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 2006

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

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

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[1]. The information has also been forwarded to the European Food Safety Authority (EFSA).
The report contains information on trends and sources of zoonoses and zoonotic agents in Czech Republic during the year 2006. The information covers the occurrence of these diseases and agents in humans, animals, foodstuffs and in some cases also in feedingstuffs. In addition the report includes data on antimicrobial resistance in some zoonotic agents and commensal bacteria as well as information on epidemiological investigations of foodborne outbreaks. Complementary data on susceptible animal populations in the country is also given.
The information given covers both zoonoses that are important for the public health in the whole European Community as well as zoonoses, which are relevant on the basis of the national epidemiological situation.
The report describes the monitoring systems in place and the prevention and control strategies applied in the country. For some zoonoses this monitoring is based on legal requirements laid down by the Community Legislation, while for the other zoonoses national approaches are applied.
The report presents the results of the examinations carried out in the reporting year. A national evaluation of the epidemiological situation, with special reference to trends and sources of zoonotic infections, is given. Whenever possible, the relevance of findings in foodstuffs and animals to zoonoses cases in humans is evaluated.
The information covered by this report is used in the annual Community Summary Report on zoonoses that is published each year by EFSA.

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

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1. ANIMAL POPULATIONS

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

A. Information on susceptible animal population

Sources of information:

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 Regional Veterinary Administrations

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

Numbers of animals and holdings related to 31. 12. 2006

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

Report involves numbers of animals and numbers of holdings. At the time we have no data about numbers of herds and flocks.

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

The number of cattle holdings increased whereas the number of animals slightly decreased. The same trends were in sheep population. Number of goats increased slightly.The same trends were in pigs. Number of Gallus gallus were appreximatelly in the same level as in 2005, but number of geese and ducks were going down. Number of turkeys and holdings with turkeys were going down too.

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

Animal species	Category of animals	Number of herds or flocks	Year*	Number of holdings	Year*	Number of slaughtered animals	Year*	Livestock numbers (live animals)	Year*
Cattle (bovine animals)	dairy cows and heifers					166595			
	meat production animals					128049			
	calves (under 1 year)					9589			
	in total		22734			304233		1430713	
Deer	farmed - in total			117		115		4620	
Ducks	parent breeding flocks	24		23				26000	
	mixed flocks/ holdings	0		0				0	
	grandparent breeding flocks	4		3				8000	
	meat production flocks	12		12				1100000	
	breeding flocks, unspecified - in total	31		28				46000	
	elite breeding flocks	3		2				12000	
	in total	43		40		3136094		1146000	
Gallus gallus (fowl)	grandparent breeding flocks, unspecified - in total	6		3				19000	
	elite breeding flocks for meat production line	0		0				0	
	broilers	724		388				192000000	
	elite breeding flocks, unspecified - in total	6		3				12000	
	parent breeding flocks, unspecified - in total	315		84				2250000	
	breeding flocks, unspecified - in total	327		90				2281000	
	mixed flocks/ holdings	0		0					
	breeding flocks for meat production line - in total	301		79				2100000	
	laying hens	281		92				6422694	
	grandparent breeding flocks for meat production line	0		0				0	
	parent breeding flocks for egg production line	14		5				150000	
	parent breeding flocks for meat production line	301		79				2100000	
	elite breeding flocks for egg production line	6		3				12000	

	grandparent breeding flocks for egg production line	6		3				19000	
	breeding flocks for egg production line - in total	26		11				181000	
	in total	1332		570		145015908		200703694	
Geese	breeding flocks, unspecified - in total	23		13				33000	
	mixed flocks/ holdings	0		0				0	
	grandparent breeding flocks	4		2				7500	
	parent breeding flocks	15		9				18000	
	meat production flocks	6		4				51000	
	elite breeding flocks	4		2				7500	
	in total	29		17				84000	
Goats	meat production animals			669				946	
	mixed herds			1245				1324	
	animals under 1 year			3203				4458	
	animals over 1 year			3203				9864	
	milk goats			1290				12132	
	in total			3203		719		14402	
Pigs	mixed herds			0				0	
	breeding animals			1215				322146	
	fattening pigs			2978				1022861	
	in total			4193		3883175		2736135	
Reindeers	farmed - in total			0				0	
Sheep	milk ewes			424				1242	
	mixed herds			5512				12791	
	animals under 1 year (lambs)			7709				53389	
	animals over 1 year			7709				139224	
	meat production animals			1773				47436	
	in total			7709		14551		148412	
Solipeds, domestic	horses - in total			8689		349		61469	
Turkeys	parent breeding flocks	14		2				25000	
	elite breeding flocks	0		0				0	
	breeding flocks, unspecified - in total	14		2				25000	
	meat production flocks	183		106				1710000	
	mixed flocks/ holdings	0		0				0	
	grandparent breeding flocks	0		0				0	
	in total	197		108		827203		1735000	
Wild boars	farmed - in total			9				109	
Quails	in total			9		16842		5324	
Ratites (ostrich, emu, nandu)	at farm			158		1766		4099	

Footnote

Number of slaughtered ducks is number slaughtered ducks and geese together

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 safty 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 Salmonellosis is the most frequenly reported foodborne disease. The main sources of infection in humans were products form eggs and poultry meat.

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

There is a sporadic relevance between finding in animals and finding in human. The main source of infection is through to foodstuffs of animal origin.

Recent actions taken to control the zoonoses

Based of the result of baseline study in laying hens flocks and with the aim to reduce occurence of Salmonella in laying hans flocks, the State Veterinary Administration, Ministry of Agriculture and Poultry Breeding Association prepared Salmonella control programme in breeding flocks and laying hens flocks producing table eggs. These two programmes are in force since 1. 1. 2007.

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.

Table Salmonella in humans - Species/ serotype distribution

Salmonella	Cases 24132	Cases Inc. 0	Autochthon cases 23992	Autochthon Inc. 0	Imported cases 140	Imported Inc. 0	Unknown status 0
S. Enteritidis	23596		23456		140		
S. Typhimurium	536		536		0		

Table Salmonella in humans - Age distribution

Age Distribution	S. Enteritidis			S. Typhimurium			Salmonella spp.		
	All	M	F	All	M	F	All	M	F
<1 year	1067	563	504	55	33	22			
1 to 4 years	6403	3357	3046	170	82	88			
5 to 14 years	4549	2466	2083	87	48	39			
15 to 24 years	2157	1015	1142	52	27	25			
25 to 44 years	4028	1745	2283	64	31	33			
45 to 64 years	3384	1402	1982	69	25	44			
65 years and older	2008	661	1347	39	16	23			
Age unknown									
Total :	23596	11209	12387	536	262	274	0	0	0

Table Salmonella in humans - Seasonal distribution

Month	S. Enteritidis	S. Typhimurium	Salmonella spp.
	Cases	Cases	Cases
January	982	35	
February	741	32	
March	837	31	
April	988	18	
May	1878	65	
June	2172	56	
July	2657	85	
August	3155	44	
September	3313	54	
October	3549	55	
November	2166	38	
December	1156	23	
not known			
Total :	23594	536	0

2.1.3. Salmonella in foodstuffs

A. Salmonella spp. in eggs and egg products

Monitoring system

Sampling strategy

The holdings must make regular controls on the general conditions of production in their establishment – GHP, GMP HACCP.

B. Salmonella spp. in broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The sampling was carry out in carcasses in slaughterhouses after chilling. Monitoring took place in accordance with Directive 2003/ 99/ EC.

At meat processing plant

At retail

The sampling is voluntary.

Frequency of the sampling

At slaughterhouse and cutting plant

Once a month

Type of specimen taken

At slaughterhouse and cutting plant

Other: neck skin samples

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. Minimal weight each of sampl was 10g.

Definition of positive finding

At slaughterhouse and cutting plant

≥1cfu/ 25 g

Diagnostic/ analytical methods used

At slaughterhouse and cutting 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 programmes 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 ivestigation the competent authority takes measures to prevent spreding 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.

Results of the investigation

From 66 samples neck skin were the most frequently positive finding S.group C1 (12 cases), than S. enteritidis (9 cases)and S. montevideo (7 cases), S. infantis (7 cases), S. ohio (6 cases), S. derby(5 cases), S. typhimurium (4 cases), Salmonella newport (4 cases), Salmonella kentucky (4 cases), Salmonella sp.(3 cases), S. braenderup (1 case), S. hadar (1 case), S. choleraesuis (1 case), S. gallinarum (1 case), S. group C2 (1 case).
Salmonella sp. in poultry meat and products thereof:
In 2006, the total of 23 samples were analysed for Salmonella sp. at retail by CAFIA., out of which 2 samples (8.7%) were positive. Salmonella sp. were found in a broiler meat products - raw but intended to be eaten cooked.

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.

C. Salmonella spp. in turkey meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The sampling is carry out in carcasses at the slaughterhouses. The samples have been taken in accordance with Directive 2003/ 99/ EC. Samples have been taken from the most consistently contaminanted sites of carcass in half way through the slaughter day and after chilling.

At meat processing plant

The samples have been taken in accordance with Directive 2003/ 99/ EC. The final products are taken in the end of production.

At retail

The sampling is voluntary.

Frequency of the sampling

At slaughterhouse and cutting plant

Once a month

At meat processing plant

Once a month

At retail

Other: random

Type of specimen taken

At slaughterhouse and cutting plant

Other: neck skin

At meat processing plant

Other: final product

At retail

Other: final product

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

Neck skin samples are taken randomly from 15 carcasses of turkey after chilling.

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

the samples were aseptically cut off and placed aseptically into a sample container

Definition of positive finding

At slaughterhouse and cutting plant

≥1cfu/ 25 g

At meat processing plant

≥1cfu/ 25 g

At retail

≥1cfu/ 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

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 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.

Measures in case of the positive findings or single cases

In the case of positive result of the ivestigation the competent authority takes measures to prevent spreding 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.

D. Salmonella spp. in pig meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The sampling was randomly and carry out on the surface of carcasses in slaughterhouses. In the region was choosen slaughterhouses in which was made sampling.The samples were taken in accordance with Directive 2003/ 99/ EC. Samples were taken from the most consistenly contaminanted sites of carcass in half way through the slaughter day and before chilling.

At retail

There was made the controls by CAFIA. The sampling was randomly.

Frequency of the sampling

At slaughterhouse and cutting plant

Once a month

At retail

Other: randomly

Type of specimen taken

At slaughterhouse and cutting plant

Surface of carcass

At retail

Other: final product

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

Five carcasses of pigs were sampled randomly before chilling using the non-destructive method with swabs (according ISO/ FDIS 1704:2003(E)). 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, first swab made with moist dossil and than with dry dossil. The alternative method was the dectructive method. Four samples of the muscle tissue cover 5 cm2 each (total 20 cm2) were taken before chilling too. Pieces of tissue were cut off a slice of 5 cm2 with maximum thickness of 5 mm with sterile instrument.
The samples were aseptically cut off and placed aseptically into a sample container and transfered to the laboratory.

At retail

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

Definition of positive finding

At slaughterhouse and cutting plant

≥1cfu/ 25 g

At meat processing plant

At retail

≥1cfu/ 25 g

Diagnostic/ analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At retail

Bacteriological method: ISO 6579:2002

Preventive measures in place

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 programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.
Salmonella sp. in red meat and products thereof:
In 2006, the total of 63 samples were analysed for Salmonella sp. by CAFIA. None of the samples analysed contained this pathogen.

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 spreding of the infection to the food chain.

Notification system in place

The positive result of the bacteriogical 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.

E. Salmonella spp. in bovine meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The sampling was randomly and carry out on the surface of carcasses in slaughterhouses. In the region was choosen slaughterhouses in which was made sampling.The samples were taken in accordance with Directive 2003/ 99/ EC. Samples were taken from the most consistenly contaminanted sites of carcass in half way through the slaughter day and before chilling

Frequency of the sampling

At slaughterhouse and cutting plant

Once a month

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 of bovine animals were sampled randomly before chilling using the non-destructive method with swabs (according ISO/ FDIS 1704:2003(E)). The samples were taken from four sites of carcass - rump, flank, brisket, neck. Each sample was taken from area-100cm2, first swab made with moist dossil and than with dry dossil. The alternative method was the dectructive method. Four samples of the muscle tissue cover 5 cm2 each (total 20 cm2) were taken before chilling too. Pieces of tissue were cut off a slice of 5 cm2 with maximum thickness of 5 mm with sterile instrument.
The samples were aseptically cut off and placed aseptically into a sample container and transfered to the laboratory.

Definition of positive finding

At slaughterhouse and cutting plant

≥1cfu/ 25 g

Diagnostic/ analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

Preventive measures in place

creation and 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 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.

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 spreding 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.

F. 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 Administrtion 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. The sampling was a single survey.
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. Depend on a survey.
The samples have been taken by NIPH during the whole year randomly every three months.

Type of specimen taken

Other: food non 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.

Recent actions taken to control the zoonoses

CAFIA monitoring of zoonoses according to Commission Regulation 2073/ 2005(dried infant formula, pastry with egg filling, ready-to-eat food, meat products, etc.).

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 spreding of the infection.

Results of the investigation

Salmonella sp. in other food:
In 2006, the total of 610 samples were analysed for Salmonella sp. by CAFIA, out of which 10 samples (1.63%) were positive. Salmonella sp. were found in delikatessen products, infant folow on formulae and pastry with heat-treated cream.

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Ohio	S. Braenderup	S. Montevideo	S. Newport	S. Hadar	S. Choleraesuis	S. Infantis	S. Kentucky	S. group C2	S. Derby	S. group C1	S. Gallinarum
Meat from broilers (Gallus gallus)																				
fresh	SVA	batch	25g	3358	66	9	4	3	6	1	7	4	1	1	7	4	1	5	12	1
meat products																				
raw but intended to be eaten	CAFIA	batch	25g	12	2	2														
cooked																				
cooked, ready-to-eat	CAFIA	batch	25g	9	0															
Meat from turkey																				
meat products																				
cooked, ready-to-eat	CAFIA	batch	25g	2	0															

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Milk, cows'								
raw milk for manufacture								
intended for manufacture of pasteurised/ UHT products	SVA	batch	25g	22	0			
pasteurised milk	SVA	batch	25g	171	0			
Milk, goats'								
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products	SVA	batch	25g	5	0			
Cheeses made from cows' milk								
soft and semi-soft	SVA	batch	25g	169	0			
made from pasteurised milk	CAFIA/ SVA	batch	25g	205	0			
hard								
made from pasteurised milk	SVA	batch	25g	299	0			
Dairy products (excluding cheeses)								
butter								
made from raw or low heat-treated milk	SVA	batch	25g	340	0			
cream								
made from raw or low heat-treated milk	SVA	batch	25g	71	0			
ice-cream	SVA	batch	25g	197	0			
dairy products, not specified								
ready-to-eat								
made from pasteurised milk	SVA	batch	25g	225	0			
Infant formula								
dried	SVA	batch	25g	4337	0			

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Tennessee	S. Dublin	S. Derby	S. group C2	S. Montevideo
Meat from pig													
fresh	SVA	batch	100cm2/ cm3	4077	10	0	3			1	5	1	
minced meat													
intended to be eaten raw	CAFIA	batch	25g	26	0								
intended to be eaten cooked	CAFIA	batch	25g	2	0								
meat products													
cooked, ready-to-eat	CAFIA	batch	25g	35	0								
Meat from bovine animals													
fresh	SVA	batch	100cm2/ cm3	3466	8	0	3	1	2	0	1	0	1

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Sprouted seeds								
ready-to-eat	CAFIA	batch	25g	2	0			
Fruits and vegetables								
precut								
ready-to-eat	CAFIA	batch	25g	10	0			
Juice								
fruit juice								
unpasteurised	CAFIA	batch	25ml	1	0			
vegetable juice								
unpasteurised	CAFIA	batch	25ml	1	0			
Infant formula	CAFIA	batch	25g	4	2	2		
dried								
intended for infants below 6 months	CAFIA	batch	25g	3	0			
Bakery products								
pastry								
with egg filling	CAFIA	batch	25g	25	0			
desserts								
containing heat-treated cream	CAFIA	batch	25g	270	6	6		
Other processed food products and prepared dishes								
pasta	CAFIA	batch	25g	22	0			
unspecified								
ready-to-eat foods								
chilled	CAFIA	batch	25g	258	2	2		
ices and similar frozen desserts	CAFIA	batch	25g	14	0			

2.1.4. Salmonella in animals

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

Monitoring system

Sampling strategy

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

The sampling strategy was in accordance with Council Directive 92/ 117/ EEC of 17 December 1992 concerning measures for protection against specified zoonoses and specified zoonotic agents in animals and products of animal origin in order to prevent outbreaks of food-borne infections and intoxications (OJ L 62, 15.3.1993, p. 38).

Laying hens flocks

The owner must, at his own expense, have samples taken for analysis for the detection of Salmonella either in an approved national laboratory recognized by the competent authority, with the minimum levels of sampling indicated by the State veterinary administration.

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

At the age of 4 weeks old chicks weeks

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

Every every 2 weeks during the laying period weeks

Laying hens: Day-old chicks

Every flock is sampled

Laying hens: Rearing period

At the age of 4 weeks old chicks weeks

Laying hens: Production period

Every 12 weeks during the laying period 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

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)

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 with regard on the number of birds in the building. 1 - 20 birds 1 - 20 samples, 21 - 29 birds 20 samples, 30 - 39 birds 25 samples, 40 - 49 birds 30 samples, 50 - 59 birds 35 samples, 60 - 89 birds 40 samples, 90 - 199 birds 50 samples, 200 - 499 birds 55 samples, 500 and more birds 60 samples.

Breeding flocks: Production period

Pooled samples from faces with regard on the number of birds in the building. 1 - 20 birds 1 - 20 samples, 21 - 29 birds 20 samples, 30 - 39 birds 25 samples, 40 - 49 birds 30 samples, 50 - 59 birds 35 samples, 60 - 89 birds 40 samples, 90 - 199 birds 50 samples, 200 - 499 birds 55 samples, 500 and more birds 60 samples.

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.

Laying hens: Rearing period

Pooled samples from faces with regard on the number of birds in the building. 1 - 20 birds 1 - 20 samples, 21 - 29 birds 20 samples, 30 - 39 birds 25 samples, 40 - 49 birds 30 samples, 50 - 59 birds 35 samples, 60 - 89 birds 40 samples, 90 - 199 birds 50 samples, 200 - 499 birds 55 samples, 500 and more birds 60 samples.

Laying hens: Production period

Pooled samples from faces with regard on the number of birds in the building. 1 - 20 birds 1 - 20 samples, 21 - 29 birds 20 samples, 30 - 39 birds 25 samples, 40 - 49 birds 30 samples, 50 - 59 birds 35 samples, 60 - 89 birds 40 samples, 90 - 199 birds 50 samples, 200 - 499 birds 55 samples, 500 and more birds 60 samples.

Case definition

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

Where the result of monitoring detected presence of Salmonella enteritidis or Salmonella typhimurium in a breeding flock, notification of result was performed. The person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock shall notify the results to the competent authority.
The competent authority performed officially sampling in order to confirm the initial results. A sample of birds must be taken at
random from within each house of birds on the farm. For the
purposes of examination, the birds from each house must be grouped into batches of five and samples of liver, ovary and intestines taken from each bird in the batch must be examined for salmonella.

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

Where the result of monitoring detected presence of Salmonella enteritidis or Salmonella typhimurium in a breeding flock, notification of result was performed. The person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock shall notify the results to the competent authority.
The competent authority performed officially sampling in order to confirm the initial results. A sample of birds must be taken at
random from within each house of birds on the farm. For the
purposes of examination, the birds from each house must be grouped into batches of five and samples of liver, ovary and intestines taken from each bird in the batch must be examined for salmonella.

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

Where the result of monitoring detected presence of Salmonella enteritidis or Salmonella typhimurium in a breeding flock, notification of result was performed. The person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock shall notify the results to the competent authority.
The competent authority performed officially sampling in order to confirm the initial results. A sample of birds must be taken at
random from within each house of birds on the farm. For the
purposes of examination, the birds from each house must be grouped into batches of five and samples of liver, ovary and intestines taken from each bird in the batch must be examined for salmonella.

Laying hens: Day-old chicks

Where the result of monitoring detected presence of Salmonella enteritidis or Salmonella typhimurium in a breeding flock, notification of result was performed. The person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock shall notify the results to the competent authority.
The competent authority performed officially sampling in order to confirm the initial results. A sample of birds must be taken at
random from within each house of birds on the farm. For the
purposes of examination, the birds from each house must be grouped into batches of five and samples of liver, ovary and intestines taken from each bird in the batch must be examined for salmonella.

Laying hens: Rearing period

Where the result of monitoring detected presence of Salmonella enteritidis or Salmonella typhimurium in a breeding flock, notification of result was performed. The person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock shall notify the results to the competent authority.
The competent authority performed officially sampling in order to confirm the initial results. A sample of birds must be taken at
random from within each house of birds on the farm. For the
purposes of examination, the birds from each house must be grouped into batches of five and samples of liver, ovary and intestines taken from each bird in the batch must be examined for salmonella.

Laying hens: Production period

Where the result of monitoring detected presence of Salmonella enteritidis or Salmonella typhimurium in a breeding flock, notification of result was performed. The person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock shall notify the results to the competent

authority.
The competent authority performed officially sampling in order to confirm the initial results. A sample of birds must be taken at
random from within each house of birds on the farm. For the
purposes of examination, the birds from each house must be grouped into batches of five and samples of liver, ovary and intestines taken from each bird in the batch must be examined for salmonella.

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

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

Laying hens: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Laying hens: At slaughter

Bacteriological method: ISO 6579:2002

Eggs at packing centre (flock based approach)

Bacteriological method: ISO 6579:2002

Vaccination policy

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

Vaccination is voluntary and most of the breeding flocks were in the year 2006 vaccinated against S. enteritidis.

Laying hens flocks

Vaccination in laying hens producing table eggs was voluntary and most of the flocks of laying hens have not been vaccinated against any serotype of Salmonella spp.

Control program/ mechanisms

The control program/ strategies in place

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

The control program in breeding flocks was in accordance with Council Directive 92/ 117/ EEC of 17 December 1992 concerning measures for protection against specified zoonoses and specified zoonotic agents in animals and products of animal origin in order to prevent outbreaks of food-borne infections and intoxications (OJ L 62, 15.3.1993, p. 38).

Laying hens flocks

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 (§ 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.
The Methodology of Animal Health Control and Specific Prophylaxis of Contagious Diseases lay down basic principles of the system. This methodology is updated annually and it is binding for all animal breeders, based on its approval by the Ministry of Agriculture of the Czech Republic and its publication in the official Journal of the Ministry of Agriculture.

Measures in case of the positive findings or single cases

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

Measures in case of the positive finding was in accordance with Council Directive 92/ 117/ EEC, Annex II.

Laying hens flocks

The Veterinary measures are imposed by the Regional Veterinary Administration.
No bird may leave the house with the exception of:
1, all birds in the house are slaughtered (official veterinarian of the slaughterhouse must be informed about the decision of the RVA.
2, all birds in the house are slaughtered and destroyed
All birds with clinical signs are destroyed and other birds are treated.
Table eggs from this holding must be processing by heat treating.
After the house occupied by a flock infected with Salmonella enteritidis or Salmonella

typhimurium has been emptied of birds, effective cleaning and disinfection must be carried out, including safe disposal of manure or litter in accordance with procedures laid down by the Regional Veterinary Administration.

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 - breeding flocks for meat production and broiler flocks

Monitoring system

Sampling strategy

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

The sampling strategy was in accordance with Council Directive 92/ 117/ EEC of 17 December 1992 concerning measures for protection against specified zoonoses and specified zoonotic agents in animals and products of animal origin in order to prevent outbreaks of food-borne infections and intoxications (OJ L 62, 15.3.1993, p. 38).

Broiler flocks

In the year 2006 there was no monitoring programme for Salmonella in broiler flocks.

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

At the age of 4 weeks weeks

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

Other: Pullets 2 weeks prior to the laying phase and than every 14 days during the laying period

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

Samples are taken from internal wall of transport boxes, 10 swabs from each delivery. All fallen chicks (maximum 60 chicks) were tested as well.

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

Pooled samples from faces with regard on the number of birds in the building. 1 - 20 birds 1 - 20 samples, 21 - 29 birds 20 samples, 30 - 39 birds 25 samples, 40 - 49 birds 30 samples, 50 - 59 birds 35 samples, 60 - 89 birds 40 samples, 90 - 199 birds 50 samples, 200 - 499 birds 55 samples, 500 and more birds 60 samples.

Breeding flocks: Production period

Pooled samples from faces with regard on the number of birds in the building. 1 - 20 birds 1 - 20 samples, 21 - 29 birds 20 samples, 30 - 39 birds 25 samples, 40 - 49 birds 30 samples, 50 - 59 birds 35 samples, 60 - 89 birds 40 samples, 90 - 199 birds 50 samples, 200 - 499 birds 55 samples, 500 and more birds 60 samples.

Case definition

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

Where the result of monitoring detected presence of Salmonella enteritidis or Salmonella typhimurium in a breeding flock, confirmation of the result was performed. The person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock shall notify the results to the competent authority.
The competent authority performed officially sampling in order to confirm the initial results. A sample of birds must be taken at
random from within each house of birds on the farm. For the
purposes of examination, the birds from each house must be grouped into batches of five and samples of liver, ovary and intestines taken from each bird in the batch must be examined for salmonella.

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

Where the result of monitoring detected presence of Salmonella enteritidis or Salmonella typhimurium in a breeding flock, confirmation of the result was performed. The person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock shall notify the results to the competent authority.
The competent authority performed officially sampling in order to confirm the initial results. A sample of birds must be taken at
random from within each house of birds on the farm. For the
purposes of examination, the birds from each house must be grouped into batches of five and samples of liver, ovary and intestines taken from each bird in the batch must be examined for salmonella.

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

Where the result of monitoring detected presence of Salmonella enteritidis or Salmonella typhimurium in a breeding flock, notification of result was performed. The person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock shall notify the results to the competent authority.
The competent authority performed officially sampling in order to confirm the initial results. A sample of birds must be taken at
random from within each house of birds on the farm. For the
purposes of examination, the birds from each house must be grouped into batches of five and samples of liver, ovary and intestines taken from each bird in the batch must be examined for salmonella.

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 voluntary and the most of the breeding folcks have been vaccinated.

Broiler flocks

Vaccination is voluntary and in broilers flocks is not performed.

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

Monitoring system

Sampling strategy

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

There was no official and approval monitoring and control program for Salmonella spp. in the year 2006. The sampling is carrying out in animals with clinical signs or in the suspected herds. The samples were taken either in holdings and/ or in slaughterhouse. The samples from clinically ill or suspected animals were taken by private veterinarians.

Meat production flocks

There was no official and approval monitoring and control program for Salmonella spp. in the year 2006. The sampling is carrying out in animals with clinical signs or in the suspected herds. The samples were taken either in holdings and/ or in slaughterhouse. The samples from clinically ill or suspected animals were taken by private veterinarians.

Frequency of the sampling

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

Other: at clinically ill or at suspected animals

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

Other: at clinically ill or at suspected animals

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

Other: at clinically ill or at suspected animals

Meat production flocks: Day-old chicks

Other: at clinically ill or at suspected animals

Meat production flocks: Rearing period

Other: at clinically ill or at suspected animals

Meat production flocks: Before slaughter at farm

Other: at clinically ill or at suspected animals

Meat production flocks: At slaughter (flock based approach)

Other: at clinically ill or at suspected animals

Methods of sampling (description of sampling techniques)

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

For sampling are usually used swabs or faeces.

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

For sampling are usually used swabs or faeces.

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

For sampling are usually used swabs or faeces.

Meat production flocks: Day-old chicks

For sampling are usually used swabs or faeces.

Meat production flocks: Rearing period

For sampling are usually used swabs or faeces.

Meat production flocks: Before slaughter at farm

For sampling are usually used swabs or faeces.

Meat production flocks: At slaughter (flock based approach)

For sampling are usually used swabs or faeces.

Case definition

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

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

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

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: Day-old chicks

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: Rearing period

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: Before slaughter at farm

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: At slaughter (flock based approach)

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

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

Meat production flocks: Day-old chicks

Bacteriological method: ISO 6579:2002

Meat production flocks: Rearing period

Bacteriological method: ISO 6579:2002

Meat production flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Meat production flocks: At slaughter (flock based approach)

Bacteriological method: ISO 6579:2002

Vaccination policy

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

Vaccination is voluntary.

Meat production flocks

Vaccination is voluntary.

Control program/ mechanisms

The control program/ strategies in place

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

There is no regional or national control program.

Meat production flocks

There is no regional or national control program.

Measures in case of the positive findings or single cases

In the case of positive results of examination for invasive Salmonella serotype, the appropriate RVA shall issue emergency veterinary measures in accordance with Veterinary Act.

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 for Salmonella enteritidis or Salmonella typhimurium in holding, 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.

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.

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

Monitoring system

Sampling strategy

Breeding flocks

There was no official and approval monitoring and control program for Salmonella spp. in the year 2006. The sampling is carrying out in animals with clinical signs or in the suspected herds. The samples were taken either in holdings and/ or in slaughterhouse. The samples from clinically ill or suspected animals were taken by private veterinarians.

Frequency of the sampling

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

Other: at clinically ill or at suspected animals

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

Other: at clinically ill or at suspected animals

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

Other: at clinically ill or at suspected animals

Meat production flocks: Day-old chicks

Other: at clinically ill or at suspected animals

Meat production flocks: Rearing period

Other: at clinically ill or at suspected animals

Meat production flocks: Before slaughter at farm

Other: at clinically ill or at suspected animals

Meat production flocks: At slaughter (flock based approach)

Other: at clinically ill or at suspected animals

Methods of sampling (description of sampling techniques)

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

For sampling are usually used swabs or faeces.

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

For sampling are usually used swabs or faeces.

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

For sampling are usually used swabs or faeces.

Meat production flocks: Day-old chicks

For sampling are usually used swabs or faeces.

Meat production flocks: Rearing period

For sampling are usually used swabs or faeces.

Meat production flocks: Before slaughter at farm

For sampling are usually used swabs or faeces.

Meat production flocks: At slaughter (flock based approach)

For sampling are usually used swabs or faeces.

Case definition

Breeding flocks: Day-old chicks

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Breeding flocks: Rearing period

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Breeding flocks: Production period

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: Day-old chicks

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: Rearing period

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: Before slaughter at farm

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: At slaughter (flock based approach)

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Diagnostic/ analytical methods used

Breeding flocks: Day-old chicks

Bacteriological method: ISO 6579:2002

Breeding flocks: Rearing period

Bacteriological method: ISO 6579:2002

Breeding flocks: Production period

Bacteriological method: ISO 6579:2002

Meat production flocks: Day-old chicks

Bacteriological method: ISO 6579:2002

Meat production flocks: Rearing period

Bacteriological method: ISO 6579:2002

Meat production flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Meat production flocks: At slaughter (flock based approach)

Bacteriological method: ISO 6579:2002

Vaccination policy

Breeding flocks

Vaccination is voluntary.

Meat production flocks

Vaccination is voluntary.

Control program/ mechanisms

The control program/ strategies in place

Breeding flocks

There is no regional or national control program.

Meat production flocks

There is no regional or national control program.

Measures in case of the positive findings or single cases

Breeding flocks

In the case of positive results of examination for invasive Salmonella serotype, the appropriate RVA shall issue emergency veterinary measures in accordance with Veterinary Act.

Meat Production flocks

In the case of positive results of examination for invasive Salmonella serotype, the appropriate RVA shall issue emergency veterinary measures in accordance with Veterinary Act.

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 for Salmonella enteritidis or Salmonella typhimurium in holding, 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 year 2005 were analysed 4 samples and 1 sample was postivive (25 %)- S. serotyp unspecifyied.
During the year 2004 were only sporadic finding in geese. A total of 7 samples were analysed . A total of 1(14,3%) sample were found positive for Salmonella Typhimurium. In the year 2003, there were 15 samples without positive finding. In the year 2002, there were 19 samples without positive finding.
In the year 2006 were analysed 19 samples, 3 samples were positive (15,8%).

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.

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

Monitoring system

Sampling strategy

Breeding flocks

There was no official and approval monitoring and control program for Salmonella spp. in the year 2006. The sampling is carrying out in animals with clinical signs or in the suspected herds. The samples were taken either in holdings and/ or in slaughterhouse. The samples from clinically ill or suspected animals were taken by private veterinarians.

Meat production flocks

There was no official and approval monitoring and control program for Salmonella spp. in the year 2006. The sampling is carrying out in animals with clinical signs or in

the suspected herds. The samples were taken either in holdings and/ or in slaughterhouse. The samples from clinically ill or suspected animals were taken by private veterinarians.

Frequency of the sampling

Breeding flocks: Day-old chicks

Other: at clinically ill or at suspected animals

Breeding flocks: Rearing period

Other: at clinically ill or at suspected animals

Breeding flocks: Production period

Other: at clinically ill or at suspected animals

Meat production flocks: Day-old chicks

Other: at clinically ill or at suspected animals

Meat production flocks: Rearing period

Other: at clinically ill or at suspected animals

Meat production flocks: Before slaughter at farm

Other: at clinically ill or at suspected animals

Meat production flocks: At slaughter (flock based approach)

Other: at clinically ill or at suspected animals

Type of specimen taken

Breeding flocks: Day-old chicks

Meconium

Breeding flocks: Rearing period

Faeces

Breeding flocks: Production period

Faeces

Meat production flocks: Day-old chicks

Faeces

Meat production flocks: Rearing period

Faeces

Meat production flocks: Before slaughter at farm

Faeces

Meat production flocks: At slaughter (flock based approach)

Faeces

Methods of sampling (description of sampling techniques)

Breeding flocks: Day-old chicks

For sampling are usually used swabs or meconium.

Breeding flocks: Rearing period

For sampling are usually used swabs or faeces.

Breeding flocks: Production period

For sampling are usually used swabs or faeces.

Meat production flocks: Day-old chicks

For sampling are usually used swabs or faeces.

Meat production flocks: Rearing period

For sampling are usually used swabs or faeces.

Meat production flocks: Before slaughter at farm

For sampling are usually used swabs or faeces.

Meat production flocks: At slaughter (flock based approach)

For sampling are usually used swabs or faeces.

Case definition

Breeding flocks: Day-old chicks

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Breeding flocks: Rearing period

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Breeding flocks: Production period

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: Day-old chicks

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: Rearing period

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: Before slaughter at farm

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Meat production flocks: At slaughter (flock based approach)

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Diagnostic/ analytical methods used

Breeding flocks: Day-old chicks

Bacteriological method: ISO 6579:2002

Breeding flocks: Rearing period

Bacteriological method: ISO 6579:2002

Breeding flocks: Production period

Bacteriological method: ISO 6579:2002

Meat production flocks: Day-old chicks

Bacteriological method: ISO 6579:2002

Meat production flocks: Rearing period

Bacteriological method: ISO 6579:2002

Meat production flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Meat production flocks: At slaughter (flock based approach)

Bacteriological method: ISO 6579:2002

Vaccination policy

Breeding flocks

Vaccination is voluntary.

Meat production flocks

Vaccination is voluntary.

Other preventive measures than vaccination in place

Breeding flocks

Vaccination is voluntary.

Meat production flocks

Vaccination is voluntary.

Control program/ mechanisms

The control program/ strategies in place

Breeding flocks

There is no regional or national control program.

Meat production flocks

There is no regional or national control program.

Measures in case of the positive findings or single cases

In the case of positive results of examination for invasive Salmonella serotype, the appropriate RVA shall issue emergency veterinary measures in accordance with Veterinary Act.

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 for Salmonella enteritidis or Salmonella typhimurium in holding, 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.

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.

F. Salmonella spp. in pigs

Monitoring system

Sampling strategy

Breeding herds

There was no official and approval monitoring and control program for Salmonella spp. in the year 2006. The sampling is carrying out in animals with clinical signs or in the suspected herds. The samples were taken either in holdings and/ or in slaughterhouse. The samples from clinically ill or suspected animals were taken by private veterinarians.

Multiplying herds

There was no official and approval monitoring and control program for Salmonella spp. in the year 2006. The sampling is carrying out in animals with clinical signs or in the suspected herds. The samples were taken either in holdings and/ or in slaughterhouse. The samples from clinically ill or suspected animals were taken by private veterinarians.

Fattening herds

There was no official and approval monitoring and control program for Salmonella spp. in the year 2006. The sampling is carrying out in animals with clinical signs or in the suspected herds. The samples were taken either in holdings and/ or in slaughterhouse. The samples from clinically ill or suspected animals were taken by private veterinarians.

Frequency of the sampling

Breeding herds

Other: at clinically ill or at suspected animals

Multiplying herds

Other: at clinically ill or at suspected animals

Fattening herds at farm

Other: at clinically ill or at suspected animals

Fattening herds at slaughterhouse (herd based approach)

Other: at clinically ill or at suspected animals

Type of specimen taken

Breeding herds

Faeces

Multiplying herds

Faeces

Fattening herds at farm

Faeces

Fattening herds at slaughterhouse (herd based approach)

Faeces

Methods of sampling (description of sampling techniques)

Breeding herds

For sampling are usually used swabs or faeces.

Multiplying herds

For sampling are usually used swabs or faeces.

Fattening herds at farm

For sampling are usually used swabs or faeces.

Fattening herds at slaughterhouse (herd based approach)

For sampling are usually used swabs or faeces.

Case definition

Breeding herds

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Multiplying herds

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Fattening herds at farm

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Fattening herds at slaughterhouse (herd based approach)

The positive finding must be confirmed by the bacteriological laboratory investigation with positive results for Salmonella Enteritidis or Salmonella Typhimurium.

Diagnostic/ analytical methods used

Breeding herds

Bacteriological method: ISO 6579:2002

Multiplying herds

Bacteriological method: ISO 6579:2002

Fattening herds at farm

Bacteriological method: ISO 6579:2002

Fattening herds at slaughterhouse (herd based approach)

Bacteriological method: ISO 6579:2002

Vaccination policy

Breeding herds

Vaccination is voluntary.

Multiplying herds

Vaccination is voluntary.

Fattening herds

Vaccination is voluntary.

Control program/ mechanisms

The control program/ strategies in place

Breeding herds

There is no regional or national control program.

Multiplying herds

There is no regional or national control program.

Fattening herds

There is no regional or national control program.

Measures in case of the positive findings or single cases

In the case of positive results of examination for invasive Salmonella serotype, the appropriate RVA shall issue emergency veterinary measures in accordance with Veterinary Act.

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 for Salmonella enteritidis or Salmonella typhimurium in

holding, 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.

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.

G. Salmonella spp. in bovine animals

Monitoring system

Sampling strategy

There was no specific monitoring system for Salmonella spp. in cattle. The sampling was carry out in clinically infected animals and in the suspected herds. The samples were taken either in holdings or in slaughterhouse. The samples from clinically ill or suspected animals were taken by private veterinarians. When the result of investigation was positive for Salmonella enteritidis or Typhimurium, local competent authority - RVA (Regional Veterinary Administration) must be informed. The laboratory where the positive results were taken has to inform appropriate RVA as well. In the slaughterhouse is sampling perform by inspector of the RVA at clinically or suspected animals.

Frequency of the sampling

Animals at farm

Other: at clinically ill or at suspected animals

Animals at slaughter (herd based approach)

Other: at clinically ill or at suspected animals

Type of specimen taken

Animals at farm

Other: swabs

Animals at slaughter (herd based approach)

Faeces

Methods of sampling (description of sampling techniques)

Animals at farm

For sampling are usually used swabs or faeces.

Animals at slaughter (herd based approach)

For sampling are usually used swabs faeces or organs.

Case definition

Animals at farm

Salmonella Enteritidis and/ or Salmonella Typhimurium have been detected in the sample.

Animals at slaughter (herd based approach)

Salmonella Enteritidis and/ or Salmonella Typhimurium have been detected in the sample.

Diagnostic/ analytical methods used

Animals at farm

Bacteriological method: ISO 6579:2002

Animals at slaughter (herd based approach)

Bacteriological method: ISO 6579:2002

Vaccination policy

Vaccination is voluntary and usually not performed.

Measures in case of the positive findings or single cases

In case of positive finding of Salmonella in bovine animals the appropriate Regional Veterinary Administration imposed extraordinary veterinary measures. Measures and controls of contagious diseases and zoonoses are laid down in the Veterinary Act No. 166/ 1999 as amended, Article 10 - 17.

Notification system in place

Salmonelosis is notifieble disease. 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

When the result of investigation is positive for Salmonella enteritidis or Salmonella typhimurium in holding, 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

At the time we have only sporadic finding in bovine animals.

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

There aro no relevances of the findings to human cases as a source of infection.

Table Salmonella in breeding flocks of Gallus gallus

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Gallus gallus (fowl)							
elite breeding flocks for egg production line	SVA	flock	2	0			
grandparent breeding flocks for egg production line	SVA	flock	3	0			
parent breeding flocks for egg production line	SVA	flock	11	0			
day-old chicks	SVA	flock	11	0			
during rearing period	SVA	flock	11	0			
during production period	SVA	flock	11	0			
parent breeding flocks for meat production line	SVA	flock	280	2	2		
day-old chicks	SVA	flock	262	0	0		
during rearing period	SVA	flock	280	0	0		
during production period	SVA	flock	280	2	2		

Table Salmonella in other poultry

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Gallus gallus (fowl)							
laying hens	SVA	holding	92	0			
day-old chicks	SVA	holding	182	0			
during rearing period	SVA	holding	92	0			
during production period	SVA	holding	92	0			

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Gallinarum biovar Pullorum
Pigeons	SVA	animal	107	16	0	11	5	
Guinea fowl	SVA	animal	8	0				
Quails	SVA	animal	43	0				
Pheasants	SVA	animal	264	7	5		1	1
Partridges	SVA	animal	46	0				
Ostriches	SVA	animal	83	0				

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Derby	S. Infantis	S. Montevideo	S. Agona	S. Hadar	S. enterica subsp. arizonae
Cattle (bovine animals)	SVA	animal	4891	109	9	14	34		51	1			
Sheep	SVA	animal	102	1							1		
Goats	SVA	animal	25	1	0								1
Pigs	SVA	animal	7138	107	2	25	72	4	2		2		
Solipeds, domestic	SVA	animal	43	3			3						
Dogs and cats													
pet animals	SVA	animal	630	22	5		14	1	1			1	

2.1.5. Salmonella in feedingstuffs

2.1.6. Salmonella serovars and phagetype distribution

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

Table Salmonella serovars in animals

Serovars		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry	
Sources of isolates (*)		M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=								
Number of isolates serotyped	N=	0	109	0	107	108	3	0	0
Number of isolates per type									
S. Agona					2				
S. Derby					4	4			
S. Enteritidis			9		2	78	3		
S. Infantis			51		2	4			
S. Montevideo			1			5			
S. Typhimurium			14		25				
S. Virchow						1			
S. Gallinarum						6			
Not typeable			34		72	10			

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella serovars in food

Serovars		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=										
Number of isolates serotyped	N=	8	0	10	0	66	0	0	0	8	0
Number of isolates per type											
S. Braenderup						1					
S. Choleraesuis						1					
S. Derby		1		5		5					
S. Dublin				1						1	
S. Enteritidis						9					
S. Hadar						1					
S. Infantis						7					
S. Kentucky						4					
S. Montevideo		1				7				2	
S. Newport						4				2	
S. Ohio						6				3	
S. Tennessee		2									
S. Typhimurium		3		3		4					
Salmonella spp.		1				3					

S. Gallinarum								1						
S. group C1								12						
S. group C2				1				1						

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella Enteritidis phagetypes in animals

Phagetype		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry	
Sources of isolates (*)		M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=								
Number of isolates phagetyped	N=	0	2	0	3	0	21	0	4
Number of isolates per type									
PT 1							1		
PT 4							3		
PT 8			2		2		8		
PT 14b							2		4
PT 1b							2		
PT 13a							3		
PT 7a							1		
PT 13							1		
PT 32a					1				

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella Enteritidis phagetypes in food

Phagetype		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=										
Number of isolates phagetyped	N=	2	0	0	0	0	0	11	0	0	0
Number of isolates per type											
PT 1								1			
PT 4								4			
PT 8		1						4			
PT 14b		1									
PT 21								2			

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella Enteritidis phagetypes in humans

Phagetype		humans	
Sources of isolates (*)		M	C
Number of isolates in the laboratory	N=		213
Number of isolates phagetyped	N=	0	213
Number of isolates per type			
PT 1			4
PT 4			3
PT 6			1
PT 8			90
PT 21			2
PT 1b			1
PT 13a			13
PT 4b			6
PT 23			4
PT RDNC			1
PT 7a			3
PT 24			2
PT 13			83

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella Typhimurium phagetypes in animals

Phagetype		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry	
Sources of isolates (*)		M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=								
Number of isolates phagetyped	N=	0	4	0	18	0	3	0	0
Number of isolates per type									
DT 104			1		9		2		
DT 194			2		4		1		
DT U					4				
DT 58			1						
DT U302					1				

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella Typhimurium phagetypes in food

Phagetype		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=										
Number of isolates phagetyped	N=	3	0	3	0	1	0	0	0	0	0
Number of isolates per type											
DT 104				2		1					
DT 104l		1									
DT 194		1		1							
DT U302		1									

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella Typhimurium phagetypes in humans

Phagetype		humans	
Sources of isolates (*)		M	C
Number of isolates in the laboratory	N=		148
Number of isolates phagetyped	N=	0	148
Number of isolates per type			
DT 7			1
DT 104			63
DT 120			8
DT 40			1
DT 41			3
DT RDNC			3
DT 42			1
DT 194			14
DT 85			1
DT 109			1
DT 93			1
DT 44			1
DT 135			2
other			6
DT U			5
DT 1			22
DT 2			1
DT 141			7
DT 178			1
DT 67			2
DT 83			1
DT U302			2
DT 6			1

Footnote

(*) M : Monitoring, C : Clinical

2.1.7. Antimicrobial resistance in Salmonella isolates

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

A. Antimicrobial resistance in Salmonella in cattle

Sampling strategy used in monitoring

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, organs

Methods of sampling (description of sampling techniques)

The sampling is random from diseased animals.

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

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

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline
chloramphenicol
florfenicol
ciprofloxacin
enrofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin
kanamycin
trimethoprim-sulfamethoxazol
cefotaxim
ampicillin

Breakpoints used in testing

NCCLS. Performance Standards for Antimicrobial Disk and Dilution Susceptibility Tests for Bacteria Isolated from Animals: Approved Standard. NCCLS document M 31-A2(2002)

B. 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 the 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

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

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline
chloramphenicol
florfenicol
ciprofloxacin
enrofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin
kanamycin
trimethoprim-sulfamethoxazol
cefotaxim
ampicillin

Breakpoints used in testing

NCCLS. Performance Standards for Antimicrobial Disk and Dilution Susceptibility Tests for

Bacteria Isolated from Animals: Approved Standard. NCCLS document M31-A2(2002)

C. 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

Methods of sampling (description of sampling techniques)

1 The sampling is targered to the healthy animals at farm as part of the monitoring programme for zoonoses.
2.The sampling is random from the diseased animals at farm.

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 used for detection for resistance

Antimicrobials included in monitoring

tetracycline
chloramphenicol
florfenicol
ciprofloxacin
enrofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin
kanamycin
trimethoprim-sulfamethoxazol
cefotaxim
ampicillin

Breakpoints used in testing

NCCLS. Performance Standards for Antimicrobial Disk and Dilution Susceptibility Tests for

Bacteria Isolated from Animals: Approved Standard. NCCLS document M31-A2(2002)

D. 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 NCCLS, i.e. Disk Diffusion method for antimicrobial suspectibility testing.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline
chloramphenicol
florfenicol
ciprofloxacin
nalidixic acid
trimethoprim
sulfonamide

streptomycin
gentamicin
kanamycin
trimethoprim-sulfonamide
cefotaxim
cefalotin
ampicillin or amoxicilin
amoxicilin / klavulan acid
vankomycin
erytromycin

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 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 recommendable of NCCLS Disk Diffusion method for antimicrobial suspectibility testing.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline
chloramphenicol
florfenicol
ciprofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin
kanamycin
trimethoprim-sulfamethoxazol
cefotaxim
ampicillin

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.

F. 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 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 NCCLS, i.e. Disk Diffusion method for antimicrobial suspectibility testing.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline
chloramphenicol
florfenicol
ciprofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin
kanamycin
trimethoprim-sulfonamide
cefotaxim
cefalotin
ampicillin or amoxicilin
amoxicilin / klavulan acid
vankomycin
erytromycin

Breakpoints used in testing

NCCLS. Performance Standards for Antimicrobial Disk and Dilution Susceptibility Tests for Bacteria Isolated from Animals: Approved Standard. NCCLS document M 31-A2(2002)

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.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																																
	S. Derby																															
	All foodstuffs																															
Isolates out of a monitoring programme	no																															
Number of isolates available in the laboratory	10																															
Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																
Tetracyclin	10	0																	1	6	1	2										
Amphenicols																																
Chloramphenicol	10	0																	7	3												
Florfenicol	10	0																	7	3												
Cephalosporins																																
3rd generation cephalosporins	0																															
Cefotaxim	10	0																							1		5	4				
Fluoroquinolones																																
Ciprofloxacin	10	0																											1	4	2	3
Enrofloxacin	10	0																							1	1	8					
Quinolones																																
Nalidixic acid	10	0																		6	4											
Sulfonamides																																
Sulfonamide	10	1	1												2		2	2	2	1												
Trimethoprim	10	0																					2	1	4	3						
Aminoglycosides																																
Streptomycin	10	1			1							7	2																			
Gentamicin	10	0															10															
Neomycin	10	0												6	4																	
Kanamycin	10	0													2		8															
Penicillins																																
Ampicillin	10	0																	1	4	5											
Trimethoprim + sulfonamides	10	0																			1	1	1	1	4	1	1					

Table Antimicrobial susceptibility testing of S.Enteritidis in animals

n = Number of resistant isolates

S. Enteritidis

	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys	
Isolates out of a monitoring programme	yes		yes		yes		yes	
Number of isolates available in the laboratory	5		3		22		4	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines								
Tetracyclin	5	0	3	0	22	1	4	0
Amphenicols								
Chloramphenicol	5	0	3	0	22	0	4	0
Florfenicol	5	0	3	0	22	0	4	0
Cephalosporins								
Cefotaxim	5	0	3	0	22	0	4	0
Fluoroquinolones								
Ciprofloxacin	5	0	3	0	22	0	4	0
Enrofloxacin	5	0	3	0	22	0	4	0
Quinolones								
Nalidixic acid	5	0	3	0	22	1	4	0
Sulfonamides								
Sulfonamide	5	0	3	0	22	0	4	0
Trimethoprim	5	0	3	0	22	0	4	0
Aminoglycosides								
Streptomycin	5	0	3	0	22	0	4	0
Gentamicin	5	0	3	0	22	0	4	0
Neomycin	5	0	3	0	22	0	4	0
Kanamycin	5	0	3	0	22	0	4	0
Penicillins								
Ampicillin	5	0	3	0	22	1	4	0
Trimethoprim + sulfonamides	5	0	3	0	22	0	4	0
Fully sensitive	5	5	3	3	22	20	4	4
Resistant to 1 antimicrobial	5	0	3	0	22	1	4	0
Resistant to 2 antimicrobials	5	0	3	0	22	1	4	0
Resistant to 3 antimicrobials	5	0	3	0	22	0	4	0
Resistant to 4 antimicrobials	5	0	3	0	22	0	4	0
Resistant to >4 antimicrobials	5	0	3	0	22	0	4	0

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

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

S. Enteritidis

Cattle (bovine animals)

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

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

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

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

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

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

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

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

S. Enteritidis

Pigs

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

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

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																																	
	S. Enteritidis																																
	Egg products																																
Isolates out of a monitoring programme	no																																
Number of isolates available in the laboratory	5																																
Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																	
Tetracyclin	5	0																		1	3	1											
Amphenicols																																	
Chloramphenicol	5	0																		1	3			1									
Florfenicol	5	0																		1	3			1									
Cephalosporins																																	
3rd generation cephalosporins	0																																
Cefotaxim	5	0																									1	3	1				
Fluoroquinolones																																	
Ciprofloxacin	5	0																									1			1	2	1	
Enrofloxacin	5	0																					1				4						
Quinolones																																	
Nalidixic acid	5	1	1																	3			1										
Sulfonamides																																	
Sulfonamide	5	0													1		2	1	1														
Trimethoprim	5	0																					1	2	2								
Aminoglycosides																																	
Streptomycin	5	0											5																				
Gentamicin	5	0															5																
Neomycin	5	0												3	2																		
Kanamycin	5	0														1	4																
Penicillins																																	
Ampicillin	5	0																		4		1											
Trimethoprim + sulfonamides	5	0																					1	1	3								

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to	S. Enteritidis Meat from broilers (Gallus gallus)
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	5

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

Table Antimicrobial susceptibility testing of S. Enteritidis - qualitative data

n = Number of resistant isolates				
	S. Enteritidis			
	Meat from broilers (Gallus gallus)		**Egg products**	
Isolates out of a monitoring programme	no		no	
Number of isolates available in the laboratory	5		5	
Antimicrobials:	**N**	**n**	**N**	**n**
Tetracyclines				
Tetracyclin	5	0	5	0
Amphenicols				
Chloramphenicol	5	0	5	0
Florfenicol	5	0	5	0
Cephalosporins				
3rd generation cephalosporins	0	0		
Cefotaxim	5	0	5	0
Fluoroquinolones				
Ciprofloxacin	5	0	5	0
Enrofloxacin	5	0	5	0
Quinolones				
Nalidixic acid	5	1	5	1
Sulfonamides				
Sulfonamide	5	0	5	0
Trimethoprim	5	0	5	0
Aminoglycosides				
Streptomycin	5	0	5	0
Gentamicin	5	0	5	0
Neomycin	5	0	5	0
Kanamycin	5	0	5	0
Penicillins				
Ampicillin	5	0	5	0
Trimethoprim + sulfonamides	5	0	5	0

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

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

S. Infantis

All foodstuffs

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

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

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																																
	S. Kentucky																															
	All foodstuffs																															
Isolates out of a monitoring programme	no																															
Number of isolates available in the laboratory	10																															
Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																
Tetracyclin	10	0																	1	4	3	2										
Amphenicols																																
Chloramphenicol	10	0																		1	5	4										
Florfenicol	10	0																		1	6	3										
Cephalosporins																																
3rd generation cephalosporins	0																															
Cefotaxim	10	0																									3	1	5	1		
Fluoroquinolones																																
Ciprofloxacin	10	0																											1	1	4	4
Enrofloxacin	10	0																								1	9					
Quinolones																																
Nalidixic acid	10	0																	1	4	5											
Sulfonamides																																
Sulfonamide	10	0													2	1	3	2	2													
Trimethoprim	10	0																					2		5		3					
Aminoglycosides																																
Streptomycin	10	0										5	5																			
Gentamicin	10	0															10															
Neomycin	10	0												5	5																	
Kanamycin	10	0													4	3	3															
Penicillins																																
Ampicillin	9	1	1																	4	2	2										
Trimethoprim + sulfonamides	10	0																					1	2	4	1	1	1				

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																																	
	S. Ohio																																
	All foodstuffs																																
Isolates out of a monitoring programme	no																																
Number of isolates available in the laboratory	8																																
Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																	
Tetracyclin	8	0																3		2	3												
Amphenicols																																	
Chloramphenicol	8	0															1			2	5												
Florfenicol	8	0																		5	3												
Cephalosporins																																	
3rd generation cephalosporins	0																																
Cefotaxim	8	0																						1	2		1	2	2				
Fluoroquinolones																														1	3	4	
Ciprofloxacin	8	0																															
Enrofloxacin	8	0																										7		1			
Quinolones																																	
Nalidixic acid	8	0																		6	2												
Sulfonamides																																	
Sulfonamide	8	0											1		1		1	2		3													
Trimethoprim	0	0																															
Aminoglycosides																																	
Streptomycin	8	0										4	4																				
Gentamicin	8	0													2	1	5																
Neomycin	8	0												8																			
Kanamycin	8	0													4		4																
Penicillins																																	
Ampicillin	8	0															1		1	5	1												
Trimethoprim + sulfonamides	8	0																					1	1	4	2							

Table Antimicrobial susceptibility testing of S.Typhimurium in animals

n = Number of resistant isolates

S. Typhimurium

	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys	
Isolates out of a monitoring programme	yes		yes		yes			
Number of isolates available in the laboratory	5		18		3		0	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines								
Tetracyclin	5	4	18	15	3	0		
Amphenicols								
Chloramphenicol	5	2	18	14	3	0		
Florfenicol	5	2	18	14	3	0		
Cephalosporins								
Cefotaxim	5	0	18	0	3	0		
Fluoroquinolones								
Ciprofloxacin	5	0	18	0	3	0		
Enrofloxacin	5	0	18	0	3	0		
Quinolones								
Nalidixic acid	5	2	18	1	3	0		
Sulfonamides								
Sulfonamide	5	2	18	17	3	0		
Trimethoprim	5	0	18	1	3	0		
Aminoglycosides								
Streptomycin	5	2	18	17	3	0		
Gentamicin	5	0	18	0	3	0		
Neomycin	5	0	18	0	3	0		
Kanamycin	5	0	18	0	3	0		
Penicillins								
Ampicillin	5	2	18	14	3	0		
Trimethoprim + sulfonamides	5	0	18	1	3	0		
Fully sensitive	5	1	18	0	3	0		
Resistant to 1 antimicrobial	5	2	18	1	3	0		
Resistant to 2 antimicrobials	5	0	18	0	3	0		
Resistant to 3 antimicrobials	5	0	18	3	3	0		
Resistant to 4 antimicrobials	5	1	18	3	3	0		
Resistant to >4 antimicrobials	5	1	18	11	3	0		
Number of multiresistant S. Typhimurium DT104								
with penta resistance	5	1	18	8	3	0		
resistant to other antimicrobials	5	1	18	3	3	0		

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

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

S. Typhimurium

Gallus gallus (fowl) - in total - Monitoring

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

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

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

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

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

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

Table Antimicrobial susceptibility testing of S. Typhimurium - qualitative data

n = Number of resistant isolates	S. Typhimurium					
	Meat from bovine animals		**Meat from broilers (Gallus gallus)**		**Meat from pig**	
Isolates out of a monitoring programme	no		no		no	
Number of isolates available in the laboratory	3		1		5	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines						
Tetracyclin	3	1	1	0	5	4
Amphenicols						
Chloramphenicol	3	1	1	0	5	3
Florfenicol	3	1	1	0	5	3
Cephalosporins						
Cefotaxim	3	0	1	0	5	0
Fluoroquinolones						
Ciprofloxacin	3	0	1	0	5	0
Enrofloxacin	3	0	1	0	5	0
Quinolones						
Nalidixic acid	3	2	1	0	5	0
Sulfonamides						
Sulfonamide	3	3	1	0	5	3
Trimethoprim	3	1	1	0	5	0
Aminoglycosides						
Streptomycin	3	2	1	0	5	5
Gentamicin	3	0	1	0	5	0
Neomycin	3	0	1	0	5	0
Kanamycin	3	0	1	0	5	0
Penicillins						
Ampicillin	3	2	1	0	5	4
Trimethoprim + sulfonamides	3	1	1	0	5	0

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

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

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

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

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

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

S. Typhimurium

Meat from broilers (Gallus gallus)

Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	1

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

Table Breakpoints for antibiotic resistance testing in Animals

Test Method Used

Disc diffusion

Agar dilution

Broth dilution

E-test

Standards used for testing

NCCLS

Salmonella	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Amphenicols										
Chloramphenicol	NCCLS	8		16			30	18		12
Florfenicol	NCCLS	8		16			30	18		12
Tetracyclines										
Tetracyclin	NCCLS	4		8			30	19		14
Fluoroquinolones										
Ciprofloxacin	NCCLS	1		2			5	21		15
Enrofloxacin	NCCLS	0.25		1			5	23		16
Quinolones										
Nalidixic acid	NCCLS	8		16			30	19		13
Trimethoprim	NCCLS	4		8			5	16		10
Sulfonamides										
Sulfonamide	NCCLS	256		512			300	17		12
Aminoglycosides										
Streptomycin							30	15		11
Gentamicin	NCCLS	4		8			10	15		12
Neomycin							30	17		12
Kanamycin	NCCLS	16		32			30	18		13
Trimethoprim + sulfonamides							25	16		10
Cephalosporins										
Cefotaxim	NCCLS	8		32			30	23		14
3rd generation cephalosporins										
Penicillins										
Ampicillin	NCCLS	8		16			10	17		13

Table Breakpoints for antibiotic resistance testing in Food

Test Method Used

Disc diffusion

Agar dilution

Broth dilution

E-test

Standards used for testing

Salmonella	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Amphenicols										
Chloramphenicol	NCCLS	8		16			30	18		12
Florfenicol	NCCLS	8		16			30	18		12
Tetracyclines										
Tetracyclin	NCCLS	4		8			30	19		14
Fluoroquinolones										
Ciprofloxacin	NCCLS	1		2			5	21		15
Enrofloxacin	NCCLS	0.25		1			5	23		16
Quinolones										
Nalidixic acid	NCCLS	8		16			30	19		13
Trimethoprim	NCCLS	4		8			5	16		10
Sulfonamides										
Sulfonamide	NCCLS	256		512			300	17		12
Aminoglycosides										
Streptomycin	NCCLS						30	15		11
Gentamicin	NCCLS	4	18				10	15		12
Neomycin							30	17		12
Kanamycin	NCCLS	16	32				30	18		13
Trimethoprim + sulfonamides	NCCLS						25	16		10
Cephalosporins										
Cefotaxim	NCCLS	8	32				30	23		14
3rd generation cephalosporins										
Penicillins										
Ampicillin	NCCLS	8	16				10	17		13

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 occurence of thermophilic Campylobacter in poultry in the year 2005. This monitoring was also carried out in 2006. Its chief aim is the monitoring of thermophilic Campylobacter incidence and their antibiotic resistance. The cloacal swabs of live broilers are taken at the slaughterhouses.

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

In the last years there was the increase of Campylobacteriosis in human population. The higher incidence was partly due to the improvement of diagnostics method and spreading of the diagnostics methods on the whole territory in the Czech Republic.

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.

Table Campylobacter in humans - Species/ serotype distribution

Campylobacter	Cases 21380	Cases Inc. 0	Autochthon cases 21215	Autochthon Inc. 0	Imported cases 165	Imported Inc. 0	Unknown status 0
C. coli	8		8		0		
C. jejuni	21372		21207		165		
C. upsaliensis							

Table Campylobacter in humans - Age distribution

Age Distribution	C. coli			C. jejuni			Campylobacter spp., unspecified		
	All	M	F	All	M	F	All	M	F
<1 year	0	0	0	903	497	406			
1 to 4 years	3	2	1	4610	2562	2048			
5 to 14 years	0	0	0	3785	2162	1623			
15 to 24 years	0	0	0	4023	1949	2074			
25 to 44 years	4	3	1	4511	2276	2235			
45 to 64 years	0	0	0	2304	1020	1284			
65 years and older	1	1	0	1236	508	728			
Age unknown									
Total :	8	6	2	21372	10974	10398	0	0	0

Table Campylobacter in humans - Seasonal distribution

Month	C. coli	C. jejuni	C. upsaliensis	Campylobacter spp., unspecified
	Cases	Cases	Cases	Cases
January	0	1115		
February	2	961		
March	1	1001		
April	0	1267		
May	0	1701		
June	1	2387		
July	0	2050		
August	0	2589		
September	1	2506		
October	0	2531		
November	1	2211		
December	2	1053		
not known				
Total :	8	21372	0	0

2.2.3. Campylobacter in foodstuffs

A. Thermophilic Campylobacter in Broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

SVA have introduced monitoring system (Methodical instruction of CVO No.1/ 2005) for Campylobacter. The cloacal swabs were randomly taken in slaughterhouses from ten live broilers before slaughtering when the batch was greater than two thousand birds.

Frequency of the sampling

At slaughterhouse and cutting plant

Once a month

Type of specimen taken

At slaughterhouse and cutting plant

Other: cloacal swabs

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

The samples (cloacal swabs) are taken randomly from 10 broilers before slaughtering from batch which content more than 2000 birds. We collect samples with a kit containing a swab and a transport medium (Venturi Transystem - Amies agar gel transport medium with charcoal. One slaughter batch equals 10 cloacal swabs. After collecting the samples, they are kept chilled and they are sent to the accredited laboratories of the State Veterinary Institutes within 24 hours.

Definition of positive finding

At slaughterhouse and cutting plant

The positive bacteriological finding of thermophilic Campylobacter in one slaughter batch (10 cloacal swabs).

At meat processing plant

≥1cfu/ 25 g

At retail

≥1cfu/ 25 g

Diagnostic/ analytical methods used

At slaughterhouse and cutting plant

Other: CSN EN ISO 10272-1:2006

At meat processing plant

Other: CSN EN ISO 10272-1:2006

At retail

Other: CSN EN ISO 10272-1:2006

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. This is not valid for positive findings from cloacal swabs at slaughterhouses.

Recent actions taken to control the zoonoses

SVA and NIPH 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.

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 spreding 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 Administrations (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 Campylobacter in broiler meat and products thereof is low and the situation is stable and similar like in previous years.

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. Samples are taken at slaughterhouses from poultry at random. Sampling is done by official veterinarian once a month.The samples (cloacal swabs) are taken from 10 broilers. We collect samples with a kit containing a swab and a transport medium (Venturi Transystem - Amies agar gel transport medium with charcoal. One slaughter batch equals 10 cloacal swabs. After collecting the samples, they are kept chilled and they are sent to the accredited laboratories of the State Veterinary Institutes within 24 hours.
Within one sampling there are ten cloacal swabs taken and the sampling is done with more than 2000 birds in batch.The alternative sample is the intact caecum. Monitoring system follows the Methodology Instruction of SVA.

Frequency of the sampling

Rearing period

Once a month

At slaughter

Once a month

Type of specimen taken

At slaughter

Other: cloacal swabs

Methods of sampling (description of sampling techniques)

At slaughter

Samples are taken at slaughterhouses at random. Cloacal swabs are taken. Swabs with transport medium are used. Samples are cooled and delivered to lab within 24 hours. Sampling is done by official veterinarian once a month.
Within one sampling there are taken ten cloacal swabs from live birds and the sampling is done with more than 2000-head batch. Monitoring system follows the Methodology Instruction of SVA. In the lab 10 samples are investigated as one pooled sample.

Case definition

At slaughter

Positive result of the bacteriological test.

Diagnostic/ analytical methods used

At slaughter

Bacteriological method: CSN EN ISO 10272-1:2006

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 protocol to the official veterinarian.

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

The incidence of termophilic Campylobacter in broilers in 2006 was 48.68%.

Table Campylobacter in animals

	Source of information	Sampling unit	Units tested	Total units positive for thermophilic Campylobacter spp.	C. jejuni	C. coli	C. lari	C. upsaliensis	thermophilic Campylobacter spp., unspecified
Gallus gallus (fowl)									
broilers									
- at slaughterhouse	SVA	slaughter batch	189	92	87	5			

2.2.5. Antimicrobial resistance in Campylobacter isolates

A. Antimicrobial resistance in Campylobacter jejuni and coli in 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 Gallus gallus - Sampling strategy. In strains C. jejuni and C.coli isolated from pooled samples of cloacal swabs, taken at slaughterhouses, the investigation in antimicrobial resistance is carried out.

Type of specimen taken

Slaughterhouse poultry samples are taken- see chapter Thermophilic Campylobacter in Gallus gallus- Monitoring system, Sampling strategy.

Methods of sampling (description of sampling techniques)

See chapter Thermophilic Campylobacter in Gallus gallus- Monitoring system, Sampling strategy.

Procedures for the selection of isolates for antimicrobial testing

For Antimicrobial Resistance testing , strains isolated during the Campylobacter monitoring in slaughterhouse poultry are used - see chapter Thermophilic Campylobacter in Gallus gallus- Monitoring system, Sampling strategy.

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.

Laboratory methodology used for identification of the microbial isolates

For Campylobacter isolates CSN EN ISO 10272-1:2006 is used, for antimicrobial resistence investigation dilution micromethod is used, in accordance with NCCLS. Breakpoints are used,in accordance with Communique 2005.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

For antimicrobial resistance investigation dilution micromethod is used,in accordance with NCCLS. Breakpoints are used,in accordance with Communique 2005.
For monitoring the following antibiotics are used: Tetracyclin, Ciprofloxacin, Nalidix acid, Streptomycin, Gentamicin, Erythromycin, Ampicillin.

Breakpoints used in testing

Breakpoints are used,in accordance with Communique 2005. Concrete levels of breakpoints

used are listed in reference chart of report.

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to	
	C. jejuni
	Gallus gallus (fowl) - broilers - before slaughter - at slaughterhouse - animal sample - Monitoring - official sampling - objective sampling
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	50

Antimicrobials:	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Tetracyclines																						
Tetracyclin	50	6					28	16				3	1	2								
Fluoroquinolones																						
Ciprofloxacin	50	24			3	16	4	3			1	15	2	6								
Quinolones																						
Nalidixic acid	50	24			1	6	7	3	6	1		2	16	8								
Aminoglycosides																						
Streptomycin	50	1			12	1	30			2	4		1									
Gentamicin	50	1				20	21	5	3						1							
Macrolides																						
Erythromycin	50	2		18		18	6	5	1		1			1								
Penicillins																						
Ampicillin	50	0					9	12	6	14	9											

Table Antimicrobial susceptibility testing of Campylobacter in animals

n = Number of resistant isolates

Campylobacter spp., unspecified

	Gallus gallus (fowl)		Cattle (bovine animals)		Pigs	
Isolates out of a monitoring programme	yes					
Number of isolates available in the laboratory	50					
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines						
Tetracyclin	50	6				
Fluoroquinolones						
Ciprofloxacin	50	24				
Quinolones						
Nalidixic acid	50	24				
Aminoglycosides						
Streptomycin	50	1				
Gentamicin	50	1				
Macrolides						
Erythromycin	50	2				
Penicillins						
Ampicillin (1)	50	0				
Fully sensitive	50	22				
Resistant to 1 antimicrobial	50	2				
Resistant to 2 antimicrobials	50	23				
Resistant to 3 antimicrobials	50	2				
Resistant to 4 antimicrobials	50					
Resistant to >4 antimicrobials	50	1				

(1) :

Table Breakpoints used for antimicrobial susceptibility testing in Animals

Test Method Used

Disc diffusion

Agar dilution

Broth dilution

E-test

Standards used for testing

Comunique_2005

Campylobacter	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Tetracyclines										
Tetracyclin	Communique 2005	4		8	0.25	128				
Fluoroquinolones										
Ciprofloxacin	Communique 2005	0.5		1	0.06	128				
Quinolones										
Nalidixic acid	Communique 2005	8		16	0.06	128				
Aminoglycosides										
Streptomycin	Communique 2005	8		16	0.06	64				
Gentamicin	Communique 2005	2		4	0.25	128				
Macrolides										
Erythromycin	Communique 2005	1	2	4	0.06	128				
Penicillins										
Ampicillin	Communique 2005	4	8	16	0.25	32				

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 in accordance with Commission Regulation (EC) No 2073/ 2005 on microbiological criteria for foodstuffs. Finding in human population are sporadic. From 8-23 registered cases per year per population of CR since 1994. State Veterinary Administration carry out monitoring of listeriosis in foodstuffs of animal origin 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

Trends are changing, sources of infection are foodstuffs of animal origin.

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 infectin are just foodstuffs of animal origin.

Additional information

In accordance with Ragulation (EC) 2073/ 2005 in 2006 was puting 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. The results from the year 2006 are taking by detection method. The year 2006 is the temporary year but in 2007 will the results distribute to the detection method or enumeration method.

2.3.2. Listeriosis in humans

Table Listeria in humans - Species/ serotype distribution

Listeria	Cases	Cases Inc.
	68	**0**
L. monocytogenes	68	
Listeria spp.		
Congenital cases	10	
Deaths	9	

Table Listeria in humans - Age distribution

Age Distribution	L. monocytogenes			Listeria spp.		
	All	M	F	All	M	F
<1 year	10	5	5			
1 to 4 years	0	0	0			
5 to 14 years	0	0	0			
15 to 24 years	2	0	2			
25 to 44 years	10	1	9			
45 to 64 years	23	19	4			
65 years and older	23	13	10			
Age unknown						
Total :	68	38	30	0	0	0

2.3.3. 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.
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. The sampling was a single survey.

Frequency of the sampling

At the production plant

Other: depend on the HACCP and on the survey

At retail

Other: Depend on a survey

Type of specimen taken

At the production plant

Final products.

At retail

according to Commission Regulation (EC) No 2073/ 2005 of the 15 November 2005 on the microbiological criteria for foodstuffs monitoring of local authorities

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

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. 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 and ready-to-eat foods for special medical purposes 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 from at least one single sample taken out of the batch.

Diagnostic/ analytical methods used

At the production plant

Bacteriological method: NMKL No 164:1999

At retail

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

Preventive measures in place

creation and control of HACCP and GHP system

Control program/ mechanisms

The control program/ strategies in place

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

Recent actions taken to control the zoonoses

CAFIA monitored of zoonoses accordance with Regulation (EC) No 2073/ 2005: ready-to-eat foods able or unable to support the growth of L. monocytogenes: cheeses made from pasterised milk, pig meat products - ready-to-eat, infant formulae, delicatessen products, desserts and cakes containing heat-treated cream, pastry with egg filling, pre-cut fruit and vegetable ready-to-eat.

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

At retail:
In total, 10 samples of dairy products, 12 broiler meat products (ready-to-eat), 79 pig meat products (ready-to-eat), 9 infant formulae and dietary food for special medical puposes, 268 products of delicatessen, 28 pre-cut fruit and vegetable, 245 bakery products (desserts, pastry and cakes) samples were examined using qualitative/ quantitative analysis for detection or enumaration of L. monocytogenes.
Eleven (1.7%) samples of delicatessen products out of the total number of 646 samples tested by the CAFIA were L. monocytogenes positive, of which 5 (0.78%) were below 100 CFU/ g and 3 (0.46%) contained L. monocytogenes above 100 CFU/ g. In 3 (0.46%) samples were detected L. monocytogenes in 25 g only by qualitative analysis.

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Listeria monocytogenes presence in x g	> detection limit but =< 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Milk, cows'								
raw								
intended for direct human consumption	SVA	batch	25 ml	4	0			
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products	SVA	batch	25 ml	7	0			
pasteurised milk	SVA	batch	25 ml	38	0			
Milk, goats'								
raw								
intended for direct human consumption	SVA	batch	25 ml	2	0			
Cheeses made from cows' milk								
soft and semi-soft								
made from pasteurised milk	CAFIA/ SVA	batch	1g	57	2			
- at retail - Monitoring (Results from NIPH)	NIPH	single	25	36	5	25	5	
hard								
made from pasteurised milk	CAFIA/ SVA	batch	1 g	236	1			
- at retail - Monitoring (Result of NIPH.)	NIPH	single	25	24	0			
Cheeses made from goats' milk								
soft and semi-soft								
made from pasteurised milk	SVA	batch	25 g	11	0			
Cheeses made from sheep's milk								
soft and semi-soft								
made from pasteurised milk	SVA	batch	25 g	1	0			
Dairy products (excluding cheeses)								
butter	SVA	batch	25 g	109	0			
cream	SVA	batch	25 g	14	0			

ice-cream								
made from pasteurised milk	CAFIA, SVA	batch	1g	16	0			
dairy desserts								
chilled	CAFIA	batch	1g	4	0			

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Listeria monocytogenes presence in x g	> detection limit but =< 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Meat from broilers (Gallus gallus)								
fresh	SVA	batch	25g	207	7	0	0	0
- at retail - Monitoring (Results of NIPH.)	NIPH	single	25	24	1	25	1	
meat products								
cooked, ready-to-eat	CAFIA, SVA	batch	1g	83	0	0	0	0
- at retail - Monitoring (Result of NIPH.)	NIPH	single	25	24	1	25	1	
Meat from pig								
fresh	SVA	batch	25g	142	17	0	0	0
meat products								
cooked, ready-to-eat	CAFIA, SVA	batch	1g	1495	12	1	6	0
- at retail - Monitoring (Result of NIPH.)	NIPH	single	25	120	5	25	5	
Meat from bovine animals								
fresh	SVA	batch	25g	6	0	0	0	0
meat products								
cooked, ready-to-eat	SVA	batch	25g	373	0	0	0	0
Fish								
smoked	CAFIA, SVA	batch	1g	35	0	0	0	0
- at retail - Monitoring (esult of NIPH.)	NIPH	single	25	12	1	25	1	
Crustaceans								
unspecified								
cooked	SVA	batch	25g	11	0	0	0	0
Molluscan shellfish								
cooked	SVA	batch	25g	0	0	0	0	0
Infant formula	CAFIA, SVA	batch	25g	24	0	0	0	0
Foodstuffs intended for special nutritional uses	CAFIA	batch	25g	5	0			
Vegetables								
pre-cut								

ready-to-eat	CAFIA	batch	1g	8	0			
Fruits								
pre-cut								
ready-to-eat	CAFIA	batch	25g	20	0			
products								
dried	SVA	batch	25g	42	0	0	0	0
non-precut	SVA	batch	25g	13	0	0	0	0
Juice								
mixed juice								
unpasteurised	CAFIA	batch	1ml	3	0			
Bakery products								
desserts								
containing heat-treated cream	CAFIA	batch	1g, 25g	198	0			
pastry								
with egg filling	CAFIA	batch	1g, 25g	13	0			
cakes								
containing heat-treated cream	CAFIA	batch	1g, 25g	34	0			
Other processed food products and prepared dishes								
unspecified								
ready-to-eat foods								
chilled	CAFIA	batch	25g,1g	268	11	1	5	3
Fishery products, unspecified								
ready-to-eat	SVA	batch	25g	71	0	0	0	0
Meat, mixed meat								
meat products								
fermented sausages	SVA	batch	25g	272	4	0	0	0
cooked, ready-to-eat	SVA	batch	25g	2055	42	0	0	0

2.3.4. Listeria in animals

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria spp.	L. monocytogenes	Listeria spp., unspecified
Cattle (bovine animals)	SVA	animal	78	2	2	
Sheep	SVA	animal	62	1	1	
Goats	SVA	animal	19	0		
Pigs	SVA	animal	209	0		
Gallus gallus (fowl)	SVA	animal	131	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

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

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

In the year 2006 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 foodtuffs to human .

Recent actions taken to control the zoonoses

Sampling for monitoring of VT E. coli is performed at slaughterhouses during July and August. Swabs from poultry, cattle and pigs are taken by official veterinarian once a month. 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. All samples tested in 2006 were negative for VT E coli presence. 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. E. Coli Infections in humans

Table Escherichia coli, pathogenic in humans - Age distribution

Escherichia coli, pathogenic	Cases	Cases Inc.	Autochthon cases	Autochthon Inc.	Imported cases	Imported Inc.
HUS						
- clinical cases						
- lab. confirmed cases						
- caused by O157 (VT+)						
- caused by other VTEC						
E.coli infect. (except HUS)	1553		1537		16	
- clinical cases						
- laboratory confirmed						
- caused by 0157 (VT+)						
- caused by other VTEC						

2.4.3. Escherichia coli, pathogenic in foodstuffs

Table VT E. coli in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Escherichia coli, pathogenic	E.coli, pathogenic, unspecified	Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Meat from broilers (Gallus gallus)									
fresh	SVA	batch	25g	15	0	0	0	0	0
Meat from turkey									
fresh	SVA	batch	25g	0	0	0	0	0	0
Meat from pig									
fresh	SVA	batch	100cm2/ 20cm2	1033	0	0	0	0	0
minced meat									
intended to be eaten raw	SVA	batch	25g	13	0	0	0	0	0
Meat from bovine animals									
fresh	SVA	batch	100cm2/ 20cm2	795	0	0	0	0	0
minced meat									
intended to be eaten raw	SVA	batch	25g	0	0	0	0	0	0
Meat from sheep									
fresh	SVA	batch	100cm2/ 20cm2	5	0	0	0	0	0
Milk, cows'									
raw									
intended for direct human consumption	SVA	batch	25ml	68	0	0	0	0	0
raw milk for manufacture									
intended for manufacture of raw or low heat-treated products	SVA	batch	25ml	9	0	0	0	0	0
Milk, goats'									
raw									
intended for direct human consumption	SVA	batch	25ml	2	0	0	0	0	0

Vegetables	SVA	batch	25g	11	0	0	0	0	0
Fruits	SVA	batch	25g	1	0	0	0	0	0

2.4.4. Escherichia coli, pathogenic in animals

A. Verotoxigenic Escherichia coli in cattle (bovine animals)

Monitoring system

Sampling strategy

There was no official National program in the Czech Republic for monitoring VT E. coli in the year 2006.

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

We are not able to evaluate the recent situation because the data about prevalences is missing.

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

In food
All slaughtered animals, foodstufs and products of animal origin are under official veterinary control according to EU and national legislation.

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 branches´ Register of tuberculosis - physician´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 2006 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")
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) – 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.

Type of specimen taken

Other: 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 (zoological gardens, nature, small breedins) 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 no relevance because we have no case of TBC (M. bovis).

Additional information

In 2002 were tested 391 274 animals by single tuberculin test examination (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 frame of the health control paid by the state, bovine tuberculosis is currently monitored in the CR as follow: single tuberculin test examination, simultaneous tuberculin test examination, laboratory examination (section, histological investigation and bacteriological investigation), serological investigation.

B. Mycobacterium bovis in farmed deer

Monitoring system

Sampling strategy

The Czech Republic didnt have monitoring programme in farmed animals in the year 2006. All slaughtered animals and products from the animals were under official veterinary control.

Table Tuberculosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Mycobacterium spp.	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified	M. avium complex
Sheep	SVA	animal	15214	0				
Goats	SVA	animal	2668	0				
Pigs	SVA	animal	3883175	150	0	0	110	40
Zoo animals, all	SVA	animal	897	0				

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Routine tuberculin testing		Number of tuberculin tests carried out before the introduction into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/ 432/ EEC)	Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological examinations	Number of animals detected positive in bacteriological examination
	Herds	Animals	Number of herds	%	Number of herds	%	Interval between routine tuberculin tests (*)	Number of animals tested			
CESKÁ REPUBLIKA	22734	1430713	22734	100	0	0	5	5081	5081	12	0
Total	22734	1430713	22734	100	0	0		5081	5081	12	0

Footnote

Tuberculin test:
- before remove all shemales older than 24 months
- all imported shemales (ecept 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 state which ahve not status of free country

(*) Legend:

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

2.6. BRUCELLOSIS

2.6.1. General evaluation of the national situation

A. Brucellosis general evaluation

History of the disease and/ or infection in the country

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

year cases
1955 39
1956 75
1957 38
1958 45
1959 32
1960 67
1961 71
1962 74
1963 49
1964 37
1965 2
1966 10
1967 3
1968 2
1969 0
1970 0
1971 0
1972 0
1973 11
1974 4
1975 1
1976 0
1977 0
1978 0
1979 1
1980 0
1981 1
1982 0
1983 1
1984 4

1985 1
1986 1
1987 1
1988 2
1989 1
1990 0
1991 0
1992 0
1993 0
1994 0
1995 1
1996 1
1997 0
1998 0
1999 0
2000 0
2001 0
2002 0
2003 0
2004 0

Results of the investigation

0 cases confirmed in humans

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

Eradication of the disease in cattle in the year 1964

2.6.3. Brucella in foodstuffs

2.6.4. Brucella in animals

A. Brucella abortus in bovine animals

Status as officially free of bovine brucellosis during the reporting year

The entire country free

The Czech Republic is free of bovine brucellosis since 1964 on the natinal level and since 2004 is the Czech Republic officially free of bivine 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 2006 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 cows and heifers 24 months old, all breeding bulls, all abortion animals -blood samples.
2, All holdings of cattle, where is more than 100 heads, which supply milk to diary - bulk milk samples.
3, Abortion foetuses in indicated caases.

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 female 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 – examination of milk (ELISA) – number of milking cows is recorded. Bulk milk samples from all bovine holdings, where is more 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 500 dairy cows at most.
Brucellosis –
All aborting cows – examination 2x per year in interval of 21 – 28 days.
Brucellosis –
Abortions and amnia – examination in indicated cases.

Type of specimen taken

Other: milk, blood,abortion foetus

Case definition

Positive laboratory investigation (serological or bacteriological).

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

In 1964 the program sanitating the cattle's stocks from bovine brucellosis cause by B. abortus was successfully completed in the Czech Republic. In 1959 the proper campaign was started searching the cattle population through agglutination test. At the beginning the eradication process was based on the elimination method, next phases the radical method was applied. Vaccination against brucellosis was stopped in time.
Following serological tests was used as main diagnostic methods – slow agglutination in indicated case supplemented with complement fixation and Coombs tests in modification by Hajdů. The allergic test, ring milk test tec. were used as supplementary methods. Brucellosis infected cattle was promptly marked by permanent ear – hole and were not further examined. The bacterial culture examinations of aborted foetus, uterine discharge, milk tec. were used for the diagnosis confirmation in new outbreaks and suspicion in particular.
The zero prevalence was accomplished towards the end of the year 1964 at the complete population. By course of O.I.E. principles defined in the Animal Health the Czech Republic has been free from bovine brucellosis since 30. 9. 1964.
1 048 682 samples for bovine brucellosis were tested in year 2002, no test was found positive. Milk samples were tested by ELISA, blood samples by RBT, Complement fixation test and slow agglutination.
1 050 654 samples for bovine brucellosis were tested in year 2003, 9 bulk milk samples were found positive. All animals from this bulk milk sample were tested individually with negative result. Milk samples were tested by ELISA, blood samples by RBT, Complement fixation test, and slow agglutination.
1 015 339 samples for bovine brucellosis were tested in year 2004, 52 bulk milk samples were found positive. All animals from this bulk milk sample were tested individually with negative result. Milk samples were tested by ELISA, blood samples by RBT, Complement fixation test, and slow agglutination.
542 174 samples srological tests for bovine brucellosis were tested in year 2006, 183 070 animals were tested from bulk milk samples. 4 were found positive. All animals from this bulk milk sample were tested individually with negative result. Milk samples were tested by ELISA, blood samples by RBT, Complement fixation 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.

B. 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/ 20047/ 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) – LE – CS (RBT + CFR)
Licensed breeding rams – examination 1x per year in accordance with Annex 9 to Decree No. 380/ 2003.
Ovine and caprine brucellosis (B. melitensis) – LE – serological examination (RBT)
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.
Ovine and caprine brucellosis (B. melitensis) – LE – CS (RBT + CFR)
Aborting ewes – examination 2x in interval of 21 – 28 days.
Ovine and caprine brucellosis (B. melitensis) – LE – (A + BE)
Abortions or amnia – examination in indicated cases.

Type of specimen taken

Other: 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

Case definition

Positive laboratory investigation (serological or bacteriological).

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 2002 were tested for B. melitensis all breeding rams once a year, selection holdings of sheep and together housed production animals – basic herd once a year. Abortioned sheep were tested two times in 21 – 28 days interval and aborted foetuses were tested in indicated cases. 15 437 samples in sheep were tested for B. melitensis in year 2002 with negative results. Samples were tested by complement fixation test, RBT and slow agglutination.
In 2003 were tested all breeding rams once a year, all abortioned sheep two times in interval 21 -28 days and aborted foetuses and all breeding rams and sheep in holdings which produced young breeding rams once a year. 16 827 samples in sheep were tested for B. melitensis in year 2003 with negative results. Samples were tested by complement fixation test, RBT and slow agglutination.
In 2004 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.
15 471 samples in sheep were tested for B. melitensis in year 2004 with negative results. Samples were tested by complement fixation test, RBT and slow agglutination.

In 2005 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.
10794 samples in sheep were tested for B. melitensis in year 2005 with negative results. Samples were tested by complement fixation test, RBT and slow agglutination.
In 2006 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.
15 718 samples in sheep were tested for B. melitensis in year 2006 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.

C. 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

Ovine and caprine brucellosis (B. melitensis) – LE – CS (RBT + CFR)
Aborting she-goats – examination 2x in interval of 21 – 28 days.
Ovine and caprine brucellosis (B. melitensis) – LE – CS (RBT + CFR)
Breeding he-goats in matting – examination 1x per year in accordance with Annex 9 to Decree No. 380/ 2003.
Ovine and caprine brucellosis (B. melitensis) – LE – serological examination (RBT)
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.
Ovine and caprine brucellosis (B. melitensis) – LE – (A + BE)
Abortions or amnia – examination in 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

Case definition

The sample is considered like positive in the case of positive laboratory examination.

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 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

In 2002 were tested for B. melitensis all breeding male goats once a year, selection holdings of goats and together housed production animals – basic herd once a year, abortioned sheep two times in 21 – 28 days interval and aborted foetuses in indicated cases. 2810 samples in goats were tested for B. melitensis in year 2002 with negative results. Samples were tested by complement fixation test, RBT and slow agglutination.
In 2003 were tested all breeding male goats once a year, all abortioned goats two times in interval 21 -28 days and aborted foetuses in indicated cases. All breeding male goats and goats in holdings which produced young breeding male goats once a year. 3 060 samples in goats were tested for B. melitensis in year 2003 with negative results. Samples were tested by complement fixation test, RBT and slow agglutination.
In 2004 were tested all breeding male goats once a year, all abortioned goats two times in interval 21 -28 days and aborted foetuses in indicated cases. In holdings which produced young breeding male goats were tested all rams over 6 months old and 25 % adult sheep (min. 50 heads) once a year. 3 076 samples in goats were tested for B. melitensis in year 2004 with negative results. Samples were tested by complement fixation test, RBT and slow agglutination.
In 2005 were tested all breeding male goats once a year, all abortioned goats two times in interval 21 -28 days and aborted foetuses in indicated cases. In holdings which produced young breeding male goats were tested all rams over 6 months old and 25 % adult sheep (min. 50 heads) once a year. 2215 samples in goats were tested for B. melitensis in year 2005 with negative results. Samples were tested by complement fixation test, RBT and slow agglutination.
In 2006 were tested all breeding male goats once a year, all abortioned goats two times in interval 21 -28 days and aborted foetuses in indicated cases. In holdings which produced young breeding male goats were tested all rams over 6 months old and 25 % adult sheep (min. 50 heads) once a year. 2173 samples in goats were tested for B. melitensis in year 2006 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 spp.	B. melitensis	B. abortus	B. suis	Brucella spp., unspecified
Pigs	SVA	animal	112568	0	0	0	0	0
Solipeds, domestic								
horses								
- at farm	SVA	animal	16	0	0	0	0	0
Zoo animals, all								
- at zoo	SVA	animal	813	0	0	0	0	0
Hares								
wild								
- in total	SVA	animal	600	22	0	0	22	0
Dogs								
pet animals								
- in total	SVA	animal	38	0	0	0	0	0

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Surveillance						Investigations of suspect cases								
							Serological tests			Examination of bulk milk samples			Information about abortions			Epidemiological investigation					
	Herds	Animals	Number of herds	%	Number of herds	%	Number of bovine herds tested	Number of animals tested	Number of infected herds tested	Number of bovine herds tested	Number of animals or pools tested	Number of infected herds	Number of notified abortions whatever cause	Number of isolations of Brucella infection	Number of abortions due to Brucella abortus	Number of animals tested with serological blood tests	Number of suspended herds	Number of positive animals		Number of animals examined microbio logically	Number of animals positive microbio logically
																		Serologically	BST		
CESKÁ REPUBLIKA	22734	1430713	22734	100	0	0	20583	552436	0	2151	183070	0	4310	0	0	8610	4	0	0	50	0
Total	22734	1430713	22734	100	0	0	20583	552436	0	2151	183070	0	4310	0	0	8610	4	0	0	50	0

Footnote

The number of herds mean the number of holdings. There are no official data about number of herds.
The number of animals tested microbiologically means the number of foetus which were tested by microbiological isolation.

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

Region	Total number of existing ovine / caprine		Officially free herds		Infected herds		Surveillance			Investigations of suspect cases				
	Herds	Animals	Number of herds	%	Number of herds	%	Number of herds tested	Number of animals tested	Number of infected herds	Number of animals tested with serological blood tests	Number of animals positive serologically	Number of animals examined microbiologically	Number of animals positive microbiologically	Number of suspended herds
CESKÁ REPUBLIKA	10912	162814	10912	100	0	0	10912	17891	0	69	0	6	0	0
Total	10912	162814	10912	100	0	0	10912	17891	0	69	0	6	0	0

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

MKN DG 1999 2000 2001 2002 2003 2004
A04.6 Yers 211 231 301 403 372 498

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.

Table Yersinia in humans - Species/ serotype distribution

Yersinia	Cases 522	Cases Inc. 0	Autochthon cases 517	Autochthon Inc. 0	Imported cases 5	Imported Inc. 0
Y. enterocolitica	522		517		5	
Y. enterocolitica - O:3						
Y. enterocolitica - O:9						

Table Yersinia in humans - Age distribution

Age Distribution	Y. enterocolitica			Yersinia spp.		
	All	M	F	All	M	F
<1 year	18	9	9			
1 to 4 years	147	71	76			
5 to 14 years	151	88	63			
15 to 24 years	81	52	29			
25 to 44 years	79	43	36			
45 to 64 years	33	18	15			
65 years and older	13	6	7			
Age unknown						
Total :	522	287	235	0	0	0

Table Yersinia in humans - Seasonal distribution

Month	Y. enterocolitica	Yersinia spp.
	Cases	Cases
January	37	
February	31	
March	33	
April	31	
May	50	
June	34	
July	19	
August	42	
September	38	
October	61	
November	65	
December	81	
not known		
Total :	522	0

2.7.3. Yersinia in foodstuffs

2.7.4. Yersinia in animals

A. Yersinia enterocolitica in pigs

Monitoring system

Sampling strategy

Animals at farm

There was no monitoring program for Yersinia enterocolitica.

Animals at slaughter (herd based approach)

There was no monitoring program for Yersinia enterocolitica.

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

We are not able to evaluate the recent situation because data about prevalnce is missing.

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. The one last positive case in hunted wild boar was in northeast region in the year 2006.

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. Trichinellosis in humans

2.8.3. Trichinella in animals

A. 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 realize in accordance with 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 boar for human consumption were tested for the presence of trichinella according to 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, tonque or abdominal muscles were sampled.

Methods of sampling (description of sampling techniques)

General

The digestive method is used as a 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 with 77/ 96/ EC to the end of November 2005. The investigations were carry on 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 slaghterhouses are tested for Trichinella spp. The positive case is presence 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 officialy 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 occurence of Trichinella in pigs is very rare and sporadic. Over the reporting period has been detected only one positive finding in wild boar and any occurence of trichinella in domestic pigs.

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total units positive for Trichinella spp.	T. spiralis	Trichinella spp., unspecified	T. britovi
Pigs							
fattening pigs							
raised under controlled housing conditions in integrated production system	SVA	animal	3884275	0	0	0	0
Wild boars							
wild	SVA	animal	27554	1	0	0	1
farmed	SVA	animal	335	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 programme for Echonococcus in wildlife red foxes was introduced n the year 2005. The samples are taken from foxes which were hunted for Rabies efficiency control. In the frame of the programme were tested 833 samples from foxes for echinococcosis. 62 samples were positive for E. multiocularis.
In the year 2006 were tested 958 samples from 958 foxes for echonococosis, 107 samples were positive for E. multiocularis.

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

Thanks the post mortem inspection of all carcasses is minimized the risk of releasing infected carcasses. There was now relevance between finding in animals and humans in the year 2005 and 2006 too.

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.

Table Echinococcus in humans - Age distribution

Age Distribution	E. granulosus			E. multilocularis			Echinococcus spp.		
	All	M	F	All	M	F	All	M	F
<1 year	0	0	0						
1 to 4 years	0	0	0						
5 to 14 years	0	0	0						
15 to 24 years	0	0	0						
25 to 44 years	1	1	0						
45 to 64 years	1	0	1						
65 years and older	0	0	0						
Age unknown									
Total :	2	1	1	0	0	0	0	0	0

2.9.3. Echinococcus in animals

Table Echinococcus in animals

	Source of information	Sampling unit	Units tested	Total units positive for Echinococcus spp.	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Foxes	SVA	animal	958	107		107	

2.10. TOXOPLASMOSIS

2.10.1. General evaluation of the national situation

A. Toxoplasmosis general evaluation

Recent actions taken to control the zoonoses

The Czech Republic didnt have monitoring programme for toxoplasmosis in animals in the year 2005.

2.10.2. Toxoplasmosis in humans

A. Toxoplasmosis in humans

Reporting system in place for the human cases

Epidat

Case definition

EU

Diagnostic/ analytical methods used

Laboratory

History of the disease and/ or infection in the country

year cases
1970 91
1971 121
1972 157
1973 253
1974 1535
1975 460
1976 1071
1977 369
1978 1093
1979 773
1980 783
1981 704
1982 728
1983 959
1984 826
1985 875
1986 721
1987 569
1988 633
1989 595
1990 793
1991 706
1992 823
1993 860
1994 2056
1995 1514
1996 1217
1997 952
1998 777
1999 857

2000 670
2001 516
2002 646
2003 455
2004 219

Results of the investigation

Steady decrease of incidence

Table Toxoplasma in humans - Species/ serotype distribution

Toxoplasma	Cases	317	Cases Inc.	0
Toxoplasma spp.		317		
Congenital cases		0		

Table Toxoplasma in humans - Age distribution

Age Distribution	Toxoplasma spp.		
	All	M	F
<1 year	2	1	1
1 to 4 years	15	4	11
5 to 14 years	48	21	27
15 to 24 years	62	28	34
25 to 44 years	152	30	122
45 to 64 years	34	9	25
65 years and older	4	1	3
Age unknown			
Total :	317	94	223

2.10.3. Toxoplasma in animals

2.11. RABIES

2.11.1. General evaluation of the national situation

A. Rabies general evaluation

History of the disease and/ or infection in the country

Continual research carried out during 1960 – 1980 proved that rabies had become endemic in the border areas of West and North Bohemia and North Moravia. 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.
According to OIE rules, the Czech Republic is free of Rabies from the year 2005.

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

The last outbreak 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.
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.

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

Other: clinical investigation or brain

Methods of sampling (description of sampling techniques)

Samples of brain are taken in State Veterinary Institute.

Case definition

Positive IF test.

Diagnostic/ analytical methods used

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

Vaccination policy

Antirabies vaccination is obligatory acording to Vet. care 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.

Control program/ mechanisms

The control program/ strategies in place

The Czech Republic carry out program for oral vaccination of Foxes.

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)	unspecified Lyssavirus	European Bat Lyssavirus - unspecified	classical rabies virus (genotype 1)
Cattle (bovine animals)	SVA	animal	3	0			
Sheep	SVA	animal	6	0			
Dogs	SVA	animal	252	0			
Cats	SVA	animal	307	0			
Bats							
wild	SVA	animal	12	0			
Foxes							
wild	SVA	animal	7066	0			
Raccoon dogs							
wild	SVA	animal	6	0			
Badgers							
wild	SVA	animal	23	0			
Marten							
wild	SVA	animal	86	0			
Wild boars							
wild	SVA	animal	8	0			
Deer							
wild							
roe deer	SVA	animal	51	0			
red deer	SVA	animal	1	0			
fallow deer	SVA	animal	1	0			
Guinea pigs	SVA	animal	4	0			
Hamsters							
pet animals	SVA	animal	1	0			
Mice							
laboratory animal	SVA	animal	1	0			
Weasel	SVA	animal	1	0			
Hares							
wild	SVA	animal	5	0			
Pigeons							

- in total	SVA	animal	1	0			
Geese							
- in total	SVA	animal	1	0			
Voles							
wild	SVA	animal	3	0			
Rabbits							
wild	SVA	animal	1	0			
pet animals	SVA	animal	4	0			
Wild animals							
- in total	SVA	animal	66	0			
All animals							
unspecified							
- in total	SVA	animal	17	0			

2.12. Q-FEVER

2.12.1. General evaluation of the national situation

2.12.2. Coxiella (Q-fever) in animals

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1. ESCHERICHIA COLI, NON-PATHOGENIC

3.1.1. General evaluation of the national situation

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

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1. HISTAMINE

4.1.1. General evaluation of the national situation

4.1.2. 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 performed control at retail according to Commission 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 an one region of the Czech Republic 8-times within a year by the inspectors from the Regional inspectorate and analysed in CAFIA laboratory. The sampling by CAFIA was random.

Frequency of the sampling

8-times a year an one sample.

Type of specimen taken

Other: canned and 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 in canned and smoked fishery products from fish species of the family Scombridae, Clupeidae, Scombresosidae.

Results of the investigation

In total, 7 samples of smoked fishery products (5x mackerel, 1x herring, 1x brisling) and 3 samples of canned fishery products (2x 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	CAFIA	batch	25g	10	0	10			

4.2. ENTEROBACTER SAKAZAKII

4.2.1. General evaluation of the national situation

4.2.2. Enterobacter sakazakii in foodstuffs

A. Enterobacter sakazakii in foodstuffs

Monitoring system

Sampling strategy

There is no official National program for monitoring of Enterobacter sakazakii at retail. CAFIA performed control at retail according to Commission 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 two regions of the Czech Republic twice a year by the inspectors from the Regional inspectorates and analysed in CAFIA laboratory. The sampling by CAFIA was random.

Frequency of the sampling

Twice a year.

Type of specimen taken

Other: dried infant formulae (made from cow's milk)

Methods of sampling (description of sampling techniques)

Sample of 100 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=30 in accordance with Commission Regulation (EC) No 2073/ 2005 were taken.

Diagnostic/ analytical methods used

Modified bacteriological method for the detection of E.sakazakii in milk products ISO/ TS 22964 - detection of E.sakazakii was made in 25g (not in 10g - a recommendation in Commission Regulation (EC) No 2073/ 2005).

Control program/ mechanisms

Recent actions taken to control the hazard

CAFIA monitored of E.sakazakii in dried infant fomulae.

Results of the investigation

One (14.3%) sample of dried infant formulae out of the total number of 7 samples tested by the CAFIA was E.sakazakii positive.

Table Enterobacter sakazakii in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Enterobacter sakazakii
Infant formula					
dried	CAFIA	batch	25g	7	1

4.3. STAPHYLOCOCCAL ENTEROTOXINS

4.3.1. General evaluation of the national situation

4.3.2. Staphylococcal enterotoxins in foodstuffs

5. FOODBORNE OUTBREAKS

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

A. Foodborne outbreaks

System in place for identification, epidemological investigations and reporting of foodborne outbreaks

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

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.

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

Main causative agens 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 Centre of epidemiology and microbiology reports (NIPH).

Control measures or other actions taken to improve the situation

Control measures performed are done on legal basis.

Table Foodborne outbreaks in humans

Causative agent	General outbreak	Household outbreak	Total Number of persons			Food implicated			Type of evidence for implication of the food	Place where food was consumed	Contributing factors
			ill (in total)	died	in hospital	Food (sub)category	Suspected as a source	Confirmed as a source			
	1	2	3	4	5	6	7		8	9	10
Campylobacter - C. jejuni		2		95	0	0	pork		epidemiological evidence	canteen	
Listeria - L. monocytogenes		1		78	13	78	soft cheeses		laboratory, PFGE		
Salmonella - S. Agama		1		4	0	4					eggs, contact
Salmonella - S. Enteritidis - Not typable		61		1261	3	181	eggs, sweets, deli		epidemiological evidence	technological safety failure	