracycline	8	9	9														9								
Fluoroquinolones - Ciprofloxacin	0.06	9	9						1	7			1												
Quinolones - Nalidixic acid	16	9	9														9								
Trimethoprim	2	8	0							6	1	1													
Aminoglycosides - Streptomycin	32	9	3												3	3	3								
Aminoglycosides - Gentamicin	2	9	0						4	3	2														
Penicillins - Ampicillin	4	9	1								1	2	5			1									
Cephalosporins - Cefotaxim	0.5	9	0					5	2	2															
Sulfonamides	256	9	9																		9				
Cephalosporins - Ceftazidim	2	9	0							6	3														

Table Antimicrobial susceptibility testing of S. Newport in Meat from broilers (Gallus gallus) - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Newport	Meat from broilers (Gallus gallus) - Monitoring - official sampling																								
Isolates out of a monitoring program (yes/no)	no																								
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											
Amphenicols - Florfenicol	16	5	0										2	3											
Tetracyclines - Tetracycline	8	5	5														5								
Fluoroquinolones - Ciprofloxacin	0.06	5	0			5																			
Quinolones - Nalidixic acid	16	5	0										4	1											
Trimethoprim	2	5	0							5															
Aminoglycosides - Streptomycin	32	5	0											2	3										
Aminoglycosides - Gentamicin	4	5	0							4		1													
Penicillins - Ampicillin	4	5	5														5								
Cephalosporins - Cefotaxim	0.5	5	0				1	1	3																
Sulfonamides	256	5	0													1	3	1							
Cephalosporins - Ceftazidim	2	5	0						2	2	1														

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from broilers (Gallus gallus) - Surveillance - official controls - quantitative data [Dilution method]

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

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

Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from bovine animals - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Enteritidis	Meat from bovine animals - Monitoring - official 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															
Aminoglycosides - Streptomycin	32	1	0										1												
Aminoglycosides - Gentamicin	2	1	0							1															
Penicillins - Ampicillin	4	1	1													1									
Cephalosporins - Cefotaxim	0.5	1	0					1																	
Sulfonamides	256	1	0														1								
Cephalosporins - Ceftazidim	2	1	0							1															

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from bovine animals - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Typhimurium	Meat from bovine animals - Monitoring - official 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	0			1																			
Quinolones - Nalidixic acid	16	1	0										1												
Trimethoprim	2	1	1													1									
Aminoglycosides - Streptomycin	32	1	0												1										
Aminoglycosides - Gentamicin	2	1	0							1															
Penicillins - Ampicillin	4	1	1													1									
Cephalosporins - Cefotaxim		1	0					1																	
Sulfonamides		1	1																		1				
Cephalosporins - Ceftazidim	2	1	0							1															

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from pig - Monitoring - official sampling - quantitative data [Dilution method]

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

S. Typhimurium	Meat from pig - Monitoring - official 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	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														
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																		
Sulfonamides	256	1	1																		1				
Cephalosporins - Ceftazidim	2	1	0						1																

Table Antimicrobial susceptibility testing of S. Derby in Meat from pig - Monitoring - official sampling - quantitative data [Dilution method]

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

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

Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from pig - Surveillance - official controls - quantitative data [Dilution method]

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

S. Enteritidis	Meat from pig - Surveillance - official controls																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	1																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0											1										
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														
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																
Sulfonamides	256	1	0															1						
Cephalosporins - Ceftazidim	2	1	0							1														

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from pig - Surveillance - official controls - quantitative data [Dilution method]

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

S. Typhimurium	Meat from pig - Surveillance - official controls																							
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	2										1				2							
Tetracyclines - Tetracycline		3	2									1					2							
Fluoroquinolones - Ciprofloxacin	0.06	3	0		1	2																		
Quinolones - Nalidixic acid	16	3	0										1	2										
Trimethoprim	2	3	0							3														
Aminoglycosides - Streptomycin	32	3	2												1			2						
Aminoglycosides - Gentamicin	2	3	0							3														
Penicillins - Ampicillin	4	3	2									1				2								
Cephalosporins - Cefotaxim	0.5	3	0				2	1																
Sulfonamides	256	3	2														1				2			
Cephalosporins - Ceftazidim	2	3	0						2	1														

Table Antimicrobial susceptibility testing of S. Newport in Meat from turkey - Monitoring - official sampling - quantitative data [Dilution method]

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

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

Table Antimicrobial susceptibility testing of S. Newport in Meat from turkey - Surveillance - official controls - quantitative data [Dilution method]

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

S. Newport	Meat from turkey - Surveillance - official controls																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	10																							
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	10	0									3	1	5	1									
Tetracyclines - Tetracycline	8	10	10														10							
Fluoroquinolones - Ciprofloxacin	0.06	10	0		2	8																		
Quinolones - Nalidixic acid	16	10	0										8	2										
Trimethoprim	2	10	0							10														
Aminoglycosides - Streptomycin	32	10	0											1	7	2								
Aminoglycosides - Gentamicin	2	10	0							3	6	1												
Penicillins - Ampicillin	4	10	10													10								
Cephalosporins - Cefotaxim	0.5	10	0				1	8	1															
Sulfonamides	256	10	0													3	6	1						
Cephalosporins - Ceftazidim	2	10	0						1	9														

Table Antimicrobial susceptibility testing of S. Saintpaul in Meat from turkey - Surveillance - official controls - quantitative data [Dilution method]

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

S. Saintpaul	Meat from turkey - Surveillance - official controls																								
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											1	2										
Tetracyclines - Tetracycline	8	3	1										2				1								
Fluoroquinolones - Ciprofloxacin	0.06	3	1			2			1																
Quinolones - Nalidixic acid	16	3	1										2				1								
Trimethoprim	2	3	0							3															
Aminoglycosides - Streptomycin	32	3	0												2	1									
Aminoglycosides - Gentamicin	2	3	0								3														
Penicillins - Ampicillin	4	3	0									2	1												
Cephalosporins - Cefotaxim	0.5	3	0					2		1															
Sulfonamides	256	3	2														1				2				
Cephalosporins - Ceftazidim	2	3	0						1	2															

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - laying hens - Control and eradication programmes - quantitative data [Dilution method]

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

S. Enteritidis	Gallus gallus (fowl) - laying hens - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	53																								
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	53	0										9	41	3										
Tetracyclines - Tetracycline	8	53	0								1	45	7												
Fluoroquinolones - Ciprofloxacin	0.06	53	0		6	46	1																		
Quinolones - Nalidixic acid	16	53	0										35	17	1										
Trimethoprim		53	0							51	1	1													
Aminoglycosides - Streptomycin	32	53	0									2	43	8											
Aminoglycosides - Gentamicin	2	53	0						10	39	4														
Penicillins - Ampicillin	4	53	1							1	7	38	6			1									
Cephalosporins - Cefotaxim	0.5	53	0				11	37	4	1															
Sulfonamides	256	53	0												2	7	37	7							
Cephalosporins - Ceftazidim	2	53	0						30	21	1	1													

Table Antimicrobial susceptibility testing of S. Havana in Gallus gallus (fowl) - laying hens - Control and eradication programmes - quantitative data [Dilution method]

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

S. Havana	Gallus gallus (fowl) - laying hens - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
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	0									5	1												
Fluoroquinolones - Ciprofloxacin	0.06	6	0		5	1																			
Quinolones - Nalidixic acid	16	6	0										6												
Trimethoprim	2	6	0							6															
Aminoglycosides - Streptomycin	32	6	0										5	1											
Aminoglycosides - Gentamicin	2	6	0						6																
Penicillins - Ampicillin	4	6	0								5		1												
Cephalosporins - Cefotaxim	0.5	6	0				4	2																	
Sulfonamides	256	6	0														5	1							
Cephalosporins - Ceftazidim	2	6	0						6																

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - breeding flocks for egg production line - Control and eradication programmes - quantitative data [Dilution method]

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

S. Typhimurium	Gallus gallus (fowl) - breeding flocks for egg production line - Control and eradication programmes																							
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		1	0							1														
Aminoglycosides - Streptomycin	32	1	0											1										
Aminoglycosides - Gentamicin	2	1	0							1														
Penicillins - Ampicillin	4	1	0								1													
Cephalosporins - Cefotaxim	2	1	0							1														
Sulfonamides	256	1	0														1							
Cephalosporins - Ceftazidim	2	1	0						1															

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - breeding flocks for broiler production line - Control and eradication programmes - quantitative data [Dilution method]

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

S. Enteritidis	Gallus gallus (fowl) - breeding flocks for broiler production line - Control and eradication programmes																							
Isolates out of a monitoring program (yes/no)	no																							
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		2	3																		
Quinolones - Nalidixic acid	16	5	0										1	4										
Trimethoprim		5	0							5														
Aminoglycosides - Streptomycin	32	5	0										5											
Aminoglycosides - Gentamicin	2	5	0						2	3														
Penicillins - Ampicillin	4	5	0									3	2											
Cephalosporins - Cefotaxim	0.5	5	0				2	3																
Sulfonamides	256	5	0														5							
Cephalosporins - Ceftazidim	2	5	0						2	3														

Table Antimicrobial susceptibility testing of S. Montevideo in Gallus gallus (fowl) - breeding flocks for broiler production line - Control and eradication programmes - quantitative data [Dilution method]

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

S. Montevideo	Gallus gallus (fowl) - breeding flocks for broiler production line - Control and eradication programmes																							
Isolates out of a monitoring program (yes/no)	no																							
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										2	3										
Fluoroquinolones - Ciprofloxacin	0.06	5	0			1	4																	
Quinolones - Nalidixic acid	16	5	0										1	1	3									
Trimethoprim	2	5	0							5														
Aminoglycosides - Streptomycin	32	5	0											1		4								
Aminoglycosides - Gentamicin	2	5	0							1	4													
Penicillins - Ampicillin	4	5	3									1	1	3										
Cephalosporins - Cefotaxim	0.5	5	3					1	1				3											
Sulfonamides	256	5	0													1	3	1						
Cephalosporins - Ceftazidim	2	5	3						1	1					3									

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - unspecified - Clinical investigations - quantitative data [Dilution method]

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

S. Enteritidis	Gallus gallus (fowl) - unspecified - Clinical investigations																								
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	8	6	0									1	4	1											
Fluoroquinolones - Ciprofloxacin	0.06	6	0			4	2																		
Quinolones - Nalidixic acid	16	6	0										4	2											
Trimethoprim		6	0							5	1														
Aminoglycosides - Streptomycin	32	6	0										5	1											
Aminoglycosides - Gentamicin	2	6	0							3	3														
Penicillins - Ampicillin	4	6	0								1	5													
Cephalosporins - Cefotaxim	0.5	6	0					5	1																
Sulfonamides	256	6	0														4	2							
Cephalosporins - Ceftazidim	2	6	0							6															

Table Antimicrobial susceptibility testing of S. Gallinarum in Gallus gallus (fowl) - unspecified - Clinical investigations - quantitative data [Dilution method]

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

S. Gallinarum	Gallus gallus (fowl) - unspecified - Clinical investigations																								
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										1	3											
Tetracyclines - Tetracycline	8	4	0									3		1											
Fluoroquinolones - Ciprofloxacin	0.06	4	0			3	1																		
Quinolones - Nalidixic acid	16	4	0										1	3											
Trimethoprim		4	0							3	1														
Aminoglycosides - Streptomycin	16	4	0													4									
Aminoglycosides - Gentamicin		4	0						1	3															
Penicillins - Ampicillin	4	4	0							1	1	2													
Cephalosporins - Cefotaxim		4	0					2	2																
Sulfonamides		4	0												2		2								
Cephalosporins - Ceftazidim	2	4	0						1	1	2														

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Enteritidis	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	233																								
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	233	0										52	176	5										
Tetracyclines - Tetracycline	8	233	0								3	167	63												
Fluoroquinolones - Ciprofloxacin	0.06	233	38		35	153	7	23	14	1															
Quinolones - Nalidixic acid	16	233	38										158	37			38								
Trimethoprim		233	0							223	10														
Aminoglycosides - Streptomycin	32	233	1										179	51	2		1								
Aminoglycosides - Gentamicin	2	233	1						32	178	22					1									
Penicillins - Ampicillin	4	233	1								21	199	12			1									
Cephalosporins - Cefotaxim	0.5	233	1				29	196	7				1												
Sulfonamides	256	233	1												6	25	165	36			1				
Cephalosporins - Ceftazidim	2	233	1						126	104	2				1										

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Typhimurium	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	10																								
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	10	2										1	5	2		2								
Tetracyclines - Tetracycline	8	10	6										4			2	4								
Fluoroquinolones - Ciprofloxacin	0.06	10	0			9	1																		
Quinolones - Nalidixic acid	16	10	0										7	3											
Trimethoprim		10	0							10															
Aminoglycosides - Streptomycin		10	2											1	6	1	2								
Aminoglycosides - Gentamicin	2	10	0							5	4	1													
Penicillins - Ampicillin		10	2						1			7				2									
Cephalosporins - Cefotaxim	0.5	10	0				2	4	3	1															
Sulfonamides	256	10	2													2	4	2			2				
Cephalosporins - Ceftazidim	2	10	0						4	6															

Table Antimicrobial susceptibility testing of S. Indiana in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Indiana	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	8																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	8	0										2	6											
Tetracyclines - Tetracycline	8	8	0									5	3												
Fluoroquinolones - Ciprofloxacin	0.06	8	0			8																			
Quinolones - Nalidixic acid	16	8	0										8												
Trimethoprim	2	8	0							8															
Aminoglycosides - Streptomycin	32	8	0											1	7										
Aminoglycosides - Gentamicin	2	8	0							8															
Penicillins - Ampicillin	4	8	0								5	3													
Cephalosporins - Cefotaxim	0.5	8	0				5	3																	
Sulfonamides		8	0												4	4									
Cephalosporins - Ceftazidim	2	8	0						8																

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Infantis	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	38																								
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	38	0											4	34										
Tetracyclines - Tetracycline	8	38	36									1	1				36								
Fluoroquinolones - Ciprofloxacin	0.06	38	36			2			3	10	20	1	2												
Quinolones - Nalidixic acid	16	38	36										2				36								
Trimethoprim		38	0							31	7														
Aminoglycosides - Streptomycin	32	38	8											1	2	27	7	1							
Aminoglycosides - Gentamicin	2	38	0						22	15	1														
Penicillins - Ampicillin	4	38	2								4	12	20			2									
Cephalosporins - Cefotaxim	2	38	7					2	15	14	7														
Sulfonamides		38	36														1	1			36				
Cephalosporins - Ceftazidim	2	38	0							17	21														

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. 6,7:-:1,5	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	26																								
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	26	0											8	18										
Tetracyclines - Tetracycline	8	26	26														26								
Fluoroquinolones - Ciprofloxacin	0.06	26	26					1	2	12	9	2													
Quinolones - Nalidixic acid	16	26	26														26								
Trimethoprim		26	0							21	3	2													
Aminoglycosides - Streptomycin	32	26	10											1	2	13	10								
Aminoglycosides - Gentamicin	4	26	0						13	12	1														
Penicillins - Ampicillin		26	0								2	9	15												
Cephalosporins - Cefotaxim	0.5	26	0					7	14	5															
Sulfonamides	256	26	26																		26				
Cephalosporins - Ceftazidim	2	26	0							12	14														

Table Antimicrobial susceptibility testing of S. Kentucky in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Kentucky	Gallus gallus (fowl) - broilers - Control and eradication programmes																							
Isolates out of a monitoring program (yes/no)	no																							
Number of isolates available in the laboratory	29																							
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	29	0										15	14										
Tetracyclines - Tetracycline	8	29	0									22	7											
Fluoroquinolones - Ciprofloxacin	0.06	29	0		2	26	1																	
Quinolones - Nalidixic acid	16	29	0										16	13										
Trimethoprim		29	0							29														
Aminoglycosides - Streptomycin	32	29	0											4	25									
Aminoglycosides - Gentamicin	2	29	0						1	12	16													
Penicillins - Ampicillin	4	29	2									27				2								
Cephalosporins - Cefotaxim	0.5	29	1					27	1				1											
Sulfonamides	256	29	0													2	20	6	1					
Cephalosporins - Ceftazidim	2	29	1							25	3				1									

Table Antimicrobial susceptibility testing of S. Lille in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Lille	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
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	3	1										
Tetracyclines - Tetracycline	8	6	0									3	3												
Fluoroquinolones - Ciprofloxacin	0.06	6	0		1	5																			
Quinolones - Nalidixic acid	16	6	0										4	2											
Trimethoprim		6	0							6															
Aminoglycosides - Streptomycin	32	6	0											5	1										
Aminoglycosides - Gentamicin	2	6	0						1	4	1														
Penicillins - Ampicillin	4	6	0								3	3													
Cephalosporins - Cefotaxim	0.5	6	0				1	4	1																
Sulfonamides	256	6	0												2	3	1								
Cephalosporins - Ceftazidim	2	6	0						1	3	2														

Table Antimicrobial susceptibility testing of S. Mbandaka in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Mbandaka	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
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									6													
Fluoroquinolones - Ciprofloxacin	0.06	6	0			5	1																		
Quinolones - Nalidixic acid	16	6	0										6												
Trimethoprim	2	6	0							6															
Aminoglycosides - Streptomycin	32	6	0												6										
Aminoglycosides - Gentamicin		6	0								6														
Penicillins - Ampicillin	4	6	0								1	5													
Cephalosporins - Cefotaxim	0.5	6	0					4	2																
Sulfonamides	256	6	0														5	1							
Cephalosporins - Ceftazidim	2	6	0							5	1														

Table Antimicrobial susceptibility testing of S. Montevideo in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Montevideo	Gallus gallus (fowl) - broilers - Control and eradication programmes																							
Isolates out of a monitoring program (yes/no)	no																							
Number of isolates available in the laboratory	7																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	7	0										2	4	1									
Tetracyclines - Tetracycline	8	7	0									4	2	1										
Fluoroquinolones - Ciprofloxacin	0.06	7	0			7																		
Quinolones - Nalidixic acid	16	7	0										6	1										
Trimethoprim		7	0							7														
Aminoglycosides - Streptomycin	32	7	0											3	4									
Aminoglycosides - Gentamicin		7	0							3	3	1												
Penicillins - Ampicillin	4	7	0								1	5	1											
Cephalosporins - Cefotaxim	0.5	7	0				3	3	1															
Sulfonamides	256	7	0													4	2	1						
Cephalosporins - Ceftazidim	2	7	0						5	2														

Table Antimicrobial susceptibility testing of S. Newport in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Newport	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
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	8	6	6														6								
Fluoroquinolones - Ciprofloxacin	0.06	6	0		1	5																			
Quinolones - Nalidixic acid	16	6	0										6												
Trimethoprim		6	0							6															
Aminoglycosides - Streptomycin	32	6	0											1	3	2									
Aminoglycosides - Gentamicin	2	6	0						1	4	1														
Penicillins - Ampicillin	4	6	6													6									
Cephalosporins - Cefotaxim	0.5	6	0				1	3	2																
Sulfonamides	256	6	0														3	1	2						
Cephalosporins - Ceftazidim	2	6	0						1	5															

Table Antimicrobial susceptibility testing of S. Ohio in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Ohio	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	44																								
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	44	0										1	26	17										
Tetracyclines - Tetracycline	8	44	0									11	33												
Fluoroquinolones - Ciprofloxacin	0.06	44	0		2	42																			
Quinolones - Nalidixic acid	16	44	0										40	4											
Trimethoprim		44	0							43	1														
Aminoglycosides - Streptomycin	32	44	0										6	34	4										
Aminoglycosides - Gentamicin	2	44	0						4	34	6														
Penicillins - Ampicillin	4	44	1								13	29	1			1									
Cephalosporins - Cefotaxim	0.5	44	1				1	37	5				1												
Sulfonamides		44	0												1	9	25	9							
Cephalosporins - Ceftazidim	2	44	1						4	33	6		1												

Table Antimicrobial susceptibility testing of S. Schwarzengrund in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Schwarzengrund	Gallus gallus (fowl) - broilers - Control and eradication programmes																							
Isolates out of a monitoring program (yes/no)	no																							
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											6										
Tetracyclines - Tetracycline	8	6	0									3	3											
Fluoroquinolones - Ciprofloxacin	0.06	6	0			6																		
Quinolones - Nalidixic acid	16	6	0										6											
Trimethoprim		6	0							6														
Aminoglycosides - Streptomycin	32	6	0												6									
Aminoglycosides - Gentamicin	4	6	0							5	1													
Penicillins - Ampicillin	4	6	0								4	2												
Cephalosporins - Cefotaxim	0.5	6	0				5	1																
Sulfonamides	256	6	0													6								
Cephalosporins - Ceftazidim	2	6	0						5	1														

Table Antimicrobial susceptibility testing of S. Tennessee in Gallus gallus (fowl) - broilers - Control and eradication programmes - quantitative data [Dilution method]

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

S. Tennessee	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	8																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	8	0										1	4	3										
Tetracyclines - Tetracycline	8	8	0									5	3												
Fluoroquinolones - Ciprofloxacin	0.06	8	0			8																			
Quinolones - Nalidixic acid	16	8	0										6	2											
Trimethoprim		8	0							7	1														
Aminoglycosides - Streptomycin	16	8	0											1	5	2									
Aminoglycosides - Gentamicin	2	8	0							3	5														
Penicillins - Ampicillin	4	8	0								2	6													
Cephalosporins - Cefotaxim	0.5	8	0					8																	
Sulfonamides	256	8	0														7	1							
Cephalosporins - Ceftazidim	2	8	0							8															

Table Antimicrobial susceptibility testing of S. Kentucky in Turkeys - Control and eradication programmes - quantitative data [Dilution method]

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

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

Table Antimicrobial susceptibility testing of S. Newport in Turkeys - Control and eradication programmes - quantitative data [Dilution method]

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

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

Table Antimicrobial susceptibility testing of S. Saintpaul in Turkeys - Control and eradication programmes - quantitative data [Dilution method]

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

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

Table Antimicrobial susceptibility testing of S. Typhimurium in Turkeys - Clinical investigations - quantitative data [Dilution method]

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

S. Typhimurium	Turkeys - Clinical investigations																								
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															
Aminoglycosides - Streptomycin	32	1	0												1										
Aminoglycosides - Gentamicin		1	0						1																
Penicillins - Ampicillin	4	1	0										1												
Cephalosporins - Cefotaxim	0.5	1	0					1																	
Sulfonamides	256	1	0														1								
Cephalosporins - Ceftazidim	2	1	0							1															

Table Antimicrobial susceptibility testing of S. Newport in Turkeys - Clinical investigations - quantitative data [Dilution method]

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

S. Newport	Turkeys - Clinical investigations																							
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	0									1	3	7										
Tetracyclines - Tetracycline	8	11	11														11							
Fluoroquinolones - Ciprofloxacin	0.06	11	0			11																		
Quinolones - Nalidixic acid	16	11	0										9	2										
Trimethoprim		11	0							11														
Aminoglycosides - Streptomycin	32	11	0											3	7	1								
Aminoglycosides - Gentamicin	4	11	0							6	5													
Penicillins - Ampicillin		11	11													11								
Cephalosporins - Cefotaxim	0.5	11	0				2	7	2															
Sulfonamides	256	11	0													1	5	5						
Cephalosporins - Ceftazidim	2	11	0							11														

Table Antimicrobial susceptibility testing of S. Enteritidis in Pigs - Clinical investigations - quantitative data [Dilution method]

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

S. Enteritidis	Pigs - Clinical investigations																							
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	0		2																			
Quinolones - Nalidixic acid	16	2	0										1	1										
Trimethoprim	2	2	0							2														
Aminoglycosides - Streptomycin	32	2	0										1	1										
Aminoglycosides - Gentamicin	2	2	0							2														
Penicillins - Ampicillin	4	2	0									2												
Cephalosporins - Cefotaxim	0.5	2	0				1	1																
Sulfonamides		2	0													1	1							
Cephalosporins - Ceftazidim	2	2	0						2															

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

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

S. Typhimurium	Pigs - Clinical investigations																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	14																							
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	14	11										2	1			11							
Tetracyclines - Tetracycline	8	14	12									1	1				12							
Fluoroquinolones - Ciprofloxacin	0.06	14	4		3	5	2	1	3															
Quinolones - Nalidixic acid	16	14	4										7	2	1		4							
Trimethoprim		14	3							10	1					3								
Aminoglycosides - Streptomycin	32	14	10												2	2	5	5						
Aminoglycosides - Gentamicin	2	14	0						2	8	4													
Penicillins - Ampicillin	4	14	12									2				12								
Cephalosporins - Cefotaxim	0.5	14	0				1	10		3														
Sulfonamides	256	14	12													1	1				12			
Cephalosporins - Ceftazidim	2	14	0						4	8	2													

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

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

S. Derby	Pigs - Clinical investigations																							
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											3	1									
Tetracyclines - Tetracycline	8	4	1									2	1				1							
Fluoroquinolones - Ciprofloxacin	0.06	4	0			4																		
Quinolones - Nalidixic acid	16	4	0										3	1										
Trimethoprim		4	1							3						1								
Aminoglycosides - Streptomycin	32	4	1												3			1						
Aminoglycosides - Gentamicin	2	4	0							2	2													
Penicillins - Ampicillin	4	4	1									3				1								
Cephalosporins - Cefotaxim	0.5	4	0					2	2															
Sulfonamides	256	4	2													1	1				2			
Cephalosporins - Ceftazidim	2	4	0							2	2													

Table Antimicrobial susceptibility testing of S. 4,12:i:- in Pigs - Clinical investigations - quantitative data [Dilution method]

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

S. 4,12:i:-	Pigs - Clinical investigations																							
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										1	3										
Tetracyclines - Tetracycline	8	4	4														4							
Fluoroquinolones - Ciprofloxacin		4	0			3	1																	
Quinolones - Nalidixic acid	16	4	0										3	1										
Trimethoprim	2	4	0							4														
Aminoglycosides - Streptomycin	32	4	4															4						
Aminoglycosides - Gentamicin	2	4	0							2	2													
Penicillins - Ampicillin	4	4	4													4								
Cephalosporins - Cefotaxim	0.5	4	0				1	3																
Sulfonamides	256	4	4																		4			
Cephalosporins - Ceftazidim	2	4	0						1	3														

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

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

S. Enteritidis	Cattle (bovine animals) - Clinical investigations																							
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	0		1	2																		
Quinolones - Nalidixic acid	16	3	0										3											
Trimethoprim		3	0							3														
Aminoglycosides - Streptomycin	16	3	0										2	1										
Aminoglycosides - Gentamicin	4	3	0							3														
Penicillins - Ampicillin	8	3	0								1	1	1											
Cephalosporins - Cefotaxim	0.5	3	0				1	2																
Sulfonamides	256	3	0															3						
Cephalosporins - Ceftazidim	2	3	0						1	2														

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

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

S. Typhimurium	Cattle (bovine animals) - Clinical investigations																							
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											5			6							
Tetracyclines - Tetracycline	8	11	7									1	3			2	5							
Fluoroquinolones - Ciprofloxacin		11	1		1	9					1													
Quinolones - Nalidixic acid		11	1										9	1			1							
Trimethoprim	2	11	0							11														
Aminoglycosides - Streptomycin	16	11	7												4			7						
Aminoglycosides - Gentamicin	2	11	0							9	2													
Penicillins - Ampicillin	4	11	6								1	4				6								
Cephalosporins - Cefotaxim	0.5	11	0					10	1															
Sulfonamides	256	11	7													1	3				7			
Cephalosporins - Ceftazidim	2	11	0						2	9														

Table Antimicrobial susceptibility testing of S. 4,12:i:- in Cattle (bovine animals) - Clinical investigations - quantitative data [Dilution method]

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

S. 4,12:i:-	Cattle (bovine animals) - Clinical investigations																							
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	0			2																		
Quinolones - Nalidixic acid	16	2	0											2										
Trimethoprim		2	0							2														
Aminoglycosides - Streptomycin	32	2	2															2						
Aminoglycosides - Gentamicin	2	2	0							1	1													
Penicillins - Ampicillin	4	2	2													2								
Cephalosporins - Cefotaxim	0.5	2	0					1	1															
Sulfonamides		2	2																		2			
Cephalosporins - Ceftazidim	2	2	0							2														

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Meat from broilers (Gallus gallus) - Surveillance - official controls - quantitative data [Dilution method]

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

S. 6,7:-:1,5	Meat from broilers (Gallus gallus) - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0												1										
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															
Aminoglycosides - Streptomycin	32	1	1														1								
Aminoglycosides - Gentamicin	2	1	0							1															
Penicillins - Ampicillin	4	1	0										1												
Cephalosporins - Cefotaxim	0.5	1	0							1															
Sulfonamides	256	1	1																		1				
Cephalosporins - Ceftazidim	2	1	0								1														

Table Antimicrobial susceptibility testing of S. 4,12:i:- in Meat from pig - Surveillance - official controls - quantitative data [Dilution method]

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

S. 4,12:i:-	Meat from pig - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0											1											
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															
Aminoglycosides - Streptomycin	32	1	1															1							
Aminoglycosides - Gentamicin		1	0								1														
Penicillins - Ampicillin	4	1	1													1									
Cephalosporins - Cefotaxim	0.5	1	0					1																	
Sulfonamides	256	1	1																		1				
Cephalosporins - Ceftazidim	2	1	0							1															

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

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

S. Dublin	Cattle (bovine animals) - Clinical investigations																							
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														
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																
Sulfonamides	256	1	0													1								
Cephalosporins - Ceftazidim	2	1	0						1															

Table Antimicrobial susceptibility testing of S. 4,12:i:- in Meat from bovine animals - Surveillance - official controls - quantitative data [Dilution method]

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

S. 4,12:i:-	Meat from bovine animals - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	1																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	1	0												1										
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															
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																
Sulfonamides		1	1																		1				
Cephalosporins - Ceftazidim	2	1	0							1															

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Gallus gallus (fowl) - unspecified - Clinical investigations - quantitative data [Dilution method]

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

S. 6,7:-:1,5	Gallus gallus (fowl) - unspecified - Clinical investigations																								
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	1														1								
Fluoroquinolones - Ciprofloxacin	0.06	1	1								1														
Quinolones - Nalidixic acid	16	1	1														1								
Trimethoprim	2	1	0							1															
Aminoglycosides - Streptomycin	32	1	1															1							
Aminoglycosides - Gentamicin	2	1	0							1															
Penicillins - Ampicillin	4	1	0										1												
Cephalosporins - Cefotaxim	2	1	0						1																
Sulfonamides	256	1	1																		1				
Cephalosporins - Ceftazidim	2	1	0								1														

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Pigs - Clinical investigations - quantitative data [Dilution method]

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

S. 6,7:-:1,5	Pigs - Clinical investigations																							
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														
Aminoglycosides - Streptomycin	32	2	0													2								
Aminoglycosides - Gentamicin	2	2	0							1	1													
Penicillins - Ampicillin	4	2	0									2												
Cephalosporins - Cefotaxim	0.5	2	0					2																
Sulfonamides		2	0														2							
Cephalosporins - Ceftazidim	2	2	0						2															

Table Antimicrobial susceptibility testing of S. Havana in Compound feedingstuffs for poultry - laying hens - final product - at processing plant - Control and eradication programmes - quantitative data [Dilution method]

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

S. Havana	Compound feedingstuffs for poultry - laying hens - final product - at processing plant - Control and eradication programmes																							
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														
Aminoglycosides - Streptomycin	32	1	0											1										
Aminoglycosides - Gentamicin	2	1	0							1														
Penicillins - Ampicillin	4	1	0										1											
Cephalosporins - Cefotaxim	2	1	0					1																
Sulfonamides	256	1	0															1						
Cephalosporins - Ceftazidim	2	1	0							1														

Table Antimicrobial susceptibility testing of S. Havana in Feed material of oil seed or fruit origin - rape seed derived - at feed mill - Surveillance - official controls - quantitative data [Dilution method]

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

S. Havana	Feed material of oil seed or fruit origin - rape seed derived - at feed mill - Surveillance - official controls																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	4																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	4	0											3	1										
Tetracyclines - Tetracycline	8	4	0									1	2	1											
Fluoroquinolones - Ciprofloxacin	0.06	4	0			4																			
Quinolones - Nalidixic acid	16	4	0										4												
Trimethoprim	2	4	0							4															
Aminoglycosides - Streptomycin	32	4	0										3		1										
Aminoglycosides - Gentamicin	2	4	0						4																
Penicillins - Ampicillin	4	4	0							1	3														
Cephalosporins - Cefotaxim	0.5	4	0					1	2	1															
Sulfonamides	256	4	0														4								
Cephalosporins - Ceftazidim	2	4	0						2	1	1														

Table Antimicrobial susceptibility testing of S. Montevideo in Meat from broilers (Gallus gallus) - Monitoring - official sampling - quantitative data [Dilution method]

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

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

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

Test Method Used
Broth dilution

Standard methods used for testing
NCCLS/CLSI

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

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

Test Method Used
Disc diffusion Broth dilution

Standard methods used for testing
NCCLS/CLSI

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol	EUCAST	16	12
	Florfenicol	EUCAST	16	
Tetracyclines	Tetracycline	EUCAST	8	14
Fluoroquinolones	Ciprofloxacin	EUCAST	0.06	15
	Enrofloxacin			16
Quinolones	Nalidixic acid	EUCAST	16	13
Trimethoprim	Trimethoprim	EUCAST	2	10
Sulfonamides	Sulfonamide			12
	Sulfonamides	CLSI	256	
Aminoglycosides	Streptomycin	ARBAO	32	11
	Gentamicin	EUCAST	2	12
Cephalosporins	Cefotaxim	EUCAST	0.5	13
	Ceftazidim	EUCAST	2	
Penicillins	Ampicillin	EUCAST	4	13

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

Test Method Used
Broth dilution

Standard methods used for testing
NCCLS/CLSI

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

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

State Veterinary Administration (SVA) of the Czech Republic launched monitoring for occurrence of thermophilic Campylobacter in poultry in the year 2005. This monitoring was also carried out in 2006, 2007, 2008 and 2009. Its chief aim is the monitoring of thermophilic Campylobacter incidence and their antibiotic resistance. The cloacal swabs of broilers were taken at the slaughterhouses in 2006 and 2007. The caecum samples and carcasses of broilers were taken at the slaughterhouses in 2008 and in autumn 2009 only the caecum was taken. The slaughterhouses were selected so that the entire area of the Czech Republic was covered, if possible. To deal with seasonal prevalence, samples were collected in slaughterhouses monthly throughout the entire calendar year. The monitoring of prevalence of thermophilic Campylobacter in chilled and frozen broilers at retails was carried out in 2009. The partner of the Communitary Reference Laboratory in Uppsala is the State Veterinary Institute Olomouc.

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

The prevalence of human campylobacteriosis was relatively simmilar to the last year.

Recent actions taken to control the zoonoses

The monitoring of the prevalence and antibiotics resistance of thermotolerant Campylobacter spp. in broilers.

2.2.2 Campylobacteriosis in humans

A. Thermophilic Campylobacter in humans

Reporting system in place for the human cases

Infectious diseases (all infections including parasitary) are notified on legal basis (20/1966, 258/2000.) Any physician is obliged to notify the diagnosed disease and data are collected by the net of Regional Public Health Institutes with their district branch offices. The data are centrally collected and processed by the National Institute of Public health.

Case definition

Clinical picture compatible with campylobacteriosis, e.g. diarrhoeal illness of variable severity.

Notification system in place

Infectious diseases (all infections including parasitary) are notified on legal basis. (20/1966, 258/2000) Any physician is obliged to notify the diagnosed disease and data are collected by the net of Regional Public Health Institutes with their district branch offices. The data are centrally collected and processed by the National Institute of Public health.

History of the disease and/or infection in the country

Campylobacter is routinely diagnosed only in recent years and we observe typical seasonal variation in its incidence. The increaing trend in incidence was partly due to spread of diagnostic in all country. Campylobacterioses have importance comparable with salmonelloses.

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

The highest increase in morbidity is recorded for the lowest age groups that is indicative of worsening conditions in food processing (particularly in households). Almost three fourts of cases were infected via poultry products.

2.2.3 Campylobacter in foodstuffs

A. Thermophilic Campylobacter in Broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

At retail

The State Veterinary Administration (SVA)took 120 chilled and 120 frozen broilers (Gallus gallus) at retail (supermarkets).

Frequency of the sampling

At retail

Once a month

Type of specimen taken

At retail

Fresh meat

Methods of sampling (description of sampling techniques)

At retail

SVA took samples in supermarkets of 8 the biggest cities in the Czech Republic.

Definition of positive finding

At retail

As the positive finding, SVA considered in its monitoring program the positive finding of Campylobacter spp. on broilers skin.

Diagnostic/analytical methods used

At retail

CSN EN ISO 10272-1:2006
CSN EN ISO 10272-2:2006

Preventive measures in place

NIPH - creation and control of HACCP and GHP system

Control program/mechanisms

The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Alert System for Food and Feed. This is not valid for positive findings from caecum at slaughterhouses and the monitoring program in supermarkets carried out by SVA.

Recent actions taken to control the zoonoses

SVA and NIPH carry out monitoring and control programs in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

Measures in case of the positive findings or single cases

In the case of positive results of the investigation the competent authority takes measures to prevent spreading of the infection to the food chain.This is not valid for positive findings of monitoring programs in slaughterhouses and supermarkets.

Notification system in place

The positive result of the bacteriological test has to be reported to the appropriate Regional Veterinary Administrations (RVA). The positive results are reported to the RVA from laboratories which made the tests.

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) - carcass - spent hens - at retail - Survey	NIPH	Single	25g	12	8	3	5	0	0	0
Meat from broilers (Gallus gallus) - fresh - chilled - at retail - Monitoring - official sampling	SVA	Single	27g	120	90	15	64	0	0	11
Meat from broilers (Gallus gallus) - fresh - frozen - at retail - Monitoring - official sampling	SVA	Single	27g	120	44	9	30	0	0	5
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - Survey	NIPH	Single	10g	12	8	5	3	0	0	0
Meat from broilers (Gallus gallus) - offal - unspecified - at retail - Survey	NIPH	Single	25g	12	10	3	5	0	0	2
Meat from turkey - meat preparation - intended to be eaten cooked - at retail - Survey	NIPH	Single	10g	12	1	1	0	0	0	0

Footnote:

Thermophilic Campylobacter spp.,unspecified means in this cause dual contamination C. jejuni + C. coli.

Table Campylobacter in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Fish - at retail - Survey	NIPH	Single	10g	24	0	0	0	0	0	0
Meat from pig - offal - liver - at retail - Survey	NIPH	Single	10g	12	2	0	2	0	0	0
Meat from rabbit - fresh - chilled - at retail - Survey	NIPH	Single	10g	12	1	0	1	0	0	0
Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat - at retail - Survey	NIPH	Single	10g	24	0	0	0	0	0	0
Vegetables - at retail - Survey	NIPH	Single	10g	35	0	0	0	0	0	0

2.2.4 Campylobacter in animals

A. Thermophilic Campylobacter in Gallus gallus

Monitoring system

Sampling strategy

Since September 2005 the State Veterinary Administration (SVA) in the Czech Republic has introduced monitoring of thermophilic Campylobacter in poultry. Monitoring was also carried out in 2006, 2007, 2008 and 2009. Samples are taken at slaughterhouses from poultry at random. Sampling is done by official veterinarian every month. From 2008 ten caecum samples are taken at slaughterhouses. The samples are put into plastic bags. One slaughter batch equals 10 caecums. After collecting the samples, they are kept chilled and they are sent to the accredited laboratories of the State Veterinary Institutes within 24 hours. The monitoring system is in accordance to the Methodology Instruction of SVA. In 2009 the testing of caecum started in autumn, so we have very little number of samples and the results are not presented.

Frequency of the sampling

At slaughter

Once a month

Type of specimen taken

At slaughter

Caecum

Methods of sampling (description of sampling techniques)

At slaughter

Samples of caecum are taken at slaughterhouses at random. Samples are cooled and delivered to lab within 24 hours. Sampling is done by official veterinarian every month throughout the entire calendar year. Monitoring system follows the Methodology Instruction of SVA. The slaughterhouses were selected so that the entire area of the Czech Republic was covered, if possible.

Case definition

At slaughter

Positive result of the bacteriological test.

Diagnostic/analytical methods used

At slaughter

CSN EN ISO 10272-1:2006, CSN EN ISO 10272-2:2006 and Commission Decision 2007/516/EC

Notification system in place

The official laboratory (State Veterinary Institute) notifies the positive sample to RVA.

Results of the investigation

Investigation is performed in state laboratories accredited in accordance with CSN ISO EN 17025:2005. Investigation results are sent in the form of lab test report to the SVA.

2.2.5 Antimicrobial resistance in Campylobacter isolates

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

Sampling strategy used in monitoring

Frequency of the sampling

Antimicrobial Resistance in Campylobacter is a part of monitoring described above in chapter Thermophilic Campylobacter in broiler meat and products thereof. The investigation of antimicrobial resistance is carried
out from strains C. jejuni and C.coli isolated from broilers taken at supermarkets.

Type of specimen taken

Isolates of C. jejuni and C. coli were tested by the microdilution method for resistance to selected antimicrobial agents. Due to the overwhelming majority of C. jejuni isolates, resistance in this species is being reported only.

Methods of sampling (description of sampling techniques)

See chapter Thermophilic Campylobacter in broiler meat and products thereof.

Procedures for the selection of isolates for antimicrobial testing

For Antimicrobial Resistance testing , strains isolated during the Campylobacter monitoring in supermarkets are used - see chapter Thermophilic Campylobacter in broiler meat and products thereof.

Methods used for collecting data

Isolated strains of thermophilic Campylobacter are collected and sent to the only state laboratory, where they are centrally investigated for antimicrobial resistance. The monitoring of antibiotics resistance was carried out only by the State Veterinary Institute Olomouc (National Reference Laboratory for Campylobacter).

Laboratory methodology used for identification of the microbial isolates

Bacteriological examination was in accordance with the ISO 10272-1:2006, ISO 10272-2:2006 standard and Commission Decision 2007/516/EC. To confirm suspected isolates, the PCR methods described by Ertas and Lund (Ertas et al., 2002, Lund et al., 2004) and a commercial real-time PCR kit (Taq Man Campylobacter spp. Kit, Applied Biosystems) were used. For quality control,the C. jejuni ATCC 33560 reference strain was used.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

In 67 C. jejuni isolates examined in 2009, resistance to selected antimicrobial agents was tested by the microdilution method. The criteria for monitoring of antibiotic resistance of thermotolerant Campylobacter spp. in poultry were defined by Commission Decision 2007/516/EC. In C. jejuni isolates, resistance to 7 selected antibiotics (ATB) was tested. The first 5 ATB (erythromycin, ciprofloxacin, tetracycline, streptomycin and gentamicin) are specified in Commission Decision 2007/516/EC for monitoring of antibiotic resistance in poultry. Advised optimum concentration range tested for each ATB in mg/L were recommended by The EFSA Journal (EFSA
2007). The cut-off values (mg/L) were also specified by the above-mentioned

Commission Decision 2007/516/EC. Beyond the scope of the EC recommendations ampicillin and oxolinic acid were tested as well. In these three ATB, the cut-off values (mg/L) were based on the parameters published in Communique 2005. Quality of the plates was tested at regular intervals with the C. jejuni ATCC 33560 reference strain.

Cut-off values used in testing

The breakpoints (mg/L) were also specified by the above-mentioned Commission Decision 2007/516/EC.

Notification system in place

The results of the antibiotics resistance of the isolates were notified to the SVA.

Results of the investigation

The highest detected resistance was to quinolone antibiotics. Resistance to oxolinic acid was 64.2% in isolates, to ciprofloxacin 53.7% in isolates, to ampicillin 58.2%. To erythromycin 1.5% resistance was detected.

Table Antimicrobial susceptibility testing of Campylobacter in Meat from broilers (Gallus gallus)

Campylobacter	Campylobacter spp., unspecified		C. jejuni - C. jejuni subsp. jejuni	
Isolates out of a monitoring program (yes/no)			yes	
Number of isolates available in the laboratory			94	
Antimicrobials:	N	n	N	n
Fluoroquinolones - Ciprofloxacin			67	36
Quinolones - Nalidixic acid			67	43
Aminoglycosides - Gentamicin			67	0
Macrolides - Erythromycin			67	1
Penicillins - Ampicillin			67	39
Tetracyclines - Tetracycline			67	4
Fully sensitive			67	0
Resistant to 1 antimicrobial			67	19
Resistant to 2 antimicrobials			67	18
Resistant to 3 antimicrobials			67	20
Resistant to 4 antimicrobials			67	2
Resistant to >4 antimicrobials			67	0
Aminoglycosides - Streptomycin			67	0

Table Antimicrobial susceptibility testing of C. jejuni in Meat from broilers (Gallus gallus) - at retail - 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) - at retail - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	94																								
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
Tetracyclines - Tetracycline	2	67	4			13	10	27	6	5	1	1				4									
Fluoroquinolones - Ciprofloxacin	1	67	36			3	6	8	7	3	4	3	3	7	9	12	2								
Quinolones - Nalidixic acid	16	67	43								11	12		1			1	13	29						
Aminoglycosides - Streptomycin	2	67	0			8	8	24	16	9	2														
Aminoglycosides - Gentamicin	1	67	0			5	25	19	14	3	1														
Penicillins - Ampicillin	4	67	39						3	4	11	6	4	10	10	4	7		5	3					
Macrolides - Erythromycin	4	67	1				31	20	13	2								1							

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used
Broth dilution

Standard methods used for testing
NCCLS/CLSI EFSA, Communique

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline	EFSA	2	
Fluoroquinolones	Ciprofloxacin	EFSA	1	
Quinolones	Nalidixic acid	Communique	8	
Aminoglycosides	Gentamicin	EFSA	1	
	Streptomycin	EFSA	2	
Macrolides	Erythromycin	EFSA	4	
Penicillins	Ampicillin	Communique	4	

Footnote:

Valid only for C. jejuni

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

Test Method Used	Standard methods used for testing

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

2.3 LISTERIOSIS

2.3.1 General evaluation of the national situation

A. Listeriosis general evaluation

History of the disease and/or infection in the country

There is no official National program for monitoring of listeriosis at animals. Czech Agriculture and Food Inspection Authority performed control at retail. State Veterinary Administration carry out monitoring of listeriosis in foodstuffs of animal origin in food producing establishments in accordance with Commission Regulation (EC) No 2073/2005 on microbiological criteria for foodstuffs.

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

In last years has been reported decreasing the incidence of positive findings for Listeria monocytogenes. Listeria monocytogenes in foodstuffs of animal origin were the main source of infection. The prevalence of human listeriosis was relatively similar to the last year.

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

There are relevancies of the findings in foodstuffs as a source of infection to human cases. Sources of infection are just foodstuffs of animal origin. Findings in human populations were sporadic in the last year.

Additional information

In accordance with Regulation (EC) 2073/2005 in 2006 was putting into practice the bacteriological detection of Listeria monocytogenes performed by State Veterinary Administration. The investigation was made by the detection method, this method is more sensible than the enumeration method. For presence or absence L. monocytogenes in 25 g is using EN/ISO 11290-1.

2.3.2 Listeria in foodstuffs

A. L. monocytogenes in food - Other food - at retail - official food or feed controls - random sampling

Monitoring system

Sampling strategy

CAFIA performed control at retail according to Commission Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs (as amended by EU regulation No. 1441/2007). Samples were collected by competent authority as part of an official sampling from all 14 regions of the Czech Republic within a year by the inspectors from the Regional inspectorates and analysed in designated laboratories for analysis samples taken during official controls (Article 12, Regulation (EC) No 882/2004). The sampling by CAFIA was random. However, in case of consumer complaints was the sampling targeted.

Frequency of the sampling

At the production plant

depend on the HACCP and on the survey

At retail

Sampling distributed evenly throughout the year

Type of specimen taken

At the production plant

Raw materials and final products.

At retail

Final products.

Methods of sampling (description of sampling techniques)

At the production plant

Final products must be placed asepticaly into a sample container and transfer to the laboratory. The number of subsamples have been taken in accordance with Regulation (EC) No 2073/2005.

At retail

Final product of one hundred grams minimum each was taken in a sterile way, into clean and dry plastic bag. The samples were placed into refrigerated container and immediately sent to the laboratory for investigation. The numbers of subsamples were taken in particular food categories according to a sampling plan which is given to the Chapter 1 Food safety criteria of Commission Regulation (EC) No 2073/2005:

Sampling plan n=5 for ready-to-eat foods able or unable to support the growth of L. monocytogenes, other than those intended for infants and for special medical purposes was taken;

Sampling plan n=10 for ready-to-eat foods intended for infants was taken.

Definition of positive finding

At the production plant

The positive batch means the presence L. monocytogenes in 25 g only in one of all subsamples.

At retail

A batch was considered to be positive where L. monocytogenes has been isolated in amount more than 100 CFU in 1g from at least one subsample taken out of the batch.

Diagnostic/analytical methods used

At the production plant

parts 1 and 2

At retail

parts 1 and 2

Preventive measures in place

Controls of HACCP,GMP and GHP systems

Control program/mechanisms

The control program/strategies in place

The control programs/ strategies in place: check of records and documents within the HACCP system

Measures in case of the positive findings

On the basis of positive finding, the whole batch is recalled from circulation. A fine is imposed on the food business operator and he is ordered to remove the causes and to take such measures that would prevent recurrence of pathogens.

Results of the investigation

See table Listeria in other foods.

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Fish - smoked - at retail	CAFIA	Batch	25g	23	1	0		23	0	1
Infant formula	CAFIA	Batch	25g	1	0	1	0	0		
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail	CAFIA	Batch	25g	8	0	0		8	0	0
Meat from pig - meat products - cooked, ready-to-eat - at retail	CAFIA	Batch	25g	102	1	0		102	0	1
Crustaceans - at retail - Surveillance - official controls	SVA	Single	25g	44	0	44	0			
Fish - marinated - at retail - Surveillance - official controls	CAFIA	Batch	25g	27	0	0		27	0	0
Fish - smoked - at processing plant - Surveillance - official controls	SVA	Batch	25g	186	8	99	8	87	0	0
Fish - smoked - at retail - Survey	NIPH	Single	25g	12	3	12	0	12	3	0
Fishery products, unspecified - ready-to-eat - at retail - Survey	NIPH	Single	25g	12	0	12	0			
Fruits - at retail - Survey	NIPH	Single	25g	12	0	12	0			
Fruits - precut - ready-to-eat - at retail - Surveillance - official controls	CAFIA	Batch	25g	9	0	0		9	0	0
Infant formula - at processing plant - Surveillance - official controls	SVA	Batch	25g	72	0	72	0			
Infant formula - dried - at retail - Survey	NIPH	Single	25g	12	0	12	0			
Meat from bovine animals - fresh - at processing plant - Surveillance - official controls	SVA	Batch	25g	9	2	9	2			

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVA	Batch	25g	1113	6	1083	6	30	0	0
Meat from broilers (Gallus gallus) - fresh - at processing plant - Surveillance - official controls	SVA	Batch	25g	16	2	16	2			
Meat from broilers (Gallus gallus) - fresh - at retail - Survey	NIPH	Single	25g	12	1	12	1			
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVA	Batch	25g	294	13	249	13	45	0	0
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - Survey	NIPH	Single	25g	36	0	36	0			
Meat from pig - fresh - at processing plant - Surveillance - official controls	SVA	Batch	25g	20	3	20	3			
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVA	Batch	25g	8409	208	7603	208	806	0	0
Meat from pig - meat products - cooked, ready-to-eat - at retail - Survey	NIPH	Single	25g	60	4	60	0	60	4	0
Meat from pig - meat products - fermented sausages - at retail - Surveillance - official controls	CAFIA	Batch	25g	14	0	0		14	0	0
Meat, mixed meat - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	SVA	Batch	25g	4858	56	3476	55	1382	0	1
Meat, mixed meat - meat products - cooked, ready-to-eat - at retail - Surveillance - official controls	CAFIA	Batch	25g	45	0	0		45	0	0

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Meat, mixed meat - meat products - cooked, ready-to-eat - at retail - Survey	NIPH	Single	25g	84	4	84	0	84	4	0
Meat, mixed meat - meat products - fermented sausages - at retail - Survey	NIPH	Single	25g	24	1	24	0	24	1	0
Molluscan shellfish - cooked - at retail - Surveillance - official controls	SVA	Single	25g	20	0	20	0			
Other processed food products and prepared dishes - at processing plant - Surveillance - official controls [1)]	CAFIA	Batch	25g	38	0	2	0	36	0	0
Other processed food products and prepared dishes - at retail - Surveillance - official controls [2)]	CAFIA	Batch	25g	4	0	0		4	0	0
Other processed food products and prepared dishes - at retail - Survey [3)]	NIPH	Single	25g	12	0	12	0			
Other processed food products and prepared dishes - sandwiches - at processing plant - Surveillance - official controls	CAFIA	Batch	25g	122	2	45	0	77	1	1
Other processed food products and prepared dishes - sandwiches - at retail - Surveillance - official controls	CAFIA	Batch	25g	53	1	0		53	0	1
Ready-to-eat salads - at processing plant - Surveillance - official controls	CAFIA	Batch	25g	198	6	27	0	171	5	1
Ready-to-eat salads - at retail - Surveillance - official controls	CAFIA	Batch	25g	96	0	0		96	0	0
Ready-to-eat salads - containing mayonnaise - at processing plant - Surveillance	SVA	Batch	25g	847	11	486	11	361	0	0
Sauce and dressings - at processing plant - Surveillance	CAFIA	Batch	25g	5	0	5	0	0		

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Seeds, sprouted - ready-to-eat - at processing plant - Surveillance - official controls	CAFIA	Batch	25g	1	0	0		1	0	0
Seeds, sprouted - ready-to-eat - at retail - Surveillance - official controls	CAFIA	Batch	25g	3	0	0		3	0	0
Sweets - at processing plant - Surveillance - official controls	CAFIA	Batch	25g	300	0	22	0	278	0	0
Sweets - at retail - Surveillance - official controls	CAFIA	Batch	25g	15	0	0		15	0	0
Sweets - at retail - Survey	NIPH	Single	25g	12	0	12	0			
Vegetables - at retail - Survey	NIPH	Single	25g	60	0	60	0			
Vegetables - non-precut - at processing plant - Surveillance	SVA	Batch	25g	21	1	21	1			
Vegetables - non-precut - at retail - Surveillance - official controls	CAFIA	Batch	25g	2	0	0		2	0	0
Vegetables - pre-cut - ready-to-eat - at processing plant - Surveillance - official controls	CAFIA	Batch	25g	18	0	3	0	15	0	0
Vegetables - pre-cut - ready-to-eat - at retail - Surveillance - official controls	CAFIA	Batch	25g	19	0	0		19	0	0

Comments:

[1)] Dumplings
[2)] Dumplings
[3)] Bread dumplings

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Cheeses made from cows' milk - hard - made from pasteurised milk - at retail	CAFIA	Batch	25g	8	0			8	0	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant	CAFIA	Batch	25g	9	0			9	0	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail	CAFIA	Batch	25g	51	0			51	0	0
Dairy products (excluding cheeses) - butter - at retail	CAFIA	Batch	25g	16	0			16	0	0
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	804	0	779	0	25	0	0
Cheeses made from cows' milk - hard - made from pasteurised milk - at retail - Survey	NIPH	Single	25g	12	1	12	0	12	1	0
Cheeses made from cows' milk - hard - made from raw or low heat-treated milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	53	0	22	0	31	0	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	2918	27	1876	25	1042	0	2
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail - Survey	NIPH	Single	25g	24	0	24	0			
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	111	0	91	0	20	0	0

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	15	0	15	0			
Cheeses made from sheep's milk - hard - made from pasteurised milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	14	0	14	0			
Cheeses made from sheep's milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	10	0	10	0			
Dairy products (excluding cheeses) - butter - at processing plant - Surveillance - official controls	SVA	Batch	25g	98	0	93	0	5	0	0
Dairy products (excluding cheeses) - cream - at processing plant - Surveillance - official controls	SVA	Batch	25g	64	0	59	0	5	0	0
Dairy products (excluding cheeses) - dairy products, not specified - at processing plant - Surveillance - official controls	SVA	Batch	25g	314	0	201	0	113	0	0
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - Surveillance - official controls	SVA	Batch	25ml	167	0	167	0			
Dairy products (excluding cheeses) - ice-cream - at processing plant - Surveillance - official controls	SVA	Batch	25g	30	0	30	0			
Dairy products (excluding cheeses) - ice-cream - at retail - Survey	NIPH	Single	25g	12	0	12	0			
Dairy products (excluding cheeses) - ice-cream - made from pasteurised milk - at processing plant - Surveillance - official controls	CAFIA	Batch	25g	4	0	4	0	0		

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - Surveillance - official controls	SVA	Batch	25g	423	0	423	0			
Milk, cows' - pasteurised milk - at processing plant - Surveillance - official controls	SVA	Batch	25ml	148	0	148	0			
Milk, cows' - raw - intended for direct human consumption - at processing plant - domestic production - Surveillance - official controls	SVA	Batch	25ml	11	0	11	0			
Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products - at processing plant - Surveillance - official controls	SVA	Batch	25ml	83	0	83	0			
Milk, goats' - pasteurised - at processing plant - domestic production - Surveillance - official controls	SVA	Batch	25ml	4	0	4	0			

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

Occurrence of the zoonotic agent and/or disease is sporadic and in human population there was no clinical case of the disease.

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

In the year 2009 was no positive finding from foodstuffs.

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

There was no relevance between finding in animals and foodstuffs to human.

Recent actions taken to control the zoonoses

Sampling for monitoring of VTEC is performed at slaughterhouses during July and August. The samples have been taken from carcass swabs of pig and bovine animals. Swabs were taken from 4 places on the carcass. The area of the swab is 100 cm2. Samples are tested in state veterinary institutes.

Additional information

The horizontal method for the detection of Escherichia coli O157 (ISO 16654:2001) was used for testing of samples of food for VTEC in routine diagnostic laboratories. Suspected isolates were tested in the national reference laboratory. The isolates were tested for somatic O-antigen by agglutination and for genetic cod for VT production and intimin production by PCR. Somatic O-antigens were tested for more frequent serogroups by 70 O-antisera. Antisera O157, O26, O91, O103, O113, O121, O128, O69, O71, O116, O139, O141, O142, O147, O153, O156 and others were used.

The VTEC isolates from animals were randomly detected from sick or dead animals.

2.4.2 Escherichia coli, pathogenic in foodstuffs

Table VT E. coli in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Dairy products (excluding cheeses) - dairy products, not specified - made from pasteurised milk - at processing plant - Surveillance - official controls	SVA	Batch	25g	36	0			
Egg products - at processing plant - Surveillance - official controls	SVA	Batch	25g	1	0			
Meat from bovine animals - fresh - at slaughterhouse - Monitoring - official sampling [1)]	SVA	Batch	25g	220	0			
Meat from broilers (Gallus gallus) - fresh - at slaughterhouse - Surveillance - official controls	SVA	Batch	25g	15	0			
Meat from other animal species or not specified - meat products - at processing plant - Surveillance - official controls	SVA	Batch	25g	33	0			
Meat from pig - fresh - at slaughterhouse - Monitoring - official sampling [2)]	SVA	Batch	25g	262	0			
Milk, cows' - raw - intended for direct human consumption - at processing plant - Surveillance - official controls	SVA	Batch	25ml	8	0			
Milk, goats' - raw - intended for direct human consumption - at processing plant - Surveillance - official controls	SVA	Batch	25ml	3	0			
Vegetables - at processing plant - Surveillance - official controls	SVA	Batch	25g	5	0			

Comments:

Table VT E. coli in food

[1] swabs 100 cm2
[2] swabs 100 cm2

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

Elimination of bovine tuberculosis caused by M. bovis was successfully completed in the CR by eradicatoin and control programme in 1968.

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

The whole territory of the Czech Republic is declared officially free of tuberculosis as regards bovine herds in accordance with Commission decision 2004/320/EC of 31 March 2004. There is no relevance between TBC in human and TBC in animals.

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

There is no relevance between findings in animals, feedingstuffs and foodstuffs to human causes because since 1968 the Czech Republic is free from Bovine tuberculosis (M. bovis).

Recent actions taken to control the zoonoses

In animals - simple skin test
-before remove all shemales older than 24 months
-all imported shemales (except sloughtering animals) older than 6 weeks and breeding bulls from third countries
-all removed shemales (except sloughtering animals) older than 6 weeks and breeding bulls from Member States, which have not status of free country
- all breeding bulls
- 25 % of all female older than 24 months in every region in the year 2009

2.5.2 Tuberculosis, mycobacterial diseases in humans

A. Tuberculosis due to Mycobacterium bovis in humans

Reporting system in place for the human cases

Register of tuberculosis notifies clinical reports and laboratory reports of tuberculosis and mycobacterioses.

Diagnostic/analytical methods used

Laboratory microscopy and cultivation methods of identification are used. Only cultivation proof is considered as valid microbiological proof.

Notification system in place

Tuberculosis is obligatory notified disease since the begining of the 20th century. The most recent system contains two branchesÂ´ Register of tuberculosis - physicianÂ´s reports based register and laboratory reports of positive findings based system. Both are merged into one system with unique identification number.

History of the disease and/or infection in the country

Tuberculosis caused by M. tuberculosis is declining for several years after ten-years stagnation. CR is considered as low endemicity country.

After successful elimination of tuberculosis due to M. bovis in animals, we notify only very sporadic cases of identification of M. bovis in humans. Bacteriological finding of M. bovis in humans must be considered very cautiously.

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 Czech Republic is free of Bovine tuberculosis caused by M. bovis since 1967 on the national level and from 2004 is declared as officially free in accordance with EU legislation on the base of Commission Decision 2004/320/EC.

Free regions

The whole territory of the Czech Republic is declared as officially free of tuberculosis (M. bovis) in relation to bovine herds.

Additional information

During the reporting year 2009 there was no occurrence and/or outbreak of bovine tuberculosis caused by Mycobacterium bovis in bovine animals.

Monitoring system

Sampling strategy

The sampling strategy and monitoring system is in accordance with Directive 64/432/EEC as amended.

Frequency of the sampling

Tuberculosis " Alergenodiagnosis" simple intradermal test (antigen "Bovitubal" M. bovis 28 000 IU)
Data of the last skin test must be checked prior to skin test in order to observe specified time period between individual examinations.

a)animals moved for further keeping in the Czech Republic " examination of female animals over 24 months of age one month prior to the first movement 1x per year. The term movement means: outside the territory of a region
b)animals imported from third countries (excluding slaughter animals) examination of female animals over 6 weeks of age and breeding bulls. The examination must be carried out as soon as possible after arrival of animals to the place of destination with respect to eventual previous tuberculin test;
c)animals moved from Member States not having status of bovine tuberculosis officially free country or region (excluding slaughter animals)and examination of female animals over 6 weeks of age and breeding bulls. The examination must be carried out as soon as possible after arrival of animals to the place of destination with respect to eventual previous tuberculin test;
d)breeding bulls in BBRH examination within 28 days prior to basic selection;
e)breeding bulls prior to admission to semen collection centres examination in accordance with Annex 2 to Decree No. 380/2003;
f)breeding bulls in semen collection centres 1x per year examination in accordance with Annex 2 to Decree No. 380/2003.
g) 25 % of all female older than 24 months in every region

Type of specimen taken

skin test

Methods of sampling (description of sampling techniques)

The place of antigen application is situated at the border of the anterior and middle thirds of the neck. The skin must be without pathological changes, equally thick with the possibility of an easy cutaneous drape formation. The place of tuberculin administration is perfectly cut and cleaned. The cutaneous drape is formed with the thumb and the point finger and its thickness is after cutimetre measuring recorded. The dosage of 0.1 ml of tuberculin is applicated by means of a short sterile needle, bevel edge outwards, with graduated syringe charged with tuberculin, inserted obliquely into the deepest layers of the skin. The right reaction after intradermal administration - the papula formation in the place of allergen inoculation - must be detected by palpation. If the tuberculin was not administered intradermally, it is possible to repeat the administration in the same place in the prescribed dosage. If the skin is injured during cutting or if skin changes are determined before tuberculin administration, it is necessary to inoculate tuberculin on another place of the same neck side. The origin place is cancelled with the hair cut.

Case definition

Negative reaction: If there is apparent only bordered swelling with the cutaneous drape strengthening of max. 2 mm without clinical symptoms as diffusion or large swelling, exudation, necrosis, painfulness or inflammation reaction of the corresponding lymphatic vessels or lymphatic nodes. Dubious reaction: If there is apparent no clinical symptom stated in item a) but the cutaneous drape strengthening is higher than 2 mm but lower than 4 mm. Positive reaction: If there are apparent clinical symptoms stated in item a) or the cutaneous drape in the place of application is thicker by 4 mm or more.

Diagnostic/analytical methods used

Simple skin test has been performed with tuberculin BOVITUBAL 28000 IU/ml (Bioveta, CZ) which contains tuberculin protein from Mycobacterium bovis (strain AN 5). The dose for one animal is 0,1ml. The diagnostic method is in accordance with recommendation OIE.

Vaccination policy

Vaccination is strictly prohibited.

Other preventive measures than vaccination in place

All slaughtered bovine animals were under veterinary control. The official post mortem veterinary examination is carry out in slaughterhouses by the official veterinarian in accordance with EU legislation.

Control program/mechanisms

The control program/strategies in place

The control of bovine tuberculosis is performing in accordance with 64/432/EC as amended.

Measures in case of the positive findings or single cases

In the case of positive results of examination the appropriate RVA issued extraordinary veterinary measures in accordance with Veterinary Act (CZ legislation) and EU legislation.

Notification system in place

Notification system is lay down by the Act No. 166/1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

Results of the investigation

If the result of investigation is positive, the person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the animals shall notify the results to the competent authority.

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

In the Czech Republic bovine tuberculosis was suppressed in frame of the nationwide sanitation program (1959 - 1968) on 10 October 1968. The post-eradication period (1969 - 1999) was characterized by the extinction of reservoir sources. Currently only the sporadic cases of the bovine tuberculosis incidence have been recorded. In 1981, 1987 to 1990, 1993 and 1996 any bovine tuberculosis incidence was not

found. Thereat in other years, from 1980 to 1995, at the most three outbreaks of tuberculosis ever appeared in cattle. The participation of the infected animals in individual stocks was very low and never exceeded 5 to 10% of animals. In 1970 to 1995 the Mycobacterium bovis infection was also diagnosed in other 119 animals (zoo, wild live, backyard) and in ten milk specimens. By course of the O.I.E. (International Animal Health Code,chapter 3.2.3.) definition the territory of the Czech Republic is free from bovine tuberculosis (the prevalence up to 0,2% of infected cattle stocks).

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

There is an paradox situation because human become risk for animals, mainly workers from easter can be source of infection for animals.

Additional information

In 2002 were tested 391 274 animals by single skin test (11 positive) and 1 350 animals by simultaneous tuberculin test examination (10 positive). All positive reactions were investigated for M. bovis with negative result.
In 2003 were tested 374 625 animals by single tuberculin test examination (1 positive) and 1 730 animals by simultaneous tuberculin test examination. All positive reactions were investigated for M. bovis with negative result.
In 2004 were tested 322 494 animals by single tuberculin test examination (29 positive) and 12 124 animals by simultaneous tuberculin test examination. All positive reactions were investigated for M. bovis with negative result.
In the 2005 were tested 5659 animals by single tuberculin test examination without positive results. Number of animals with suspicious lesions of tuberculosis were 14. All this lesions were detected as negative.
In the 2006 were tested 5081 animals by single tuberculin test examination without positive results. Number of animals with suspicious lesions of tuberculosis were 12. All this lesions were detected as negative.
In the 2007 were tested 6939 animals by single tuberculin test examination without positive results. Number of animals with suspicious lesions of tuberculosis were 9. All this lesions were detected as negative.
In the 2008 were tested 7037 animals by single tuberculin test examination without positive results. Number of animals with suspicious lesions of tuberculosis were 6. All this lesions were detected as negative.
In the 2008 were tested 7037 animals by single tuberculin test examination without positive results. Number of animals with suspicious lesions of tuberculosis were 6. All this lesions were detected as negative.
In the 2009 there were tested 161 274 animals by single skin test without positive results. Number of animals with suspicious lesions of tuberculosis were 10. All this lesions were detected as negative for M. bovis, M. tuberculosis or M. avium.

In the framework of the health control paid by the state, bovine tuberculosis is currently monitored in the CR as follow: single tuberculin test , simultaneous tuberculin test, laboratory examination (section, histological investigation and bacteriological investigation), serological investigation.

Table Tuberculosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Mycobacterium	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified
Goats [1)]	SVA	Animal	3676	0			
Pigs [2)]	SVA	Animal	423	180			180

Comments:

[1)] simple skin test
[2)] at slaughterhouse

Footnote:

Pigs testing is performed due to suspition findings in slaugtering

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Routine tuberculin testing		Number of tuberculin tests carried out before the introduction into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/432/EEC)	Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological	Number of animals detected positive in bacteriological examination
	Herds	Animals	Number of herds	%	Number of herds	%	Interval between routine tuberculin tests	Number of animals tested			
Česká Republika	19600	1374328	19600	100	0	0		161274	161274	10	0
Total : [1)]	19600	1374328	19600	100	0	0	N.A.	161274	161274	10	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

In 1964 the program for eradication and control of bovine brucellosis in cattle caused by B. abortus was successfully completed.
Ovine and caprine brucellosis caused by B. melitensis has never been occured in the Czech Republic.

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

The whole territory of the Czech Republic is declared officially free of brucelosis as regards bovine, sheep and goats herds in accordance with Commission decision 2004/320/EC of 31 March 2004.

2.6.2 Brucellosis in humans

A. Brucellosis in humans

Reporting system in place for the human cases

Epidat, all regions in the Czech Republic

Case definition

EU case definition in use

Notification system in place

Notifiable diseases

History of the disease and/or infection in the country

Brucellosis in human is very rare disease.

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

Very rare disease and source of infection is abroad.

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

The Czech Republic is free of bovine brucellosis since 1964 on the natinal level and since 2004 is the Czech Republic officially free of bovine brucelosis according to EU legislation. The officially free status is laid down in Commission Decision 2004/320/EC.

Free regions

The whole territory of the Czech Republic is declared as officially free of Bovine brucellosis regarding bovine herds.

Additional information

During the reporting year 2009 there was no occurrence and/or outbreak of bovine brucellosis on the whole territory of the Czech Republic.

Monitoring system

Sampling strategy

Samples are taken from:
1, All holdings of cattle, which do not supply milk to dairy - all animals from age 24 months, all breeding bulls, all abortion animals -blood samples.
2, All holdings of cattle, where is more than 100 heads, which supply milk to diary - all animals from age 24 months - blood samples.
3, Abortion foetuses in indicated caases.
4, All holdings of milk cows, where is less than 100 heads, which supply milk to diary - bulk milk samples

Frequency of the sampling

Sampling scheme:
a)breeding bulls in breeding bulls rearing house - examination within 28 days prior to basic selection;
b) breeding bulls prior to admission to semen collection centres - examination in accordance with Annex 2 to Decree No. 380/2003;
c)breeding bulls in semen collection centres 1x per year examination in accordance with Annex 2 to Decree No. 380/2003.
Brucellosis serological examination
a) all bovine holdings (herds) not delivering milk or not authorized to local sale of milk examination of all animals over 24 months of age and breeding bulls in natural matting 1x per year;
b) animals imported from third countries (excluding slaughter animals) examination of female animals over 24 months of age and breeding bulls. The examination must be carried out at most 1 month after arrival of animals to the place of destination;
c)animals moved from Member States not having status of bovine brucellosis officially free country or region (excluding slaughter animals) examination of female animals over 24 months of age and breeding bulls. The examination must be carried out at most 1 month after arrival of animals to the place of destination.

Brucellosis serological examination(RBT or ELISA) number of milking cows is recorded. Blood samples from all bovine holdings, where is more than 100 heads delivering milk to dairy plants or authorized to

local sale of milk examination of all animals older 24 moths 1x per year.

Brucellosis examination of milk (ELISA) number of milking cows is recorded. Bulk milk samples from all bovine holdings, where is less than 100 heads delivering milk to dairy plants or authorized to local sale of milk examination 2x per year in interval of at least 3 months. The examination of 100 dairy cows at most.

Brucellosis
All aborting cows are serologicaly tested after abortion.

Brucellosis
Abortions and amnia examination in indicated cases.

Type of specimen taken

milk, blood, abortion foetus

Diagnostic/analytical methods used

The diagnostic methods are used in accordance with Directive 64/432/EEC, Regulation 2004/226/EEC. RBT, Complement fixation test, ELISA, slow agglutination.

Vaccination policy

Vaccination is strictly prohibited.

Other preventive measures than vaccination in place

Control of animals movement between regions and control of imported animals.

Control program/mechanisms

The control program/strategies in place

Ministry of Agriculture of the Czech Republic determines main strategies in a veterinary care and carries out their control as laid down in the Veterinary Act No. 166/1999 Article 44, Point 1a. The Ministry of Agriculture specifies obligatory preventive and diagnostics campaigns in accordance with the Veterinary Act, Article 44; Point 1d, based on the epidemiological situation. Related details are laid down in the Methodology of Animal Health Controls and Prophylaxis approved by the Ministry of Agriculture and issued in its Official Journal. According to the legislation (Veterinary Act 166/1999), the SVA CR (CCA) has the legal power to supervise any action ordered by the Methodology. Regional veterinary administrations execute the legal powers as to supervise private veterinarians over their actions in the professional field as ordered by the Methodology.

Measures in case of the positive findings or single cases

The measures are laid down in the Veterinary Act No 166/1999 and Decree 299/2003 in Accordance with 91/68/EEC.

Notification system in place

Notification system is lay down by the Act No. 166/1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

Results of the investigation

If the result of investigation is positive, the person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the animals shall notify the results to the competent authority.

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

There was no outbreak of the disease in 2009.

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

There are not relevancies of the findings to human cases as a source of infection.

B. Brucella melitensis in goats

Status as officially free of caprine brucellosis during the reporting year

The entire country free

The whole teritory of the Czech Republic is officially free of Sheep and goat brucelosis in accordance with Commision Decision No. 320/2004/EC.

Free regions

The all teritory of the Czech Republic is free of B. melitensis and B. melitensis has never been found in the Czech Republic.

Monitoring system

Sampling strategy

The sampling strategy was done by State Veterinary Administration in Methodology of control of animal healts which is lay down in accordance with Veterinary Act No. 166/1999 as amended.

Frequency of the sampling

Caprine brucellosis (B. melitensis)

- Aborting goats serological examination after abortion.

- Breeding goats in matting examination 1x per year in accordance with Annex 9 to Decree No. 380/2003.

- Holdings (herds) producing young breeding he-goats where performance checks are carried out examination 1x per year. Representative number of animals shall include:
a) all non-castrated male animals over 6 months of age;
b) 25% of female animals of reproduction age (sexually mature) or lactating examination of at least 50 female animals (all animals in holdings containing less than 50 animals);
c) all animals over 6 months of age introduced to the holding after the previous testing.

- Abortions or amnia are bacteriologicaly testedin indicated cases.

Type of specimen taken

Blood

Methods of sampling (description of sampling techniques)

The methods of sampling is in according with Annex of the Council Decision 90/242/EEC

Diagnostic/analytical methods used

The diagnostic methods were used in accordance with Directive 64/432/EEC and Regulation 2004/226/EEC. RBT, CFT, ELISA and slow agglutination.

Vaccination policy

Vacination is strictly prohibited.

Other preventive measures than vaccination in place

Control of animals movement between regions and control of imported animals.

Control program/mechanisms

The control program/strategies in place

Ministry of Agriculture of the Czech Republic determines main strategies in a veterinary care and carries out their control as laid down in the Veterinary Act No. 166/1999 Article 44, Point 1a. The Ministry of

Agriculture specifies obligatory preventive and diagnostics campaigns in accordance with the Veterinary Act, Article 44; Point 1d, based on the epidemiological situation. Related details are laid down in the Methodology of Animal Health Controls and Prophylaxis approved by the Ministry of Agriculture and issued in its Official Journal. According to the legislation (Veterinary Act 166/1999), the SVA CR (CCA) has the legal power to supervise any action ordered by the Methodology. Regional veterinary administrations execute the legal powers as to supervise private veterinarians over their actions in the professional field as ordered by the Methodology.

Measures in case of the positive findings or single cases

The measures are laid down in Veterinary Act No 166/1999, as amended and Decree 299/2003 in accordance with 91/68/EEC.

Notification system in place

Notification system is lay down by the Veterinary Act No. 166/1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

Results of the investigation

If the result of investigation is positive, the person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the animals shall notify the results to the competent authority.

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

The disease has never been recorded in the Czech Republic.
In 2009 were tested all breeding male once a year, all abortioned goats after abortion and in holdings producing young breeding bucks were tested all bucks 6 months old and 25 % adult goats (min. 50 heads) once a year. 3193 samples in goats were tested for B. melitensis in year 2009 with negative results. Samples were tested by complement fixation test, Rose bengal test and slow agglutination.

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

There are not relevancies of the findings to human cases as a source of infection.

C. Brucella melitensis in sheep

Status as officially free of ovine brucellosis during the reporting year

The entire country free

The Czech Republic is officialy free of ovine brucelosis in accordance with 320/2004/EC.

Free regions

All regions in the Czech republic are free of ovine brucelosis (B. melitensis) and the disease has never been found in the Czech Republic.

Monitoring system

Sampling strategy

The sampling strategy was done by State Veterinary Administration in Methodology of control of animal health which is laid down in accordance with Veterinary Act No. 166/1999 as amended.

Frequency of the sampling

Ovine and caprine brucellosis (B. melitensis)

Licensed breeding rams examination 1x per year in accordance with Annex 9 to Decree No. 380/2003.

Holdings (herds) producing young breeding rams where performance checks are carried out examination 1x per year. Representative number of animals shall include:
a) all non-castrated male animals over 6 months of age;
b) 25% of female animals of reproduction age (sexually mature) or lactating examination of at least 50 female animals (all animals in holdings containing less than 50 animals);
c) all animals over 6 months of age introduced to the holding after the previous testing.

Aborting ewes are serologicaly tested once after abortion.

Ovine and caprine brucellosis (B. melitensis) LE (A + BE)
Abortions or amnia examination in indicated cases.

Type of specimen taken

blood and foetuses

Methods of sampling (description of sampling techniques)

The methods of sampling is in according with Annex of the Council Decision 90/242/EEC

Diagnostic/analytical methods used

The diagnostic method that are used in accordance with Annex of the Council Decision 90/242/EEC.

Vaccination policy

Vaccination is strictly prohibited.

Other preventive measures than vaccination in place

Control of animals movement between regions and control of imported animals.

Control program/mechanisms

The control program/strategies in place

The control program is laid down by State Veterinary Administration in Methodology of control health in accordance with Veterinary Act no. 166/1999 as amended.

Measures in case of the positive findings or single cases

The measures are laid down in Veterinary Act No. 166/199 sb. and Decree 299/2003 Sb in accordance with 91/68/EEC.

Notification system in place

Notification system is lay down by the Act No. 166/1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

Results of the investigation

If the result of investigation is positive, the person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the animals shall notify the results to the competent authority.

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

In 2009 were tested all breeding rams once a year, all abortioned sheep two times in interval 21 -28 days and aborted foetuses and in holdings which produced young breeding rams were tested all rams 6 months old and 25 % adult sheep (min. 50 heads) once a year. 13 376 samples in sheep were tested for B. melitensis in year 2009 with negative results. Samples were tested by complement fixation test, RBT and slow agglutination.

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

There are not relevancies of the findings to human cases as a source of infection.

Table Brucellosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Brucella	B. abortus	B. melitensis	B. suis	Brucella spp., unspecified
Pigs	SVA	Animal	86300	0				
Hares - wild - from hunting	SVA	Animal	3319	22			22	

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

Region	Total number of existing		Officially free herds		Infected herds		Surveillance			Investigations of suspect cases				
	Herds	Animals	Number of herds	%	Number of herds	%	Number of herds tested	Number of animals tested	Number of infected herds	Number of animals tested with serological blood tests	Number of animals positive serologically	Number of animals examined microbio logically	Number of animals positive microbio logically	Number of suspended herds
Česká Republika	15162	232845	15162	100	0	0	1740	16569	0	22	0	1	0	0
Total : [1)]	15162	232845	15162	100	0	0	1740	16569	0	22	0	1	0	0

Comments:

[1)] N.A.

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Surveillance						Investigations of suspect cases								
							Serological tests			Examination of bulk milk			Information about			Epidemiological investigation					
	Herds	Animals	Number of herds	%	Number of herds	%	Number of bovine herds tested	Number of animals tested	Number of infected herds	Number of bovine herds tested	Number of animals or pools tested	Number of infected herds	Number of notified abortions whatever cause	Number of isolations of Brucella infection	Number of abortions due to Brucella abortus	Number of animals tested with serological blood tests	Number of suspended herds	Number of positive animals		Number of animals examined microbio logically	Number of animals positive microbio logically
																		Sero logically	BST		
Česká Republika	19600	1374328	19600	100	0	0	19150	690731	0	1555	148128	0	5681	0	0	440	1	1		26	0
Total : [1)]	19600	1374328	19600	100	0	0	19150	690731	0	1555	148128	0	5681	0	0	440	1	1	0	26	0

Comments:

[1)] N.A.

2.7 YERSINIOSIS

2.7.1 General evaluation of the national situation

2.7.2 Yersiniosis in humans

A. Yersinosis in humans

Reporting system in place for the human cases

Epidat

Case definition

EU

Notification system in place

Notifiable diseases

History of the disease and/or infection in the country

MKNDG 1999 20002001200220032004
A04.6Yers 211 231 301 403 372498

Relevance as zoonotic disease

Morbidity of yersiniosis in CZ reveal increasing (498 cases in the last year). Age distribution is like salmonelloses. Cases are sporadic. Seasonality culminate in october and november. Source is most frequently pork meat.

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

The trichinellosis is very rare disease in wild life animals. The main sourse of the infection in the Czech Republic are wild boars.

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

The occurence of the disease in animals and humans is sporadic and the situation is stable.

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

There was no relevance between finding in animals and finding in human.

2.8.2 Trichinella in animals

A. Trichinella in horses

Monitoring system

Sampling strategy

All horses at slaughter are tested for trichinella. The samples are taken by veterinary authorities in the slaughterhouses.

Diagnostic/analytical methods used

Digestive method in accordance with Commission regulation (EC) No 2075/2005.

B. Trichinella in pigs

Number of officially recognised Trichinella-free holdings

There is no officially recognised Trichinella-free holdings in the Czech Republic.

Monitoring system

Sampling strategy

General

All carcasses of pigs are investigated in slaughterhouses. The sampling strategy is realized in accordance with the Veterinary Act No. 166/1999 coll., as amended.

Frequency of the sampling

General

All carcasses of pigs are investigated at slaughterhouses and all hunted wild boars for human consumption were tested for the presence of trichinella according to the Veterinary Act No. 166/1999 coll., as amended.

Type of specimen taken

General

Diaphragm muscles were taken and in the case of absence of diaphragm - the jaw muscle, tongue or abdominal muscles were sampled.

Methods of sampling (description of sampling techniques)

General

The digestive method is used as an approved method in accordance with Commission Regulation (EC) No 2075/2005.

Case definition

General

Presence of cyst or organism Trichinella spp. in muscles.

Diagnostic/analytical methods used

General

The digestive method was carried out in accordance to 2075/2005/EC.

Control program/mechanisms

The control program/strategies in place

The control program was made in accordance to 77/96/EC till the end of November 2005. The investigations were carried out in accordance with Comission Regulation (EC) No 2075/2005 from December 2005.

Measures in case of the positive findings or single cases

The meat from positive carcass is excluded from the food chain.

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

Fattening pigs raised under controlled housing conditions in integrated production system

All fattening pigs slaughtered in the slaughterhouses are tested for Trichinella spp. The positive case means presence of Trichinella spp. in muscles detected by the digestive method.

Fattening pigs not raised under controlled housing conditions in integrated production system

Pigs slaughtered at home only for owner consumption are not under official veterinary control. The veterinary control is in that case voluntary.

Breeding sows and boars

All breeding sows and boars are sampled in slaughterhouses.

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

The occurrence of Trichinella in pigs is very rare and sporadic. Over the reporting period has been detected no positive finding in wild boars and in domestic pigs too.

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total units positive for Trichinella	T. spiralis	Trichinella spp., unspecified
Pigs	SVS	Animal	3289761	0	0	0
Solipeds, domestic - horses	SVA	Animal	332	0	0	0
Wild boars - wild	SVA	Animal	75000	0	0	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

Until 1965 occurred echinococcosis only sporadically in 2% of keepings (low capacity stables) and was minimized and later totally eradicated by innovation and using high capacity stables (restricted access of rodents).

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

The monitoring programe for Echinococcus in wildlife red foxes was introduced in the year 2005. In the year 2009 the samples were taken from foxes which were hunted for Rabies vakcination efficiency control. In the frame of the programme, 1554 samples from foxes were tested for echinococcosis. 522 samples were positive for E. multilocularis.

ccination

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

Thanks to the post mortem inspection of all carcasses the risk of releasing infected carcasses is minimized. There was no relevance between findings in animals and humans in the year 2009.

Recent actions taken to control the zoonoses

Investigation is performed in two foxes which were hunted or found dead on every 100 km2 of hunting area in year.

2.9.2 Echinococcosis in humans

A. Echinococcus spp. in humans

Reporting system in place for the human cases

Epidat

Case definition

EU

Notification system in place

Notifiable diseases

History of the disease and/or infection in the country

rare occurrence - imported cases

Results of the investigation

Two imported cases in the year 2005.

2.9.3 Echinococcus in animals

Table Echinococcus in animals

	Source of information	Sampling unit	Units tested	Total units positive for Echinococcus	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Foxes	SVA	Animal	1554	522		522	

2.10 TOXOPLASMOSIS

2.10.1 General evaluation of the national situation

2.11 RABIES

2.11.1 General evaluation of the national situation

A. Rabies general evaluation

History of the disease and/or infection in the country

The importance of foxes in rabies epidemiology increased and red fox became the principal vector of rabies in the Czech Republic. Neither subsidiaries payment for hunted foxes, which was introduced in 1969, nor gassing of fox dens, carried out during 1979-1984, did not improved the situation. In the 1980s rabies reached its greatest geographical range. With the exception of several districts, the whole territory of the Czech Republic was affected. The oral vaccination of foxes was launched in a few districts adjacent to German borders in 1989 and implemented further thereafter. Since that time continual decline has been visible especially since 1992 when positive effect of oral vaccination has become evident.

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

The last occurence of Rabies was reported in April 2002.The rabies data reported during the last thirteen years indicate the development of the rabies situation in our country since the beginning of oral vaccination. In the period 1989 to 2003, 135 819 animals were examined for rabies. The major parts of them were foxes (more than 50%) followed by cats and dogs participating by 30 % together. Rabies was diagnosed in 6 180 cases during this thirteen year period. The highest number of rabies cases was recorded in 1989 reaching 1 501 cases. The lowest occurrence (3 cases April) was recorded in 2002. The involvement of animal species shows that wild animals participated by 95,6% and domestic animals by 4,4 %. The highest occurrence was recorded in foxes accounting for 90,4% of the total cases. Other wild animals and domestic animals participated only by 5,2% and 4,4% respectively.

The last occurence of Rabies was reported in bat in the year 2005, it was only one sporadic case. There was no outbreak in wildife or domestic animals since April 2002.

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

There was no relevance between finding in animal and Humans. Human rabies occurs very rarely in the Czech Republic and the source is abroad.

Only three cases in human were diagnosed during last 40 years.(1968-1 woman-Fox; 1973-1 man-Dog India; 1989-1 man-Unknown in Vietnam)

Recent actions taken to control the zoonoses

Domestic animals
Preventive vaccination of domestic carnivores and if necessary, domestic herbivores are the principal methods of domestic animals protection. The inactivated tissue-culture vaccines are used exclusively for this purpose.
Wild animals

In total, 9.556 animals were examined for rabies during 2005. One positive case was recorded in bat. The strategy of rabies control is based on reduction of wildlife reservoir of the virus by oral vaccination of foxes.The strategy of vaccine baits distribution twice a year in spring and autumn was applied. Since 1992, only Czech made live attenuated vaccine SAD - Bern has been used for vaccination campaigns. Results of oral vaccination:Control examinations following baits distribution were oriented to baits uptake, rabies diagnosis, tetracycline marking, characterization of virus strains and antibody formation. The indirect measuring of baits uptake was obtained by the examination of fox bones for tetracycline incorporation. As recommended by WHO, after each campaign, wildlife specimens were collected from vaccination area for examination.
In total, 7927 animals were examined for rabies during 2006, no positive case was found.
In total, 4798 animals were examined for rabies during 2007, no positive case was found.
In total, 8917 animals were examined for rabies during 2008, no positive case was found. In total, 8387 animals were examined for rabies during 2009, no positive case was found.In 2009 was last performed oral vaccination of foxes.

2.11.2 Lyssavirus (rabies) in animals

A. Rabies in dogs

Monitoring system

Sampling strategy

The sampling is performed only in suspected animals or in animals which savage people.

Frequency of the sampling

In indicated cases.

Type of specimen taken

clinical investigation and/or laboratory testing

Methods of sampling (description of sampling techniques)

Samples of brain are taken in State Veterinary Institute.

Diagnostic/analytical methods used

Fluorescent Antibody Test (FAT) on smears from hippocampus or medulla oblongata

Vaccination policy

Antirabies vaccination is obligatory acording to Veterinary Act No 166/1999. Every breeder has to ensure that dogs and some other animals kept in captivity, particulary foxes, badgers and martens, are vaccinated against rabies at their age of 3 months and then revaccinated in regular intervals. The vaccination is carry out by private veterinariens at the owners expense

Other preventive measures than vaccination in place

All dogs which bite a man must be clinically investigated by the veterinarien 1st and 5th day after bite.

Control program/mechanisms

The control program/strategies in place

Programme for oral vaccination of foxes was finished at the end of 2009. In case of necesary there is possibility to perform oral emergency vaccination according to epidemiological situation.

Measures in case of the positive findings or single cases

Positive animals are destroyd.

Notification system in place

Rabies is notifieble disease and the notification system is lay down by the Act No. 166/1999, as amended(Veterinary Act).

Results of the investigation

The person responsible for the clinical investigation and laboratory testing have to notify the positive results to the competent authority.

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

The situation in relation to the Rabies is very good and is stable. The last Rabies (in fox) was in the 2002 year and the aim is keep the situation.

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

There is no relevance.

Table Rabies in animals

	Source of information	Sampling unit	Units tested	Total units positive for Lyssavirus (rabies)	Lyssavirus, unspecified	Classical rabies virus (genotype 1)	European Bat Lyssavirus - unspecified
Badgers - wild	SVA	Animal	7	0			
Bats - wild	SVA	Animal	12	0			
Cats	SVA	Animal	198	0			
Cats - stray cats	SVA	Animal	1	0			
Cattle (bovine animals)	SVA	Animal	3	0			
Deer	SVA	Animal	1	0			
Deer - wild - roe deer	SVA	Animal	26	0			
Dogs	SVA	Animal	149	0			
Foxes - wild	SVA	Animal	7844	0			
Marten - wild	SVA	Animal	51	0			
Raccoon dogs - wild	SVA	Animal	1	0			
Sheep	SVA	Animal	1	0			
Solipeds, domestic	SVA	Animal	1	0			
Wild boars - wild	SVA	Animal	11	0			
Other animals - unspecified	SVA	Animal	71	0			

2.12 Q-FEVER

2.12.1 General evaluation of the national situation

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1 ESCHERICHIA COLI, NON-PATHOGENIC

3.1.1 General evaluation of the national situation

3.1.2 Antimicrobial resistance in Escherichia coli, non-pathogenic

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

Test Method Used	Standard methods used for testing

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

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

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

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing

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

3.2 ENTEROCOCCUS, NON-PATHOGENIC

3.2.1 General evaluation of the national situation

3.2.2 Antimicrobial resistance in Enterococcus, non-pathogenic isolates

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing

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

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1 ENTEROBACTER SAKAZAKII

4.1.1 General evaluation of the national situation

4.1.2 Enterobacter sakazakii in foodstuffs

A. Enterobacter sakazakii in foodstuffs

Monitoring system

Sampling strategy

There is no official National program for the monitoring of Enterobacter sakazakii at food business operators. SVA tested 2 samples of milk powder and 2 samples of infant dried formula with negative results. As there was only such a small number of samples we do not provide any additional comments.

Control program/mechanisms

Recent actions taken to control the hazard

Results of the investigation

Table Enterobacter sakazakii in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Enterobacter sakazakii	E. sakazakii
Infant formula - dried	SVA	Single	200g	2	0	
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant	SVA	Single	200g	2	0	

4.2 HISTAMINE

4.2.1 General evaluation of the national situation

4.2.2 Histamine in foodstuffs

A. Histamine in foodstuffs

Monitoring system

Sampling strategy

There is no official National program for monitoring of histamin at retail. CAFIA performed control at retail according to Commission Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs (as amended by EU Regulation No. 1441/2007).

Samples were collected by competent authority as part of an official sampling from 7 regions of the Czech Republic 10-times within a year by the inspectors and analysed in CAFIA laboratory. The sampling by CAFIA was random.

Frequency of the sampling

10-times a year an one sample.

Type of specimen taken

smoked fish products

Methods of sampling (description of sampling techniques)

Sample of 100 grams minimum each of (n=9) is taken in a sterile way, into clean and dry plastic bag. The samples are placed into refrigerated container and immediately sent to the laboratory for investigation. Numbers of subsamples n=9 were taken in accordance with Commission Regulation (EC) No 2073/2005.

Definition of positive finding

Batch in non-conformity - a batch for which the mean value of the sample units exceeds 100 mg/kg or 200 mg/kg.

Diagnostic/analytical methods used

HPLC in accordance with Regulation (EC) No 2073/2005.

Control program/mechanisms

Recent actions taken to control the hazard

CAFIA monitored of histmin in accordance with Commission Regulation (EC) No 2073/2005 (as amended by EU Regulation No. 1441/2007) in smoked fishery products from fish species of the family Scombridae, Clupeidae, Scombresosidae.

Results of the investigation

In total, 11 samples of smoked fishery products (5x mackerel, 1x herring, 4x sardine, 1x tuna) were examined for presence of histamin. None of the samples examined exceeded the mean value 100 mg/kg.

Table Histamine in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units in non-conformity	<= 100 mg/kg	>100 - <= 200 mg/kg	>200 - <= 400 mg/kg	> 400 mg/kg
Fish - Fishery products from fish species associated with a high amount of histidine - not enzyme maturated [1)]	CAFIA	Batch	100g	11	0	11	0	0	0

Comments:

[1)] at retail

4.3 STAPHYLOCOCCAL ENTEROTOXINS

4.3.1 General evaluation of the national situation

4.3.2 Staphylococcal enterotoxins in foodstuffs

A. Staphylococcal enterotoxins in foodstuffs

Monitoring system

Sampling strategy

In 2009 took place in the State Veterinary Administration (SVA) monitoring of staphylococcal enterotoxins in cheeses in the market network according to the Guideline of SVA. Samples were taken at random from refrigeration shelves in supermarkets. Sampling was conducted in eight cities with the highest population to obtain information about exposure of the widest range of consumers in the CZE.

CAFIA performed control at retail according to Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs (as amended by EU Regulation No. 1441/2007).

Samples were collected by a competent authority as part of an official sampling from one region of the Czech Republic twice a year and analysed in the CAFIA laboratory. The sampling by CAFIA was random.

Frequency of the sampling

Monitoring SVA ran from 1st May to 30th September 2009, in total 200 samples of cheese were examined, in each month was sampled one fifth of the samples. Samples were taken at random from refrigeration shelves of supermarkets.
CAFIA performs sampling twice a year.

Type of specimen taken

cheese, milk powder

Methods of sampling (description of sampling techniques)

SVA - For laboratory analysis as part of the monitoring of soft fresh cheeses (100 samples) and partly hand-made steamed cheeses (100 samples) of various origin (Czech Republic, Slovakia, Poland, Germany, France and Austria)were determined. The whole retail package (minimally 200 g)was sampled.

CAFIA - Sample of 600 grams minimum each is taken in a sterile way, into clean and dry plastic bag. The samples are placed into refrigerated container and immediately sent to the laboratory for investigation. Numbers of subsamples n=5 in accordance with Regulation (EC) No 2073/2005 were taken.

Definition of positive finding

SVA - The positive finding means the presence of staphylococal enterotoxins in 25g of sample.

CAFIA - The positive batch means the presence of staphylococal enterotoxins in 25g only in one of all subsamples.

Diagnostic/analytical methods used

European screening method (version II.) for the detection of staphylococcal enterotoxins in milk and milk products recommended in Regulation (EC) No 2073/2005 (Reference: Community reference laboratory for coagulase positive staphylococci).

Results of the investigation

SVA - in 2009, no sample was positive.

CAFIA - in 2009, no sample was positive.

Table Staphylococcal enterotoxins in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Staphylococcal enterotoxins
Cheeses made from cows' milk	SVA	Single	200g	8	0
Cheeses made from cows' milk - hard - made from pasteurised milk [1)]	CAFIA	Batch	600g	14	0
Cheeses made from cows' milk - hard - made from raw or low heat-treated milk [2)]	CAFIA	Batch	600g	2	0
Cheeses made from cows' milk - soft and semi-soft	SVA	Single	200g	18	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk [3)]	SVA	Single	200g	196	0
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk [4)]	SVA	Single	200g	4	0
Dairy products (excluding cheeses)	SVA	Single	200g	4	0
Dairy products (excluding cheeses) - milk powder and whey powder	SVA	Single	200g	2	0
Infant formula - dried - at retail - Surveillance - official controls [5)]	CAFIA	Batch	600g	10	0

Comments:

[1)] at retail
[2)] at retail
[3)] monitoring
[4)] monitoring
[5)] dried infant formula intended for infants below 6 month (n= 1 unit tested), dried follow-on formula (n=9)

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

Epidemiological investigation of outbreaks are performed by regional public health authorities. After completing epidemiological investigation they provide MOH and National Institute of Public Health with written report on outbreak. Reports are mandatory for larger outbreaks. Summaries are published in yearly table.

Description of the types of outbreaks covered by the reporting:

Mainly general outbreaks are reported. Decision on reporting other outbreaks (mainly family outbreaks) are made by regional authorities. Individual data on disease episodes from specific outbreaks are notified in EPIDAT, general infectious disease notification system. Reporting doesn´t depend on causative agent.

National evaluation of the reported outbreaks in the country:

Trends in numbers of outbreaks and numbers of human cases involved

In the past we notified approximately hundred of rather small outbreaks yearly in last several years. Outbreak cases form in average 10% and family outbreaks about 15% of all notified cases. Sporadic cases aform approximately 3/4 of all cases. In the year 2009 we notified 86 outbreaks.

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

Main causative agents in their significance are S.Enteritidis, outbreaks caused by S.Typhimurium and C.jejuni are relatively rare. We observe increase in outbreaks of foodborne diseases of viral origin. The most risky food components are eggs and poultry.

Evaluation of the severity and clinical picture of the human cases

Severe and fatal cases are very rare and are linked with bad health conditions.

Descriptions of single outbreaks of special interest

Outbreaks of particular interest are published in the Bulletin of Epidemiology and Microbiology (NIPH).

Control measures or other actions taken to improve the situation

Control measures performed are done on legal basis.

Table Foodborne Outbreaks: summarised data

	Total number of outbreaks	Outbreaks	Human cases	Hospitalized	Deaths	Number of verified outbreaks
Bacillus	0	0	unknown	unknown	unknown	0
Campylobacter	1	1	6	0	0	0
Clostridium	0	0	unknown	unknown	unknown	0
Escherichia coli, pathogenic	0	0	0	0	0	0
Foodborne viruses	1	1	114	1	0	0
Listeria	1	0	unknown	unknown	unknown	1
Other agents	0	0	unknown	unknown	unknown	0
Parasites	0	0	unknown	unknown	unknown	0
Salmonella	19	18	432	25	0	1
Staphylococcus	0	0	unknown	unknown	unknown	0
Unknown	3	3	255	2	0	0
Yersinia	0	0	0	0	0	0

Table Verified Foodborne Outbreaks: detailed data for Listeria

Please use CTRL for multiple selection fields

L. monocytogenes - L. monocytogenes serovar 1/2a

	Value
Code	CB-HAM
Outbreaks	1
Human cases	9
Hospitalized	9
Deaths	4
Foodstuff implicated	Pig meat and products thereof
More Foodstuff information	
Type of evidence	Laboratory characterization of food and human isolates;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Other setting
Place of origin of problem	Other place of origin
Origin of foodstuff	Domestic
Contributory factors	Cross-contamination
Other Agent (Mixed Outbreaks)	
Comment	food-packed sliced ham, pulsotype 733, 735

Table Verified Foodborne Outbreaks: detailed data for Salmonella

Please use CTRL for multiple selection fields

S. Enteritidis

	Value
Code	UO-PUP
Outbreaks	1
Human cases	147
Hospitalized	5
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory characterization of food and human isolates;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Other setting
Place of origin of problem	Same as setting
Origin of foodstuff	Domestic
Contributory factors	
Other Agent (Mixed Outbreaks)	
Comment	