European Food Safety Authority

ZOONOSES MONITORING

POLAND

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

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

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

IN 2009

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: Poland

Reporting Year:

Laboratory name	Description	Contribution
General Veterinary Inspectorate		zoonoses / hygiene tabel
Natiomal Institute of Public Health- National Institute of Hygiene		FBO tabel, tabel concernig people

PREFACE

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

The report contains information on trends and sources of zoonoses and zoonotic agents in Poland during the year 2009 .

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

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

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

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

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

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1. ANIMAL POPULATIONS

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

A. Information on susceptible animal population

Sources of information

Data on the number of herds with reference to cattle, pigs and breeding,laying hens and broilers obtained the data in the District Veterinary Ispectorates, which were placed in reports to the European Commission.

Some data on the number of herds and holdings were obtained from the Agency for Restructuring and Modernisation of Agriculture (ARMA); whereas, data on the herds of other animal species (eg. reindeer,deer) were obtained in the District Veterinary Inspectorates. Data on the number of horses herds was obtained from the Polish Horse Breeders Association.

Data on the number of headage of susceptible animals was obtained from the Agency for Restructuring and Modernisation of Agriculture; while, data on other animal species was obtained in the District Veterinary Inspectorates.

Number of slaughtered animals is a number of animals examined by the official veterinarians in the slaughterhouses prezented in Report RRW-6 for 2008 prepared by General Veterinary Inspectorate and edited by Ministry of Agriculture and Rural Development,

Dates the figures relate to and the content of the figures

Data sent by the District Veterinary Inspectorates refer to all year 2009.

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

Definitions used for the purposes of monitoring and eradication of zoonoses are in compliance with the definitions determined by the Regulation 178/2002, Regulation 2160/2003 and Directives: 2003/99, 64/432, 90/539.

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

In 2009 number of herds sheep, goats, pigs and ducks were incresed in comparing to 2008. In case of herds of pigs was realted with stabilization of situation. Number of infected herds of pigs was decreased. Also we still observe increased the number of flocks of Gallus gallus.
In 2008 comparing to 2007, the number of cattle herds decresed but inreased number of live animals. It can be explaind by the fact that holdings which had one or two cows resign therefrom as well as young people moved to the cities. Whereas some farmers enlarged their holdings and number of cattle.
Tere was a slight increased number of pigs herds whereas decreased number of live animals. It was caused by a high price of meat from pigs, and arised holdings, which brought one or two pigs for private domestic use.
As well as decreased of number of livestock was caused by implementation of programme eradication of Aujeszky disease.
In 2008 comparing to 2007, number of sheeps and goats herds increased. It was related with additional payment from Ministry of Agriculture and Rural Development.
In 2008 there was significant decrease in number of flocks and number of live birds of Gallus gallus species. It was propably caused by implementation of National Salmonella contol ptogramme in breeding and laying flocks. Decrease in number of flocks can be explained by the fact that for 2008 many District Veterinary Inspectorates did not provide data on very small flocks and holdings (with less than 10 birds kept for private domestic use).
The number of flocks geese and duck decreased in 2008 to compared with 2007.
Also total number of flocks of turkeys decreased but was significant increased of livestock animals.
The number of horses as well as number of herds and holdings significantly decreased in 2008 comparing

to 2007.
There was a significant increased the number of rabitts, wild boars or fallow deer herds. Whereas was slight significant decreased number of deer and ostriches herds.
For some animals the number of herds were greater than the number of slaughtered animals. This could be explain that in Poland is a lot of holdings, which keep one goat or horse for domestic use or for hobby. As well as we have a small number of slaughterhouses for goats and horses. We export horses to slaughrehouse in the other countries, where existing tradition in eating of horse meat.

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

In 2009 the situation decribed below is similiar like in 2008.
Cattle
Most of livestock was located in 3 voivodeships: mazowieckie, podlaskie and wielkopolskie. At least cattle was in lubuskie voivodship.
Sheep and Goats
Most of sheep and goats are bred in the south regions of Poland, but also many sheep flocks are located in wielkopolskie voivodship which is located in the west part of Poland. Almost 23% of goats are bred in malopolskie voivodship.
Pigs
More than 30% of all pigs are bred in wielkopolskie voivodship, which is well known for location of big commercial holdings belonged to American company. Besides a lot of livestock are bred in lodzkie and mazowieckie voivodships.
Gallus gallus
High density of fowl of Gallus gallus was noted in wielkopolskie, mazowieckie and kujawsko - pomorskie voivideships.
Ducks and geese
Most of number of duck flock wete located in podkarpackie, podlaskie and swietokrzyskie voivodeships. Whereas geese were bred in wielkopolskie and podkarpackie voivodeships.
Turkeys
Over 40% of turkey production was located on warminsko - mazurskie voivodeship. The other localization is in region lubuskie.
Horses
Most number of horses herds were located in podkarpackie and podlaskie voivodeship.

Additional information

Legal acts for animal health, food and feed are
Act of 29 January 2004 on Veterinary Inspection (OJ No 33, item 287, as amended),
Act of 16 December 2005 on products of animal origin (OJ No 17, item 127, as amended),
Act of 11 March 2004 on animal health protection and control of infectious animal diseases (OJ No 69, item 625, as amended),
Act of 22 July 2006 on feedingstuffs (OJ No 144, item 1045)
Part of zoonoses (tuberculosis, bovine, ovine and caprine, as well as swine brucellosis, TSE and rabies) are subjected to obligatory notification and therefore control. Other diseaes are subjected to obligatory registration (bovine, poultry and swine salmonellosis, trichinellosis, toxoplasmosis and listeriosis).

Table Susceptible animal populations

* Only if different than current reporting year

		Livestock numbers (live animals)		Number of herds or flocks		Number of holdings		Number of slaughtered animals		Livestock numbers (live animals)
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*	Data
Cattle (bovine animals)	- in total			726055				1594696		6169652
Deer	farmed - in total			113				32308		8315
Deer - farmed	farmed - fallow deer - at farm - Surveillance			172				1765		35499
Ducks	- in total			8991				3242231		5623009
Gallus gallus (fowl)	grandparent breeding flocks for egg production line			17						
	breeding flocks for egg production line - in total			145						
	broilers			21643						722503630
	laying hens			2236						51220058
	breeding flocks for meat production line - in total			1311						
	grandparent breeding flocks for meat production line			11						
	- in total			25335				620805839		919489225
Geese	- in total			4417				6587270		11887571
Goats	- in total			8103				37238	2008	37009

Table Susceptible animal populations

		Livestock numbers (live animals)		Number of herds or flocks		Number of holdings		Number of slaughtered animals		Livestock numbers (live animals)
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*	Data
Pigs	- in total			457617				17799002		31875637
Reindeers	farmed - in total			3						29
Sheep	- in total			8078				23689		251060
Solipeds, domestic	horses - in total			85932				42554	2008	216426
Turkeys	- in total			3272				23864169		24582837
Wild boars	farmed - in total			25						349
Pheasants	- at farm - Surveillance			33						272493
Minks	farmed - at farm - Surveillance			9						
Ostriches	farmed - at farm - Surveillance			38						
Rabbits	farmed - at farm - Surveillance			7						
Foxes	farmed - at farm - Surveillance			18						
Rabbits	farmed - at farm - Surveillance							300104		
Ostriches	farmed - at farm - Surveillance							2838		5097
Foxes	farmed - at farm - Surveillance	9107								

Table Susceptible animal populations

		Livestock numbers (live animals)		Number of herds or flocks		Number of holdings		Number of slaughtered animals		Livestock numbers (live animals)
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*	Data
Rabbits	farmed - at farm - Surveillance	356928								
Minks	farmed - at farm - Surveillance	319051				9				
Foxes	farmed - at farm - Surveillance					18				
Ostriches	farmed - at farm - Surveillance					34				
Rabbits	farmed - at farm - Surveillance					7				

		Livestock numbers (live animals)	Number of holdings	
Animal species	Category of animals	Year*	Data	Year*
Cattle (bovine animals)	- in total		637637	
Deer	farmed - in total		112	
Deer - farmed	farmed - fallow deer - at farm - Surveillance		165	
Ducks	- in total		8795	
Gallus gallus (fowl)	grandparent breeding flocks for egg production line		1	
	breeding flocks for egg production line - in total			
	broilers		3449	

Table Susceptible animal populations

		Livestock numbers (live animals)	Number of holdings	
Animal species	Category of animals	Year*	Data	Year*
Gallus gallus (fowl)	laying hens		941	
	breeding flocks for meat production line - in total			
	grandparent breeding flocks for meat production line		1	
	- in total		4882	
Geese	- in total		3898	
Goats	- in total		7852	
Pigs	- in total		412847	
Reindeers	farmed - in total		3	
Sheep	- in total		5833	
Solipeds, domestic	horses - in total		81992	
Turkeys	- in total		1844	
Wild boars	farmed - in total		25	
Pheasants	- at farm - Surveillance		27	
Minks	farmed - at farm - Surveillance			

Table Susceptible animal populations

		Livestock numbers (live animals)	Number of holdings	
Animal species	Category of animals	Year*	Data	Year*
Ostriches	farmed - at farm - Surveillance			
Rabbits	farmed - at farm - Surveillance			
Foxes	farmed - at farm - Surveillance			
Rabbits	farmed - at farm - Surveillance			
Ostriches	farmed - at farm - Surveillance			
Foxes	farmed - at farm - Surveillance			
Rabbits	farmed - at farm - Surveillance			
Minks	farmed - at farm - Surveillance			
Foxes	farmed - at farm - Surveillance			
Ostriches	farmed - at farm - Surveillance			
Rabbits	farmed - at farm - Surveillance			

Footnote:

Unfortunately I had problem with collected new data for goats so I must fill in data concerning slaughtered animals from 2008.

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 analysis of the official controls and examinations carried out by operetaros indicates that the frequency of the presence Salmonella spp. in foodstuffs of animal origin and feedstuffs is not much different from the situation detected in other EU countries. Poultry has always played a major role in spreading contamination among humans.

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

Poultry is the main reservoir of Salmonella in Poland, although epidemiological situation in other species, except slauhgter pigs, is not well recognized.
S. Enteritidis predominates in Gallus gallus, as well as in slaughter pigs, whereas S.Saintpaul is main serowar isolated from turkeys. Species specific S. Choleraesuis occurs in pigs, mostly in clinical cases.
The most frequent serovars in poultry are: S. Enteritidis, S. Typhimurium, S. Infantis, S. Virchow, S. Mbandaka, S. Hadar, and in slaughter pigs (according to results of baseline survey) - S. Enteritidis, S.Typhimurium and S. Derby.
Higher Salmonella prevalence is observed in poultry commercial flocks than in breeders. There are differences in Salmonella infection rates in different poultry species. Infection rate did not differ significantly between ducks, geese and turkey flocks.

Poultry products are the most frequently contaminated by Salmonella. High Salmonella contamination rate was found in raw broiler meat preparation intended to be eaten cooked (5%). It should be pointed out that relatively low Salmonella prevalence was found in the case of pig and bovine carcasses and meat products of thereof.

This fact is connected with good hygienic practices observed in slaughterhouses in Poland and low prevalence of Salmonella in slaugter bovine animals and pigs.
Other animals were rarely tested and therefore epidemiological situation remained not well recognized.
Salmonella is not found in milk and is very rare in milk products. Mail serovars of Salmonella in food are S.Typhimurium, S.Enteritidis and S.Infantis. From 2007 when SCP in poultry flocks started existing, number of Salmonella decreased.

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

The data shows the typical Salmonella infection cycle covering feedingstuffs, animals, and foodstuffs influencing consumers health.
Hovewer, it is worth to notice decreasing trend in number of salmonellosis in human.

Recent actions taken to control the zoonoses

From 2007 was introduced National Salmonella control programme in breeding flocks of Gallus gallus and is continuing up to this day. Whereas in 2008 in Poland was implemented National Salmonella control

programme in laying hens flocks. Programmes are obligatory. The national Salmonella control programmes were based on Regulation No 2160/2003 of the European Parliament and of the Council of 17 November 2003 on the control of salmonella and other specified food-borne zoonotic agents as well as on Regulation 1003/2005, Regulation 1168/2006 and Regulation 1177/2006.
Sampling was conducted by owners as well as official authority. The tests were performed in regional veterinary laboratories, with status of official laboratories. When S. Enteritidis, S. Typhimurium or S. Infantis, S. Hadar or S. Virchow (breeding flocks) had been detected in samples taken by the operator, then official samples were taken by competent authority. The eggs were kept on holding and no birds could leave the flock until confirmation or exclusion of Salmonella. If the initial positive result was confirmed, official authorities supervised slaughtering of broilers. Eggs from S. Enteritidis and/or S. Typhimurium positive flocks were destroyed or sent to the egg-processing plants. In 2007 antibiotic treatment was allowed, therefore infected bird were often treated with antimicrobials.
After depopulation of the flock the farm was cleaned and disinfected, including safe disposal of manure or litter.
In 2007, 2 baseline studies were conducted for presence of Salmonella spp. - in slaugter pigs and in turkeys. Results were sent to the European Commission.
There are no official control programmes in place in other animal species. Other species are examined mainly in the case of clinical problems.

From 2009 was introduced SCP in broilers flocks.

Additional information

Salmonella in feedingstuffs:

The feeding stuffs for poultry and other animals must be free from Salmonella. The samples of feeding stuffs are sent for testing also by the owners of poultry farms.

Veterinary Inspection conducts random, regular inspection in feeding stuffs production plants, in particular of microbiological standards, types of internal controls used by the owners of these plants to guarantee the appropriate quality of final product. In addition, it was foreseen that within the National Plan for the official control of animal feedstuffs in the scope of the supervision of Veterinary Inspection every year, samples are going to be randomly taken from the feedstuffs production plants, holdings and trading and tested for salmonella.

Operators duties in case of detection of inappropriate microbiological quality of product

1.notifying the District Veterinary Officer on the results of sample testing and the batch of products from which they were taken
2.secondary processing of contaminated batch, according to an indicated method, under supervision of Veterinary Inspection
3.increasing the frequency of sampling
4.verifying the origin and the indications of raw materials used in production
5.conducting appropriate cleaning and disinfecting of technical equipment

Methodology:
Regional veterinary laboratories follow ISO-EN 6579/2002 standard which was implemented in Poland as PN ISO EN 6579:2003. The strains isolated all over Poland were sent to National Reference Laboratory

for Salmonella for further epidemiological studies.
Baseline studies are performed according to appropriate EU technical specifications.
Antimicrobial resistance in Salmonella was performed with microbroth dilution method and E. coli was tested using disc diffusion method. The tests were performed and the results were interpreted according to CLSI (formerly NCCLS) recommendations.

2.1.2 Salmonellosis in humans

A. Salmonellosis in humans

Reporting system in place for the human cases

Information was direct to ECDC.

2.1.3 Salmonella in foodstuffs

A. Salmonella spp. in pig meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

According to meat hygiene regulations.
All procedure concerning to sampling are written in HACCP. Official sampling cover only 10% of all samples taken by FBO.

At meat processing plant

According to meat hygiene regulations.
All procedure concerning to sampling are written in HACCP. Official sampling cover only 10% of all samples taken by FBO.

Frequency of the sampling

At slaughterhouse and cutting plant

Other: 10% official sampling in order to verification FBO sampling.

At meat processing plant

Other: 10% official sampling in order to verification FBO sampling.

Control program/mechanisms

The control program/strategies in place

There was no national control programme existing. Operators must obey EU hygiene legislation and prepare internal control programmes and sampling strategies.

Measures in case of the positive findings or single cases

Products are destroyed and in case of positive carcass for Salmonella, meat is heat treated in order to destroy Salmonella.

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

In 2009, 47 441 units of pig meat were tested. 95 positive results for Salmonella were found.

In 2008, Salmonella was found in fresh meat (0.25%) as well as in products derived from pigs. The highest prevalence was observed in meat preparation intended to eaten raw (0,83%) and meat products-raw but intended to be eaten cooked (0,64%).
In 9 sampling unit was found S. Typhimurium.

B. Salmonella spp. in bovine meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

According to regulation 2073/2005.
All procedure concerning to sampling are written in HACCP. Official sampling cover only 10% of all samples taken by FBO.

At meat processing plant

According to regulation 2073/2005.
All procedure concerning to sampling are written in HACCP. Official sampling cover only 10% of all samples taken by FBO.

Frequency of the sampling

At slaughterhouse and cutting plant

Other: 10% official sampling in order to verification FBO sampling.

At meat processing plant

Other: 10% official sampling in order to verification FBO sampling.

Type of specimen taken

At slaughterhouse and cutting plant

Other: -surface of carcasses,
- environmental samples

Control program/mechanisms

The control program/strategies in place

Samples are taken by operators or within official control.
FBO introduce DVI with their HACCP and sampling scheme. DVI accept or not this and afterwords takes 10% samples in order to verification results.

Measures in case of the positive findings or single cases

According to meat hygiene regulations.

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

In 2009, 15 648 units of bovine were tested, and 34 positive results were found.
Salmonella spp. was found in 16 cases. The most positive results were in meat preparation from bovine meat intended to eaten cooked (7,2%).

Additional information

General Veterinary Officer elaborated guidelines, which contains verification procedures for District Veterinary Officer.

C. Salmonella spp. in broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

According to meat hygiene regulations.
All procedure concerning to sampling are written in HACCP. Official sampling cover only 10% of all samples taken by FBO.

At meat processing plant

According to meat hygiene regulations.
All procedure concerning to sampling are written in HACCP. Official sampling cover only 10% of all samples taken by FBO.

Frequency of the sampling

At slaughterhouse and cutting plant

Other: 10% official sampling in order to verification FBO sampling.

At meat processing plant

Other: 10% official sampling in order to verification FBO sampling.

Type of specimen taken

At slaughterhouse and cutting plant

Other: meat juice or tissue

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

Control program/mechanisms

The control program/strategies in place

There is no official control programme in place.

Measures in case of the positive findings or single cases

According to meat hygiene regulations.

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

In 2009,has been tested 13 603 003 samples from meat from broilers. The most positive cases were found in fresh meat from broilers.
In 2008 most contaminated from broiler meat and products thereof were: fresh broiler meat (6,85%), meat product raw intended to be eaten cooked (5,28%), fresh meat and mechanically seperated meat (5,54%). Compared with the 2007 contamination decreased.
In 2008 were conducted survey on prevalence of Salmonella spp. in broiler carcasses carried out according to Commision Desicion 2007/516/EC. Salmonella was found in 107 of 420 tested carcass samples (25,5%).

D. Salmonella spp. in eggs and egg products

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

Salmonella is very rare found in eggs and products thereof. None of eggs products tested were positive for Salmonella spp. in 2007.
But in 2008 Salmonella was found in 0,33% eggs and egg product tested.
In 2009, has been tested 2992 samples derived from eggs and egg products and Salmonella was found in 4 cases. Percentage of Salmonella took away 0,1%.

E. Salmonella spp. in turkey meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

According to meat hygiene regulations.
All procedure concerning to sampling are written in HACCP. Official sampling cover only 10% of all samples taken by FBO.

At meat processing plant

According to meat hygiene regulations.
All procedure concerning to sampling are written in HACCP. Official sampling cover only 10% of all samples taken by FBO.

Frequency of the sampling

At slaughterhouse and cutting plant

Other: 10% official sampling in order to verification FBO sampling.

At meat processing plant

Other: 10% official sampling in order to verification FBO sampling.

Type of specimen taken

At slaughterhouse and cutting plant

Other: meat juice or tissue

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

In 2009, has been tested 4 421 samples from meat from turkey. 135 samples were positive. Only in 5 cases was found S. Typhimurium.
In 2007, the highest contamination of turkey products was found in minced meat intended to be eaten cooked (14.34%), neck skin (11.3%) and in meat preparations intended to be eaten cooked (7.25%).
Generally in 2008 in meat from turkey and product thereof Salmonella was found in 4,96%. The most contaminated was fresh turkey meat, in this case Salmonella was found in 180 samples.

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Meat from broilers (Gallus gallus) - fresh - at slaughterhouse	RVL/processing plant	Batch	25g	8664	479	13	5	461
Meat from broilers (Gallus gallus) - fresh - at processing plant	RVL	Batch	200g	50	0			
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant	RVL	Batch	25g	874	1			1
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at processing plant	RVL	Batch	10g	1423	15	1		14
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM)	RVL	Batch	200g	312	3			3
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - at processing plant	RVL	Batch	10g	212	4			4
Meat from duck - at slaughterhouse	RVL	Batch	25g	55	0			
Meat from geese - at slaughterhouse	RVL	Batch	25g	33	0			
Meat from turkey - fresh - at slaughterhouse	laboratory	Batch	27g	125	0			
Meat from turkey - fresh - at processing plant	RVL	Batch	10-25g	1398	97			97
Meat from turkey - meat products - cooked, ready-to-eat - at processing plant	RVL	Batch	10g	1422	15			15
Meat from turkey - meat products - raw but intended to be eaten cooked - at processing plant	RVL	Batch	10g	285	1			1
Meat from turkey - mechanically separated meat (MSM)	RVL	Batch	10g	385	0			

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Meat from turkey - minced meat - intended to be eaten cooked - at processing plant	RVL	Batch	10g	806	22		5	17
Meat from broilers (Gallus gallus) - at cutting plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	300g	5	0			
Meat from broilers (Gallus gallus) - at cutting plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	500g	20	0			
Meat from broilers (Gallus gallus) - at slaughterhouse - animal sample - Surveillance - HACCP and own checks	RVL	Batch	10-25g	78	5			5
Meat from broilers (Gallus gallus) - fresh - at cutting plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25g	520	18			18
Meat from broilers (Gallus gallus) - meat products - raw and intended to be eaten raw - at cutting plant - domestic production - Surveillance - HACCP and own checks	cutting plant	Batch	400g	5	5			5
Meat from duck - at processing plant - domestic production - Surveillance - HACCP and own checks	processing plant	Batch	10g	200	0			
Meat from geese - at processing plant - domestic production - Surveillance - HACCP and own checks	processing plant	Batch	10g	20	0			

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Meat from bovine animals - fresh - at slaughterhouse	RVL	Batch	400cm2	7806	12			12
Meat from bovine animals - fresh - at processing plant	RVL	Batch	100cm2	432	0			
Meat from bovine animals - meat preparation - intended to be eaten raw - at processing plant	RVL	Batch	10g	411	2			2
Meat from bovine animals - meat preparation - intended to be eaten cooked - at processing plant	RVL	Batch	10g	94	0			
Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant	processing plant	Batch	10g	63	0			
Meat from bovine animals - meat products - raw but intended to be eaten cooked - at processing plant	RVL	Batch	10g	355	5			5
Meat from bovine animals - mechanically separated meat (MSM) - at processing plant	processing plant	Single	250g	61	0			
Meat from bovine animals - minced meat - intended to be eaten raw - at processing plant	RVL	Batch	200g	1031	12		8	4
Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant	RVL	Batch	10g	3959	3		1	2
Meat from bovine animals - minced meat - intended to be eaten cooked - at retail	RVL	Batch	10g	5	0			
Meat from horse - fresh - at slaughterhouse	DVI	Batch	400cm2	235	0			
Meat from horse - fresh - at processing plant	RVL	Single	75	0	0			

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Meat from horse - minced meat - at processing plant	RVL	Single	25g	2	0			
Meat from pig - fresh - at slaughterhouse	RVL	Batch	400cm2	20146	21		2	19
Meat from pig - fresh - at processing plant	RVL	Batch	10g	10	1			1
Meat from pig - meat preparation - intended to be eaten raw - at processing plant	RVL	Batch	25g	3177	6			6
Meat from pig - meat preparation - intended to be eaten cooked - at processing plant	RVL	Batch	10g/200g	3874	6			6
Meat from pig - meat products - cooked, ready-to-eat - at processing plant	RVL	Batch	200g	8480	1			1
Meat from pig - meat products - cooked, ready-to-eat - at retail	RVL	Batch	10g	0	0			
Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant	RVL	Batch	10-25g	3011	17			17
Meat from pig - meat products - raw but intended to be eaten cooked - at retail	RVL	Batch	10g	30	0			
Meat from pig - mechanically separated meat (MSM)	RVL	Batch	200g	315	2			2
Meat from pig - minced meat - intended to be eaten raw - at processing plant	RVL	Batch	25g	1160	12		8	4
Meat from pig - minced meat - intended to be eaten cooked - at processing plant	RVL	Batch	10g	7127	29		1	28
Meat from pig - minced meat - intended to be eaten cooked - at retail	RVL	Batch	10g	111	0			
Meat from sheep - fresh - at slaughterhouse	DVI	Single	250g	107	0			

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Meat from bovine animals - minced meat - intended to be eaten cooked - at slaughterhouse - animal sample - Surveillance - HACCP and own checks	RVL	Batch	10g	92	0			
Meat from bovine animals and pig - meat products - at processing plant - domestic production - Surveillance - HACCP and own checks	processing plant	Single	250g	275	0			
Meat from bovine animals and pig - minced meat - in total - Surveillance - HACCP and own checks	RVL	Batch	10-25g	1064	0			
Meat from wild game - land mammals - in total - Surveillance - HACCP and own checks			10g	959	4			4

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Crustaceans - unspecified - cooked - at processing plant [1)]	RVL	Single	25g	25	0			
Crustaceans - unspecified - raw - at processing plant [2)]	RVL	Single	25g	19	0			
Egg products - at processing plant	RVL	Batch	25g	2383	1	0	0	1
Eggs - raw material (liquid egg) for egg products	RVL	Batch	25g	261	0			
Eggs - table eggs - at packing centre	RVL	Batch	25g	264	0			
Eggs - table eggs - at retail	RVL	Batch	25g	84	3	0	0	3
Live bivalve molluscs	processing plant	Single	25g	4	0			
Molluscan shellfish - cooked - at processing plant	RVL	Batch	25g	7	0			
Molluscan shellfish - raw - at processing plant	RVL	Single	25g	9	0			
Crustaceans - unspecified - cooked - at processing plant - environmental sample - Surveillance - HACCP and own checks	RVL	Single	50g	125	0			
Eggs - table eggs - at packing centre - Surveillance - official controls - objective sampling	RVL	Batch	25g	99	0			
Fish - marinated - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25g	50	0			
Fish - raw - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25g	20	0			

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Fish - raw - frozen - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25g	101	0			
Fish - smoked - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25g	76	0			
Fruits and vegetables - products - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25g	2	0			
Molluscan shellfish - cooked - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	9	0			
Other food - at processing plant - domestic production - Surveillance - HACCP and own checks (delikatessen)	RVL	Batch	25g	109	0			
Vegetables - products - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25g	36	0			

Comments:

[1)] official sampling

[2)] official sampling

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Cheeses made from cows' milk - at processing plant [1)]	RVL	Batch	25g	20	0			
Cheeses made from cows' milk - soft and semi-soft - at processing plant	RVL/processing plant	Batch	25g	41	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant	RVL	Batch	25g	882	0			
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant [2)]	RVL	Batch	25g	25	0			
Cheeses made from goats' milk - soft and semi-soft - at processing plant [3)]	DVI	Batch	200g	2	0			
Cheeses made from sheep's milk - at processing plant [4)]	RVL	Single	25g	1	0			
Dairy products (excluding cheeses) - butter - made from raw or low heat-treated milk - at processing plant	RVL	Batch	25g	217	0			
Dairy products (excluding cheeses) - cream - made from raw or low heat-treated milk - at retail	RVL	Batch	25g	129	0			
Dairy products (excluding cheeses) - ice-cream - at processing plant	processing plant	Batch	25g	444	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant	RVL	Batch	25g	329	0			
Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products [5)]	processing plant	Batch	25g	10874	0			

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products [6)]	processing plant	Batch	50 ml	18	0			
Cheeses made from cows' milk - soft and semi-soft - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL/processing plant	Batch	25g	519	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25g	1410	0			
Dairy products (excluding cheeses) - butter - made from pasteurised milk - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25g	95	0			
Dairy products (excluding cheeses) - butter - made from pasteurised milk - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	5	0			
Dairy products (excluding cheeses) - butter - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - official controls - selective sampling	RVL	Batch	25g	5	0			
Dairy products (excluding cheeses) - cream - made from pasteurised milk - at processing plant - domestic production - Surveillance - HACCP and own checks	processing plant	Batch	25g	87	0			
Dairy products (excluding cheeses) - dairy desserts - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25ml	48	0			

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Dairy products (excluding cheeses) - dairy desserts - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	120	0			
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL/ industry	Batch	25ml/330ml	325	0			
Dairy products (excluding cheeses) - ice-cream - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	10	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	230	0			
Dairy products (excluding cheeses) - yoghurt - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25/200g	32	0			
Milk, cows' - raw milk for manufacture - at processing plant - domestic production - Surveillance - official controls - objective sampling [7)]	RVL	Batch	25ml	60	0			
Milk, cows' - raw milk for manufacture - at processing plant - domestic production - Surveillance - official controls - selective sampling [8)]	RVL	Batch	25ml	20	0			

Comments:

[1)] hard cheeses from pasteurised milk

[2)] official sampling/objective sampling

Table Salmonella in milk and dairy products

[3] industry sampling
[4] hard cheeses from raw milk
[5] industry sampling
[6] official sampling-selective
[7] manufacture of pasteurised /UHT products
[8] manufacture of pasteurised /UHT products

2.1.4 Salmonella in animals

A. Salmonella spp. in Gallus Gallus - breeding flocks

Monitoring system

Sampling strategy

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

From 2007 in Poland was introduced National Salmonella control programme in breeding flocks of Gallus gallus.
The sampling frame cover all adult breeding flocks comprising at least 250 birds.
Bases of sampling:
- sampling at the initiative of the operator
- official sampling.

Operator checks:
-day -old chicks,
-four-week-old birds,
-birds two weeks before moving to laying phase or laying unit and
-every second week during the laying period.
Official sampling include:
-within four weeks following moving to layinh phase or laying unit,
-toward the end of the laying phase, not earlier than eight weeks before the end of production cycle and
-during the production, at any time sufficiently distant from sample reffered above.

Type of specimen taken:
1. day-old chicks
- sample bedding materials and meconium from 10 transporting boxes from every supply or
-superficial swabs from 10 bottom of transporting boxes or
-dead chick (no more than 20).
2. rearing and production period
- faeces made up of separate samples of fresh faeces each weighing not less than 1 g taken at random from the number of sites in the buldings were the birds are kept,
-five pars of boot swabs,
- in cage breeding flocks-naturally mixed faeces from dropping belts, scrapers or deep pits.

The samples must be deliver to regional veterinary laboratory. In case if Salmonella was detected, the RVL informed District Veterinary Officer, whose take up measures in case of positive finding in single cases.

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

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

Industry sampling - every 2 weeks.
Official sampling:
(a) within four weeks following moving to laying phase or laying unit;

(b) towards the end of the laying phase, not earlier than eight weeks before the end of the production cycle;

(c) during the production, at any time sufficiently distant from the samples referred to in points (a) and (b).

Type of specimen taken

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

Other: sample bedding materials and meconium from 10 transporting boxes from every supply or
-superficial swabs from 10 bottom of transporting boxes or
-dead chick (no more than 20).

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

Other:
- socks/ boot swabs
- dust
- feaces

Methods of sampling (description of sampling techniques)

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

Sampling included:
- sample bedding materials and meconium from 10 transporting boxes from every supply or
-superficial swabs from 10 bottom of transporting boxes or
-dead chick (no more than 20).

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

Sampling included:
- faeces made up of separate samples of fresh faeces each weighing not less than 1 g taken at random from the number of sites in the buldings were the birds are kept,
-five pars of boot swabs,
- in cage breeding flocks-naturally mixed faeces from dropping belts, scrapers or deep pits.

Breeding flocks: Production period

Sampling included:
- faeces made up of separate samples of fresh faeces each weighing not less than 1 g taken at random from the number of sites in the buldings were the birds are kept,
-five pars of boot swabs,
- in cage breeding flocks-naturally mixed faeces from dropping belts, scrapers or deep pits.

Case definition

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

A positive case is where positive result in laboratory test for detection of S.Enteritidis, S. Typhimurium, S. Infantis, S.Hadar or S. Virchow was confirmed in samples taken officialy and also when detected

antimicrobials or bacterial growth inhibitory effect are it shall be accounted for as an infected breeding flock.

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

A positive case is where positive result in laboratory test for detection of S.Enteritidis, S. Typhimurium, S. Infantis, S.Hadar or S. Virchow was confirmed in samples taken officialy and also when detected antimicrobials or bacterial growth inhibitory effect are it shall be accounted for as an infected breeding flock.

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

A positive case in adult flock is where positive result in laboratory test for detection of S.Enteritidis, S. Typhimurium, S. Infantis, S.Hadar or S. Virchow was confirmed in samples taken officialy and also when detected antimicrobials or bacterial growth inhibitory effect are it shall be accounted for as an infected adult breeding flock.

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)

In 2008 were vaccinated 926 breeding flocks.

Measures in case of the positive findings or single cases

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

Procedures in case of a suspected infection after owner's sampling
1. District Veterinary Officer take sample for laboratory test- and in additional sample of feed and water
2. DVO orders
-isolating the poultry on the farm
-disinfection of hatching eggs
-using disinfection agent before the entrances and exits of poultry houses and before the entrance and the exit of the farm grounds
-hatching incubated eggs in separeted hatchers in fumes of disinfection agent
3. DVO forbids
-carrying away eggs from the farm grounds (a possibility of bringing them directly to a factory producing or processing egg products);
-using products hindering isolation of bacilli in the flock before taking official samples;
-limit moving poultry from and into farm;
-remove from farm feaces poultry and used bedding materials.

Procedures after obtained positive results of official sampling:
1.DVO orders
-urgent slaughtering or killing all poultry;
-destroying all carcasses;
-destroying hatchering eggs and chicks origanated from them ;
-destroying or management feeds after heat treated guarantee killed salmonella;

-destroying or management bedding materials, faeces and others equipment, which could be contaminated;
-cleaning and disinfection of places where animals are kept, theirs surronding, transportion means, objects.

Results of the investigation

In 2009, in adult flocks 29 positive results were found for 5 serotypes of salmonella ond 8 other serotype which are not under the programme. Most often S. Enteritidis was confirmed.

In 2008, Salmonella spp. was found in 72 unit sampling in 1159 breeding flocks. All positive results were confirmed by official sampling. In 63 cases was found S. enteritidis, S. typhimurium, S. infantis, S. hadar and S. virchow. the other 9 was unspecified Salmonella.

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

In 2009, in adult flock percentage of positive flock was 2,6%. So the community target was no set but number of positive flocks decreased.
The percentage value in adult breeding flocks at production period with positive results in 2008 was 5,75%. There was increase comparing to 2007, when the percentage value took away 3,1%.

B. Salmonella spp. in Gallus Gallus - broiler flocks

Monitoring system

Sampling strategy

Broiler flocks

From 2009 SCP in broilers was introduced. Samples was taken by operators three weeks before sending off birds to slaughterhouse. Operator's must examine every broiler flock because of on this bases official veterinarian filled up the health certificate. Without certificate every broilers delivery to slaughterhouse would not be accept. In additional operator's examined one-day chicks.

Frequency of the sampling

Broiler flocks: Before slaughter at farm

3 weeks prior to slaughter

Type of specimen taken

Broiler flocks: Before slaughter at farm

Other: feaces or boot swabs

Methods of sampling (description of sampling techniques)

Broiler flocks: Before slaughter at farm

according to regulation No 648/2007

Case definition

Broiler flocks: Before slaughter at farm

A positive case is where positive result in laboratory test for detection of S.Enteritidis, S. Typhimurium was confirmed in samples taken officialy and also when detected antimicrobials or bacterial growth inhibitory effect.

Diagnostic/analytical methods used

Broiler flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Measures in case of the positive findings or single cases

Broiler flocks: Before slaughter at farm

1. District Veterinary Officer take sample for laboratory test- and in additional sample of feed and water.
2. District Veterinary Officer
forbids:
-limit moving poultry from and into farm;
-remove from farm feaces poultry and used bedding materials;
orders:
-destroying or management feeds after heat treated guarantee killed salmonella
-destroying or management bedding materials, faeces and others equipment, which could be contaminated
-cleaning and disinfection of places where animals are kept, theirs surronding, transportion means, objects.

Broiler flocks: At slaughter (flock based approach)

According to meat hygiene regulations.

Results of the investigation

In 2009, 128 positive results for S. Enteritidis and S. Typhimurium were found. This results were confirmed in official sampling.

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

The number of Salmonella in broilers flock is satisfactory. Comparison all cases Salmonella (346) in 2009 with previous year, the number of positive flocks decreased.

Additional information

In 2008, 16 481 flocks of broiler were tested. Therein was 873 positive result of Salmonella. Salmonella Enteritidis was detected in 445 samples, Salmonella Typhimurium in 23 samples and in 405 was detected Salmonella spp., unspecified.

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

Monitoring system

Sampling strategy

Laying hens flocks

National provisions:
Examination of samples (operators and official)and they are tested in Regional Veteryinary Laboratory.
Flock positive in own check is suspected flock. Afterwords is administrative proceeding in result we have or negative result or positive result of official confimatory sampling, what means it's infected flock.
Infected birds are slaughter or killing.
Eggs from infected flock are channeled for processing or destroying.
Sampling by an competent authority will take place at least:
- in one flock per year per holding comprising at least 1000 birds
-at the age of 24+/- 2 weeks in laying flocks housed in buildings where Salmonella was detected in the preceding flock
- in any case of suspicion of Salmonella Enteritidis and S. Typhimurium infection, as a result of the epidemiological investigation of foodborne outbreaks
- in all other laying flocks on the holding in case S. enteritidis or S. typhimurium are detected in one laying flock on the holding
- in cases where the competent authority considers it appropriate.

Frequency of the sampling

Laying hens: Day-old chicks

Every flock is sampled

Laying hens: Rearing period

At the age of 4 weeks by food bussines operator

Laying hens: Production period

Every _15___ weeks by FBO

Type of specimen taken

Laying hens: Day-old chicks

Meconium

Laying hens: Rearing period

Faeces

Laying hens: Production period

Faeces

Methods of sampling (description of sampling techniques)

Laying hens: Day-old chicks

Day-old chicks

- sample bedding materials and meconium from 10 transporting boxes from every supply (on 25 g from site) or in cases without litter

-superficial swabs from 10 bottom of transporting boxes (pooled in laboratory into 1 sample) or

-dead chicks (also during the transport), no more than 20 chicks– pooled in laboratory into 1 sample

Laying hens: Rearing period

pooled feaces

Laying hens: Production period

A. In cage flocks, 2 × 150 grams of naturally pooled faeces shall be taken from all belts or scrapers in the house after running the manure removal system; however, in the case of step cage houses without scrapers or belts 2 × 150 grams of mixed fresh faeces must be collected from 60 different places beneath the cages in the dropping pits.
B. In barn or free-range houses, two pairs of boot swabs or socks be taken, without changing overboots between boot swabs
C. Additional samples in case of the official sampling
-250 ml containing at least 100 gram of dust shall be collected from prolific sources of dust throughout the house or
-an additional sample of 150 grams naturally pooled faeces or
-an additional pair of boot swabs or socks shall be taken.

Case definition

Laying hens: Production period

A positive case is a adult flock where positive result in laboratory test for detection of Salmonella Enteritidis and Salmonella Typhimurium was confirmed in samples taken officialy and also when detected antimicrobials or bacterial growth inhibitory effect.

Diagnostic/analytical methods used

Laying hens: Day-old chicks

Bacteriological method: ISO 6579:2002

Laying hens: Rearing period

Bacteriological method: ISO 6579:2002

Laying hens: Production period

Bacteriological method: ISO 6579:2002

Vaccination policy

Laying hens flocks

Live Salmonella vaccines may be be used in the framework of national Salmonella control programme:
-where the manufacturer provide an appropriate method to distinguish bacteriologically wild-type strains of Salmonella from vaccine strains,
-in laying hens during production if the safety of the use has been demonstrated and they are authorised for such purpose.
The competent authority may provide derogation from obligation to vaccinate laying hens to a holding if:
-he is satisfied with the preventive measures taken on the holding of rearing and on the holding of egg production,
and
-the absence of Salmonella Enteritidis was demonstrated on the holding of rearing and production during the 12 months preceding the arrival of the animals.
In 2008 only 872 flocks were vaccinated.

Measures in case of the positive findings or single cases

Laying hens flocks

If Salmonella was found in the operator's sample the epidemiological inteligence collecting official samples:
- from suspected flock,
-from other flock,
-feed,
-water.
And if Salmonella in official sample it's infected flock.
Administration processing: District Veterinary officer:
1. Orders:
-immediate slaughter or killing all birds
-utilization of killed and dead animals
-isolated of the infected flock
-use of the proper disinfetants at the entrance and exits of the hen houses
-isolation of the eggs (separate storage or designation for thermal processing)
2. Forbids:
-export eggs from the holding (exeption designation for thermal processing)
-use of antimicrobials
-export of faeces and bedding from the holding
-export of the birds, except for slaugtery transport.

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

From 2008 was introduced National Salmonella contol programme in laying hens of Gallus gallus. It was the first year of the realisation Salmonella control programme in Poland. From 2004 to 2005 in Poland were conducted baseline survey concerning prevalence of Salmonella in laying hens flock. The prevalence of salmonella hestitate from 57% to 94%.
In 2008 Salmonella spp. was found in 169 laying hens flocks among 1533 tested.
S. Enteritidis was found in 140 flocks, S. Typhimurium in 8 flocks. S. Hadar, S. Infantis and S. Virchow was found in 9 flocks and unspecified Salmonella spp. in 22 flocks. Percentage of infection in adult laying hens flocks came to 9,36%. As you can see the prevalence of Salmonella was decreased.
In 2009 1718 adult flocks were tested and Salmonella was confirmed in 80 adult flocks. Percentage of infection in adult laying flocks came to 4,6%.

D. Salmonella spp. in bovine animals

Monitoring system

Sampling strategy

There was no control programme for salmonella in bovine animals.
In 2009 was no any positive results Salmonella in cattle.

Type of specimen taken

Animals at slaughter (herd based approach)

Surface of carcasses

Results of the investigation

NRL conducted reaserch programme in slaughterhouse and tested 130 cattle.

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

Monitoring system

Sampling strategy

Breeding flocks

Voluntary, based on EU legislation for breeding flocks of Gallus gallus.

Meat production flocks

The sampling 1-2 weeks prior to slaughter

Type of specimen taken

Breeding flocks: Day-old chicks

Other:meconium or dead chicks

Breeding flocks: Rearing period

Other: feaces

Breeding flocks: Production period

Other: feaces or dead ducks or swab from ceaca

Meat production flocks: Before slaughter at farm

Other: feaces

Methods of sampling (description of sampling techniques)

Breeding flocks: Day-old chicks

Based on EU legislation for breeding flocks of Gallus gallus.

Breeding flocks: Rearing period

Based on EU legislation for breeding flocks of Gallus gallus.

Breeding flocks: Production period

Based on EU legislation for breeding flocks of Gallus gallus.

Meat production flocks: Before slaughter at farm

dir.92/117/EEC

Case definition

Breeding flocks: Day-old chicks

A flock is an epidemiological unit.
Definition of a case:
A positive case is a flock, where positive result in laboratory tests for detection of Salmonella was confirmed in samples taken officially.

Breeding flocks: Rearing period

A flock is an epidemiological unit.

Definition of a case:
A positive case is a flock, where positive result in laboratory tests for detection of Salmonella was confirmed in samples taken officially.

Breeding flocks: Production period

A flock is an epidemiological unit.
Definition of a case:
A positive case is a flock, where positive result in laboratory tests for detection of Salmonella was confirmed in samples taken officially.

Meat production flocks: Before slaughter at farm

A flock is an epidemiological unit.
Definition of a case:
A positive case is a flock, where positive result in laboratory tests for detection of Salmonella was confirmed.

Control program/mechanisms

The control program/strategies in place

Breeding flocks

There is no official control programme for ducks in Poland.
Voluntary porgrammes are based on Regulation 2160/2003 and 200/2010.

Meat production flocks

On the basis of the instruction of Chief Veterinary Officer â€“
-IW.z. II D/Sal-2/99- on eradication of salmonellosis in poultry herds intended for slaughter and on the EU legislation.

Measures in case of the positive findings or single cases

According to meat hygiene law.

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

In 2005, Salmonella was found in 7,2% and 16 % of, respectively, breeding and meat production duck flocks. S.Enteritidis and S.Typhimurium were found in several percent of flocks(range 3,4%-20,0%) and the remaining isolates mainly belonged to group C1-C2.
In 2006 Salmonella Enteritidis and Salmonella Typhimurium were the most frequent isolated serovars from breeding and meat production flocks.
In 2007 Salmonella was found in 5.3% of breeding flocks tested and 14% of meat production flocks tested.
In 2008 Salmonella was found in 15,1% of breeding flocks tested and 11,4% of meat production flock tested. As can you see, there was significant increased of prevalence of Salmonella in breeding flocks but slight decreased in meat production flocks. Salmonella Enteritidis was detected in 29 flocks from all, Salmonella typhimurium in 18 flocks and Salmonella spp. was found in 39 samples.
In 2009 percentage of prevalence Salmonella in meat production flocks was 13% and in breeding flocks 12,7%. In compare 2008 with 2009, we could observed slight increased of Salmonella.

Additional information

The results of examinations of all poultry species intended for slaughter and the date of examination had to be indicated in health certificates accompanying the dispatches of birds to a slaughterhouse.
In 2009 was not found positive results for Salmonella in meat from ducks.

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

Monitoring system

Sampling strategy

Breeding flocks

Voluntary, based on EU legislation for breeding flocks of Gallus gallus (Regulations: 2160/2003 and 1003/2005)

Frequency of the sampling

Meat production flocks: Before slaughter at farm

Other: every flock is sampled 3-2 weeks before slaughter

Type of specimen taken

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

Other: feaces, swabs from ceaca or dead geese

Meat production flocks: Before slaughter at farm

Other: feaces or swabs from ceaca or dead geese

Methods of sampling (description of sampling techniques)

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

Based on EU legislation for breeding flocks of Gallus gallus

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

Based on EU legislation for breeding flocks of Gallus gallus

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

Based on EU legislation for breeding flocks of Gallus gallus

Case definition

Breeding flocks: Day-old chicks

A positive case is the flock, where positive results in laboratory tests for detection of Salmonella was confirmed by official sampling

Breeding flocks: Rearing period

A positive case is the flock, where positive results in laboratory tests for detection of Salmonella was confirmed by official sampling

Breeding flocks: Production period

A positive case is the flock, where positive results in laboratory tests for detection of Salmonella was confirmed by official sampling

Meat production flocks: Before slaughter at farm

A positive case is the flock, where positive results in laboratory tests for detection of Salmonella was confirmed by official sampling

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

In 2005, Salmonella was found in 3,4% and 10,1% of, respectively, breeding and meat production geese flocks. Serogroups 0:4, C1-C2 predominated in geese isolates. They were observed, respectively in 38,5% and 35,9% of geese breeding flocks as well 27,5% and 47,5% of meat production flocks.
In 2006, only 10% of samples from breeding and meat production flocks were positive for Salmonella.
In 2007, 2.4% of breeding flocks sampled and 10.4% of sampled meat production flocks were positive.
In 2008 10,03% of breeding flocks sampled and 9,15% of sampled meat production flocks were positive.
S. enteritidis was found in 25,5% and S. Typhimurium in 23,6%.
In 2009 percentage of prevalence of Salmonella is quite low and take away 9,5 %. Most positive cases were found in meat production flocks.

Additional information

In 2009 there was no positive results for Salmonella in meat from geese.

G. Salmonella spp. in pigs

Monitoring system

Sampling strategy

Breeding herds

In 2008 was conducted survey carried out according to Commision Decision of 20 December 2007 concerning a financial contribution from the community towards a survey on the prevalence of salmonella and MRSA in herds breeding pigs to be carried out in the Member states (2006/662/EC).
The survey was implemented according to the General Veterinary Officer Guidelines of 6 December 2007.
Sampling in breeding holdings was specified by weeks of the study period in the Timetables, proportionally to the number of holdings of breeding pigs in given voivodships.
Samples were collected by official veterinarians and reffered to designated laboratories.
The survey comprised 327 sample batches collected from 322 holdings.

Frequency of the sampling

Breeding herds

Sampling takes place during the 12 months

Type of specimen taken

Breeding herds

Faeces

Methods of sampling (description of sampling techniques)

Breeding herds

For bacteriological analysis 10 samples of freshly voiced faeces representing the holding were collected. Each sample of at least 25 g was collected as a gaze swab moved along ca. 2 meters of pen floor covered with faecal mass or as a pool of at least 10 individual faeces. Bacteriological detection was done using Community Reference Laboratory – Salmonella recommended method as described in EN ISO 6579:2002/A1:2007. Most of the analyses were performed within 24 hours after sampling. Salmonella spp. isolates from each positive sample were send to NRL-Salmonella for serotyping according White-Kauffmann-Le Minor scheme.

Diagnostic/analytical methods used

Breeding herds

Bacteriological method: ISO 6579:2002

Measures in case of the positive findings or single cases

According to meat hygiene regulation.

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

Salmonella spp. was found in 28 of 327 tested holdings (8.6%) located in 11 voivodships. The highest percentage of infected breeding flocks were in podkarpackie, śląskie, and lubuskie.
No seasonality was noted on Salmonella spp. occurrence in pigs. Salmonella spp. was more frequently found in holdings of higher size. The influence of boars and gilts replacement policy on Salmonella spp. occurrence, although not significant, might indicate the increased risk of infection for holdings purchasing animals.
Of analysed pen characteristics the statisti-cally significant influence on Salmonella spp. occurrence were found in number of pigs in pen, sex, floor type, all in/all out procedure, pig diet and origin of feed. Furthermore feed additives reduced Salmonella spp. infection whereas antibiotic treatment favoured Salmonella spp. infections.

H. 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)

Sampling is performed by official veterinarian or farmers, based on EU legislation.

Meat production flocks

Sampling is performed within 3 weeks prior to slaughter

Frequency of the sampling

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

Every flock is sampled

Meat production flocks: Before slaughter at farm

Other: every flock is tested 2-3 weeks before slaughter.

Type of specimen taken

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

Other: feaces, organs

Meat production flocks: Before slaughter at farm

Other: feaces, organs

Diagnostic/analytical methods used

Meat production flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Measures in case of the positive findings or single cases

According to meat hygiene law.

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

In 2005, Salmonella was found in 2,1% and 8,1% of, respectively, breeding and meat production turkey flocks. S.Enteritidis was observed in 15,4% and 6,0% of, respectively,turkey breeding and meat production flocks. Majority of turkey isolates belonged to serogroups 0:4 and C1-C2.
In 2006, only 8.3% of the samples from breeding and meat production flocks were positive for Salmonella.
In 2007, out of 1039 samples taken in breeding flocks of turkeys, 36 (3.46%) were positive for Salmonella. In flocks of fattening turkeys, 473 (6.62%) out of 7150 samples were positive for Salmonella. However, out of 367 samples collected in the framework of baseline survey, 94 samples (25.6%) were positive for Salmonella.
In 2008 Salmonella was found in 7,98% od breeding and meat production flocks tested. Salmonella Enteritidis was observed in 4,49%, S. Typhimurium in 28,5%.

In 2009 was observed decrease flocks infected Salmonella. In breeding flocks no positive result was found.

Additional information

The results of examinations of all poultry species intended for slaughter and the date of examination had

to be indicated in health certificates accompanying the dispatches of birds to a slaughterhouse

Table Salmonella in breeding flocks of Gallus gallus

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	Salmonella spp., unspecified
Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period	25	DVI	Flock	25	2	2					
Gallus gallus (fowl) - parent breeding flocks for egg production line - adult	103	DVI	Flock	103	1	1					
Gallus gallus (fowl) - grandparent breeding flocks for egg production line [1)]	17	DVI	Flock	17	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks	71	DVI	Flock	65	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period	275	DVI	Flock	275	4	2		1			1
Gallus gallus (fowl) - parent breeding flocks for broiler production line - adult	926	DVI	Flock	925	35	16	1	1	5	4	8
Gallus gallus (fowl) - parent breeding flocks for broiler production line - unspecified	5	DVI	Flock	5	0						
Gallus gallus (fowl) - grandparent breeding flocks for broiler production line [2)]	11	DVI	Flock	11	0						
Gallus gallus (fowl) - parent breeding flocks, unspecified - day-old chicks	1	DVI	Flock	0	0						
Gallus gallus (fowl) - parent breeding flocks, unspecified - during rearing period	11	DVI	Flock	11	2	2					
Gallus gallus (fowl) - parent breeding flocks, unspecified - adult	11	DVI	Flock	11	1	1					

Comments:

[1)] production period

[2)] rearing period

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Gallus gallus (fowl) - laying hens - during rearing period	2002	RVL/private laboratory	Flock	1948	3	2	0	1
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling	1755	RVL/private laboratory/ DVI	Flock	1718	221	146	15	60
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry	1755	private laboratory/ owner	Flock	1718	110	74	7	29
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling	1755	RVL	Flock	864	63	37	2	24
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - suspect sampling	1755	RVL	Flock	225	47	34	6	7
Gallus gallus (fowl) - broilers - before slaughter - at farm - Control and eradication programmes - official and industry sampling	21643	RVL/ owner	Flock	20665	655	332	13	310
Turkeys - breeding flocks, unspecified	8	RVL	Flock	8	0			
Turkeys - meat production flocks	289	DVI	Flock	261	6	1	1	4
Ducks - breeding flocks, unspecified [1)]	43	DVI	Flock	43	0			
Ducks - meat production flocks [2)]	13	RVL	Flock	13	2	1	1	
Geese - breeding flocks, unspecified [3)]	120	DVI	Flock	120	7	2	3	2
Geese - meat production flocks	656	DVI/RVL	Flock	566	56	9	14	33

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Ducks - breeding flocks, unspecified - adult - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling - objective sampling	20	DVI	Flock	20	3		2	1
Ducks - breeding flocks, unspecified - adult - at farm - animal sample - faeces - Surveillance - HACCP and own checks	6	DVI	Flock	6	4	2	2	
Ducks - breeding flocks, unspecified - adult - at farm - environmental sample - boot swabs - Monitoring - industry sampling - objective sampling	5	DVI	Flock	2	2			2
Ducks - meat production flocks - before slaughter - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling - objective sampling	117	DVI/RVL	Flock	117	10	6	4	
Ducks - meat production flocks - before slaughter - at farm - animal sample - faeces - Monitoring - industry sampling - objective sampling	18	RVL	Flock	18	4	2	2	
Ducks - meat production flocks - before slaughter - at farm - animal sample - faeces - Surveillance - HACCP and own checks	37	DVI	Flock	37	8	1	1	6
Gallus gallus (fowl) - unspecified - adult - at farm - animal sample - eggs - Surveillance - HACCP and own checks	7	owner	Flock	7	3	3		
Gallus gallus (fowl) - unspecified - adult - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling - objective sampling	1	DVI	Flock	1	0			

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Gallus gallus (fowl) - unspecified - adult - at farm - animal sample - faeces - Monitoring - industry sampling - objective sampling	14	DVI	Flock	10	1	1		
Gallus gallus (fowl) - unspecified - day-old chicks - at farm - animal sample - faeces - Control and eradication programmes - industry sampling - objective sampling	4	RVL	Flock	4	4	3		1
Gallus gallus (fowl) - unspecified - day-old chicks - at farm - animal sample - organ/tissue - Surveillance - HACCP and own checks	1	RVL	Flock	1	1			1
Gallus gallus (fowl) - unspecified - during rearing period - at farm - animal sample - faeces - Monitoring - industry sampling - objective sampling	6	DVI	Flock	6	6	1		5
Gallus gallus (fowl) - unspecified - during rearing period - at farm - animal sample - organ/tissue - Surveillance - HACCP and own checks	1	RVL	Flock	1	1	1		
Gallus gallus (fowl) - unspecified - during rearing period - at farm - animal sample - organ/tissue - Surveillance - official controls - selective sampling	3	RVL	Flock	3	1	1		
Geese - breeding flocks, unspecified - adult - at farm - animal sample - faeces - Surveillance - HACCP and own checks	48	DVI	Flock	45	2	1		1
Geese - breeding flocks, unspecified - adult - at farm - environmental sample - boot swabs - Monitoring - industry sampling - objective sampling	26	DVI	Flock	15	1			1

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Geese - meat production flocks - before slaughter - at farm - animal sample - faeces - Surveillance - official controls - objective sampling	20	RVL	Flock	5	3		2	1
Geese - meat production flocks - during rearing period - at farm - environmental sample - boot swabs - Surveillance - official controls - objective sampling	82	DVI	Flock	82	10	2	3	5
Turkeys - breeding flocks, unspecified - adult - at farm - environmental sample - boot swabs - Monitoring - industry sampling - objective sampling	39	owner	Flock	39	13			13
Turkeys - meat production flocks - before slaughter - at farm - animal sample - faeces - Control and eradication programmes - industry sampling - census sampling	121	DVI	Flock	50	3			3
Turkeys - meat production flocks - before slaughter - at farm - animal sample - faeces - Control and eradication programmes - industry sampling - objective sampling	24	RVL	Flock	10	1	1		
Turkeys - meat production flocks - before slaughter - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling - objective sampling	53	RVL	Flock	53	3			3
Turkeys - meat production flocks - before slaughter - at farm - animal sample - faeces - Control and eradication programmes - official sampling - census sampling	50	RVL	Flock	50	9		9	
Turkeys - meat production flocks - before slaughter - at farm - animal sample - faeces - Surveillance - HACCP and own checks	52	DVI	Flock	52	7			7

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Turkeys - meat production flocks - before slaughter - at farm - animal sample - faeces - Surveillance - official controls - objective sampling	121	DVI	Flock	50	3			3
Turkeys - meat production flocks - during rearing period - at farm - environmental sample - boot swabs - Surveillance - official controls - objective sampling	925	DVI	Flock	884	127	9	27	91

Comments:

[1)] feaces/ industry sampling- objective
[2)] feaces-industry sampling-census
[3)] Feaces/ industry sampling-objective

Footnote:

Laying hens:
2002 - number of all flocks(in rearing and production period)under the programme
1755- number of flocks in production programme under the programme

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Cattle (bovine animals) - adult cattle over 2 years [1)]	NRL	Animal	130	0			

Comments:

[1)] research - at slaughterhouse

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Derby	S. Goldcoast	S. Manhattan
Ostriches	RVL	Animal	20	0						
Pheasants [1)]	RVL	Animal	4	1			1	1		
Pigeons	DVI	Animal	170	15		15				
Quails [2)]	DVI	Flock	6	1			1			1
Ostriches - farmed - at farm - animal sample - blood - Control and eradication programmes - industry sampling - census sampling	RVL	Flock	1	0						
Ostriches - farmed - at farm - animal sample - faeces - Control and eradication programmes - industry sampling - census sampling [3)]	DVI	Flock	20	1			1		1	
Ostriches - farmed - at farm - animal sample - faeces - Control and eradication programmes - industry sampling - objective sampling	DVI	Flock	5	1	1					
Ostriches - farmed - at farm - animal sample - faeces - Control and eradication programmes - official and industry sampling - objective sampling	DVI	Flock	34	0						
Pheasants - meat production flocks - at game handling establishment - Surveillance - official controls - objective sampling	RVL	Animal	7	0						

Comments:

[1)] S. Derby
[2)] S. Manhattan
[3)] S. Goldcoast

2.1.5 Salmonella in feedingstuffs

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Compound feedingstuffs for cattle - final product	DVI	Batch	500g	74	3			3
Compound feedingstuffs for cattle - process control	DVI	Batch	500g	186	6	1		5
Compound feedingstuffs for pigs - final product	DVI	Batch	500g	577	6			6
Compound feedingstuffs for poultry (non specified) - final product	DVI	Batch	500g	39	0			
Compound feedingstuffs for poultry (non specified) - process control	DVI	Batch	500g	27	0			
Compound feedingstuffs for poultry - laying hens - final product	DVI	Batch	500g	232	4			4
Compound feedingstuffs for poultry - laying hens - process control	DVI	Batch	275	4	2			2
Compound feedingstuffs for poultry -breeders - final product	DVI	Batch	500g	164	1			1
Compound feedingstuffs for poultry -breeders - process control	DVI	Batch	500g	92	2			2
Compound feedingstuffs for poultry - broilers - final product	DVI	Batch	500g	314	7	1		6
Compound feedingstuffs for poultry - broilers - process control	DVI	Batch	500g	296	0			
Pet food - dog snacks (pig ears, chewing bones)	DVI	Batch	500g	65	3			3

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Compound feedingstuffs for fish - in total - Monitoring	DVI	Batch	500g	7	0			
Compound feedingstuffs for fur animal - in total - Monitoring	DVI	Batch	500g	74	1			1
Compound feedingstuffs for horses - in total - Monitoring	DVI	Batch	500g	1	0			
Compound feedingstuffs for poultry - pigeons - in total - Monitoring	DVI	Batch	500g	1	0			
Pet food - in total - Surveillance	DVI	Batch	500g	112	2			2

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of cereal grain origin - barley derived	DVI	Batch	500g	44	1			1
Feed material of cereal grain origin - maize	DVI	Batch	500g	35	0			
Feed material of cereal grain origin - maize - derived	DVI	Batch	500g	17	0			
Feed material of cereal grain origin - other cereal grain derived	DVI	Batch	500g	105	0			
Feed material of cereal grain origin - wheat derived	DVI	Batch	500g	129	2			2
Feed material of oil seed or fruit origin - cotton seed derived	DVI	Batch	25g	8	0			
Feed material of oil seed or fruit origin - groundnut derived	DVI	Batch	500g	44	0			
Feed material of oil seed or fruit origin - linseed derived	DVI	Batch	25g	2	0			
Feed material of oil seed or fruit origin - rape seed derived	DVI	Batch	500g	183	8			8
Feed material of oil seed or fruit origin - soya (bean) derived	DVI	Batch	500g	550	22			22
Feed material of oil seed or fruit origin - sunflower seed derived	DVI	Batch	500g	146	0			
Other feed material - forages and roughages	DVI	Batch	500g	3	0			
Other feed material - legume seeds and similar products	DVI	Batch	500g	38	3			3
Other feed material - other seeds and fruits	DVI	Batch	500g	12	0			

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Other feed material - tubers, roots and similar products	DVI	Batch	500g	4	0			

Table Salmonella in feed material of animal origin

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of land animal origin - animal fat	RVL	Batch	25g	7	0			
Feed material of land animal origin - blood meal	DVI	Batch	500g	3	0			
Feed material of land animal origin - dairy products	DVI	Batch	500g	12	0			
Feed material of land animal origin - feather meal	RVL	Batch	500g	63	0			
Feed material of land animal origin - meat and bone meal	DVI	Batch	500g	137	2			2
Feed material of land animal origin - meat meal	DVI	Batch	500g	22	2			2
Feed material of marine animal origin - fish meal	DVI	Batch	500g	682	5	1		4
Feed material of marine animal origin - fish oil	DVI	Batch	500g	1	0			
Feed material of marine animal origin - other fish products	RVL	Batch	500g	47	0			
Feed material of marine animal origin - in total - Monitoring (Crustacea)	RVL	Batch	500g	17	0			
Other feed material - in total - Monitoring (haemoglobin)	DVI	Batch	500g	50	0			

2.1.6 Salmonella serovars and phagetype distribution

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

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Other animals - unspecified - in total - Monitoring	
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory	0	15	0	53	738	471	0	0		
Number of isolates serotyped	0	6	0	14	714	73	0	0	0	26
Number of isolates per serovar										
Other serotypes					1					
S. Agona					2					5
S. Anatum					10	11				
S. Berta					1					
S. Blockley										1
S. Braenderup					1					

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Other animals - unspecified - in total - Monitoring	
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory	0	15	0	53	738	471	0	0		
Number of isolates serotyped	0	6	0	14	714	73	0	0	0	26
Number of isolates per serovar										
S. Choleraesuis				7						
S. Enteritidis		1		1	381	29				2
S. Goldcoast					1					
S. Hadar					15	8				3
S. Indiana						3				
S. Infantis				1	79	8				
S. Kentucky					1					
S. Livingstone					1					
S. Mbandaka					70	5				
S. Muenster					2					
S. Newport					27	3				9
S. Oranienburg						1				

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Other animals - unspecified - in total - Monitoring	
Sources of isolates	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Number of isolates in the laboratory	0	15	0	53	738	471	0	0		
Number of isolates serotyped	0	6	0	14	714	73	0	0	0	26
Number of isolates per serovar										
S. Putten					2					
S. Saintpaul										4
S. Senftenberg					9	1				
S. Stanley					1					
S. Tennessee					8	1				
S. Typhimurium		5		5	46					1
S. Virchow					38	1				
S. Worthington					5	2				
S. Zanzibar										1
Salmonella spp.					13					

Footnote:

other serotype= Salmonella 10:eh:-

Salmonella spp= S.spp (rough serotype)

Table Salmonella serovars in food

Serovar	Meat from bovine animals	Meat from pig	Meat from broilers (Gallus gallus)	Meat from other poultry species	Other products of animal origin
Sources of isolates	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
Number of isolates in the laboratory	5	20	87		
Number of isolates serotyped	5	1	1	0	0
Number of isolates per serovar					
S. Dublin	2				
S. Enteritidis			1		
S. Goldcoast		1			
S. London	1				
S. Typhimurium	2				

2.1.7 Antimicrobial resistance in Salmonella isolates

A. Antimicrobial resistance in Salmonella in cattle

Sampling strategy used in monitoring

Frequency of the sampling

No active monitoring has been conducted.
The epidemiological situation in cattle is not well recognized.

Additional information

In 2009 and 2008 no isolate of Salmonella from bovine animal was examined for antimicrobial resistance.

B. Antimicrobial resistance in Salmonella in foodstuff derived from cattle

Sampling strategy used in monitoring

Frequency of the sampling

Strains isolated from food derived from cattle were not tested for antimicrobial resistence separately.

Type of specimen taken

Not specified foodstuffs of animal origin

Laboratory methodology used for identification of the microbial isolates

Dillution method.

Additional information

In 2009 and 2008 no isolate of Salmonella from bovine animal was examined for antimicrobial resistance.

C. Antimicrobial resistance in Salmonella in foodstuff derived from pigs

Sampling strategy used in monitoring

Frequency of the sampling

Strains isolated from food derived from pigs were not tested for antimicrobial resistance separately.

Additional information

In 2009 no isolate of Salmonella from pigs animal was examined for antimicrobial resistance.

D. Antimicrobial resistance in Salmonella in foodstuff derived from poultry

Sampling strategy used in monitoring

Frequency of the sampling

Strains isolated from food derived from poultry were tested for antimicrobial resistance with quantitative and qualitative method.

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

In 2009 no AMR was tested in foodstuff derived from poultry.

Additional information

30 isolates of S.Enteritidis, 10 isolates of S.Typhimurium,26 isolates of S.Infantis, 10 isolates of S. Mbandaka, 11 isolates of S.Virchow and 41 isolates of other Salmonella serovars isolated from food of poultry origin were tested with qualitative and quantitative methods.

E. Antimicrobial resistance in Salmonella in pigs

Sampling strategy used in monitoring

Frequency of the sampling

Within the framweork of baseline study

Methods of sampling (description of sampling techniques)

Quantitative data with dillution method.

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

In 2009 no AMR was examined for Salmonella in pigs.

Additional information

Baseline stydy- Quantitative data shows antimicrobial resistance in S.Enteritidis (6 isolates), S.Typhimurium (91 isolates)and other serotypes (17 isolates).
Qualitative data shows antimicrobial resistance in S.Enteritidis (7 isolates), S.Typhimurium (91 isolates).

F. Antimicrobial resistance in Salmonella in poultry

Sampling strategy used in monitoring

Frequency of the sampling

Isolates were collected from samples taken within control and eradication programme in flocks of Gallus gallus.

Type of specimen taken

Samples were taken in accordance with requirements set out in Community legistation: Regulation 1168/2006 for layers
Regulation 648/2007 for broiler flocks
reg. 1003/2005 for breeding flocks

Methods of sampling (description of sampling techniques)

Methods are described in Regulation 1168/2006 are in accordance with ISO/EN 17025 and 6579/2002. Qualitative data were obtained by using dillusion method.

Procedures for the selection of isolates for antimicrobial testing

Isolates are sent by regional veterinary laboratories to the National Reference Laboratory for Salmonella for further analisis.

Laboratory methodology used for identification of the microbial isolates

Dillution method

Laboratory used for detection for resistance

Antimicrobials included in monitoring

tetracycline, amphenicol, ampicillin, cephalosporin, ciprofloxacin, nalidixic acid, sulfonamide, trimethoprim, aminoglocosides

Cut-off values used in testing

Breakpoints recommended by EFSA.

Results of the investigation

S. enteritidis and S. typhimurium are resistance most for: nalidixic acid,ciprofloxacin, ampicillin.

Salmonella like S. Infantis or S. Mbandaka are sensitive for all

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

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. Infantis		S. Mbandaka		S. Virchow	
Isolates out of a monitoring program (yes/no)	yes				yes		yes		yes		yes	
Number of isolates available in the laboratory	181		15		25		56		47		26	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	97	0	8	5	9	0	31	0	11	0	9	0
Fluoroquinolones - Ciprofloxacin	97	35	8	5	9	9	31	11	11	0	9	9
Quinolones - Nalidixic acid	97	33	8	5	9	0	31	9	11	0	9	9
Trimethoprim	97	1	8	0	9	0	31	0	11	1	9	0
Sulfonamides - Sulfonamide	97	5	8	6	9	1	31	7	11	1	9	0
Aminoglycosides - Streptomycin	97	6	8	5	9	0	31	6	11	1	9	2
Aminoglycosides - Gentamicin	97	0	8	0	9	0	31	0	11	2	9	0
Penicillins - Ampicillin	97	17	8	5	9	9	31	1	11	1	9	1
Tetracyclines - Tetracycline	97	6	8	5	9	0	31	7	11	1	9	0
Fully sensitive	97	46	8	2	9	0	31	19	11	7	9	0
Resistant to 1 antimicrobial	97	13	8	1	9	0	31	2	11	2	9	0
Resistant to 2 antimicrobials	97	31	8	0	9	7	31	3	11	1	9	6
Resistant to 3 antimicrobials	97	0	8	0	9	2	31	1	11	0	9	2
Resistant to 4 antimicrobials	97	5	8	0	9	0	31	0	11	0	9	1
Resistant to >4 antimicrobials	97	2	8	5	9	0	31	6	11	1	9	0
Cephalosporins - Cefotaxim	97	0	8	0	9	0	31	0	11	0	9	0
Cephalosporins - Ceftazidim	97	0	8	0	9	0	31	0	11	0	9	0

Footnote:
Salmonella spp= S. Newport

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

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.		S. Infantis	
Isolates out of a monitoring program (yes/no)	yes		yes		yes		yes	
Number of isolates available in the laboratory	127		24		12		15	
Antimicrobials:	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	109	0	19	13	12	0	11	0
Fluoroquinolones - Ciprofloxacin	109	26	19	16	12	0	11	1
Quinolones - Nalidixic acid	109	26	19	16	12	0	11	1
Trimethoprim	109	0	19	0	12	0	11	1
Sulfonamides - Sulfonamide	109	4	19	14	12	0	11	0
Aminoglycosides - Streptomycin	109	2	19	15	12	0	11	1
Aminoglycosides - Gentamicin	109	1	19	0	12	0	11	0
Penicillins - Ampicillin	109	8	19	13	12	0	11	0
Tetracyclines - Tetracycline	109	2	19	13	12	0	11	0
Fully sensitive	109	74	19	2	12	12	11	7
Resistant to 1 antimicrobial	109	9	19	1	12	0	11	2
Resistant to 2 antimicrobials	109	22	19	2	12	0	11	2
Resistant to 3 antimicrobials	109	2	19	0	12	0	11	0
Resistant to 4 antimicrobials	109	1	19	1	12	0	11	0
Resistant to >4 antimicrobials	109	1	19	13	12	0	11	0
Cephalosporins - Cefotaxim	109	0	19	0	12	0	11	0
Cephalosporins - Ceftazidim	109	0	19	0	12	0	11	0

Footnote:
salmonella spp. = S. Mbandaka

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

Salmonella	Salmonella spp.		S. Enteritidis		S. Infantis		S. Mbandaka		S. Newport		S. Typhimurium		S. Virchow	
Isolates out of a monitoring program (yes/no)	yes		yes		yes		yes		yes		yes			
Number of isolates available in the laboratory			181		56		47		25		15		26	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol			97	0										
Fluoroquinolones - Ciprofloxacin			97	35	31	11	11	0	9	9	8	5	9	9
Quinolones - Nalidixic acid			97	33	31	9	11	0	9	0	8	5	9	9
Trimethoprim			97	1	31	0	11	1	9	0	8	0	9	0
Sulfonamides - Sulfonamide			97	5	31	7	11	1	9	1	8	6	9	0
Aminoglycosides - Streptomycin			97	6	31	6			9	0	8	5	9	2
Aminoglycosides - Gentamicin			97	0	31	0	11	2	9	0	8	0	9	0
Penicillins - Ampicillin			97	17	31	1	11	1	9	0	8	5	9	1
Tetracyclines - Tetracycline			97	6	31	7	11	1	9	0	8	5	9	0
Fully sensitive			97	46	31	19	11	7	9	0	8	2	9	0
Resistant to 1 antimicrobial			97	13	31	2	11	2	9	0	8	1	9	0
Resistant to 2 antimicrobials			97	31	31	3	11	1	9	7	8	0	9	6
Resistant to 3 antimicrobials			97	0	31	1	11	0	9	2	8	0	9	2
Resistant to 4 antimicrobials			97	5	31	0	11	0	9	0	8	0	9	1
Resistant to >4 antimicrobials			97	2	31	6	11	1	9	0	8	5	9	0
Cephalosporins - Cefotaxim			97	0	31	0	11	0	9	0	8	0	9	0
Cephalosporins - Ceftazidim			97	0	31	0	11	0	9	0	8	0	8	0

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

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

S. Enteritidis	Gallus gallus (fowl) - laying hens - at farm - animal sample - Control and eradication programmes - official and industry sampling																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	127																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	109	0									19	78	12									2	64
Amphenicols - Florfenicol	16	109	0									42	64	3									2	64
Tetracyclines - Tetracycline	8	109	2								88	19					1	1					1	64
Fluoroquinolones - Ciprofloxacin	0.06	109	26	1	30	52		3	17	4	1			1									0008	8
Quinolones - Nalidixic acid	16	109	26										82	1		1	1	24					4	64
Sulfonamides - Sulfonamide	256	109	4											1		19	68	15	2			4	8	1024
Aminoglycosides - Streptomycin	32	109	2									7	84	13	3		1	1					2	128
Aminoglycosides - Gentamicin	4	109	1						38	56	14					1							025	32
Penicillins - Ampicillin	4	109	8							38	60	2	1				8						0.5	32
Cephalosporins - Cefotaxim	0.5	109	0				78	29	2														0.06	4

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

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

S. Typhimurium	Gallus gallus (fowl) - laying hens - at farm - animal sample - Control and eradication programmes - official and industry sampling																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	24																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	19	13									3	3					13						2	64
Amphenicols - Florfenicol	16	19	10									3	3		3	9	1							2	64
Tetracyclines - Tetracycline	8	19	13								6				3	9	1							1	64
Fluoroquinolones - Ciprofloxacin	0.06	19	16		3			1	15															0.008	8
Quinolones - Nalidixic acid	16	19	16										3					16						4	64
Trimethoprim	2	19	0							19														0.5	32
Sulfonamides - Sulfonamide	256	19	14													4	1					14		8	1024
Aminoglycosides - Streptomycin	32	19	15												1	3	3	10	2					2	128
Aminoglycosides - Gentamicin	2	19	0						5	1	11	2												0.25	32

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

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

S. Enteritidis	Gallus gallus (fowl) - broilers - at farm - animal sample - Control and eradication programmes - official and industry sampling																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	181																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	97	0									7	78	12									2	64
Amphenicols - Florfenicol	2	97	0									21	72	4									2	64
Tetracyclines - Tetracycline	8	97	6								70	21				1	3	2					1	64
Fluoroquinolones - Ciprofloxacin	0.06	97	35		23	38	1	3	22	7	2	1											0.008	8
Quinolones - Nalidixic acid	16	97	33										61	3		1	1	31					4	64
Trimethoprim		97	1							93	3						1						0.5	32
Sulfonamides - Sulfonamide	256	97	5											1		10	51	30				5	8	1024
Aminoglycosides - Streptomycin	32	97	6									15	61	14		1	2	4					2	128
Aminoglycosides - Gentamicin	4	97	0						25	58	13	1											0.25	32
Penicillins - Ampicillin	4	97	17							19	56	5					17						0.5	32
Cephalosporins - Cefotaxim	0.5	97	0				62	30	4	1													0.06	4

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

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

S. Typhimurium	Gallus gallus (fowl) - broilers - at farm - animal sample - Control and eradication programmes - official and industry sampling																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	15																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	8	5										3					5						2	64
Amphenicols - Florfenicol	16	8	4									1	2		1	3	1							2	64
Tetracyclines - Tetracycline	8	8	5								3				1	2	2							1	64
Fluoroquinolones - Ciprofloxacin	0.06	8	5		1	2			5															0.008	8
Quinolones - Nalidixic acid	16	8	5										3					5						4	64
Trimethoprim	2	8	0							8														0.8	32
Sulfonamides - Sulfonamide	256	8	6											1			1				1	5		8	1024
Aminoglycosides - Streptomycin	32	8	5												2	1		4	1					2	128
Aminoglycosides - Gentamicin	2	8	0						1	2	4	1												0.25	32
Penicillins - Ampicillin	4	8	5							3							5							0.5	32
Cephalosporins - Cefotaxim	0.5	8	0				5	3																0.06	4

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

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

S. Enteritidis	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Control and eradication programmes - official and industry sampling																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	73																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	20	0									3	13	4									2	64
Amphenicols - Florfenicol	2	20	0									10	10										2	64
Tetracyclines - Tetracycline	8	20	0								15	5											1	64
Fluoroquinolones - Ciprofloxacin	0.06	20	5		7	8			4	1													0.008	8
Quinolones - Nalidixic acid	16	20	5										15					5					4	64
Trimethoprim	2	20	0							19	1												0.5	32
Sulfonamides - Sulfonamide	256	20	2													5	7	4	2			2	8	1024
Aminoglycosides - Streptomycin	32	20	0									2	16	2									2	128
Aminoglycosides - Gentamicin	2	20	0						12	7	1												0.25	32
Penicillins - Ampicillin	4	20	1							4	14	1					1						0.5	32
Cephalosporins - Cefotaxim	0.5	20	1				15	4						1									0.06	4

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

Test Method Used	Standard methods used for testing
Broth dilution	ISO 20776

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

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing

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

2.2 CAMPYLOBACTERIOSIS

2.2.1 General evaluation of the national situation

A. Thermophilic Campylobacter general evaluation

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

In 2008, there was baseline survey of prevalence of Campylobacter spp. in broiler flocks and Campylobacter spp. in broiler carcasses.
This baseline survey was conducted according to Commision Decision 2007/516/EC. The survey was shown that the prevalence of Campylobacter spp. is quite big. Generally, in Poland 79% of the positive samples were found. Most of the isolates were C. jejuni.
In addition the Campylobacter spp. was affirmed in fresh broiler meat (6 cases), meat preparation from broiler meat intended to be eaten cooked in 5 cases and also in fresh turkey meat in 16 cases.

Recent actions taken to control the zoonoses

The present system of communicable diseases epidemiological surveillance in Poland is in line with the Act on infectious diseases and infections (Journal of Laws of 2001 No.125, item 1384, as amended). This system complies with the Community Network on communicable diseases, based on the Decision 2119/98/EC of the European Parliament and of the Council. Cooperation between authorities employed to take action in cases of outbreaks among human population in Poland, was specified in the Ordinance of the Minister of Health on the cooperation between the State Sanitary Inspectorate, Veterinary Inspectorate and State Environmental Protection Inspectorate regarding control of infectious diseases of 7 April 2006 (Journal of Laws of 2006 No 73, item 516) and Ordinance of the Council of Ministers on the cooperation between the Veterinary Inspectorate, State Sanitary Inspectorate, State Pharmaceutical Inspectorate, Trade Inspectorate, Road Transport Inspectorate, Inspection of marketing Quality of Agricultural and Food Products and local administration units in control of infectious animal diseases, including zoonotic diseases of 23 April 2006 (Journal of Laws of 2006 No 83, item 575)
In accordance with above mentioned acts, District Sanitary Inspector informs District Veterinary Inspector of campylobacter foodborne outbreak associated with the consumption of poultry meat. Then District Veterinary Inspector carries out the epidemiological investigation.

2.2.2 Campylobacteriosis in humans

A. Thermophilic Campylobacter in humans

Reporting system in place for the human cases

Information was direct to ECDC.

2.2.3 Campylobacter in foodstuffs

A. Thermophilic Campylobacter in Broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

In 2008 was conducted baseline survey carried out according to Commission Decision No. 2007/516/EC. Sample collection in broiler slaughterhouses was specified by weeks of the study period in 2008 in the Timetables according to General Veterinary Officer Guidelines. Samples were collected by official veterinarians and reffered to designated laboratories.

F.b.o in HACCP definy how much samples takes for Campylobacter and Veterinary Inspection examined 10% of f.b.o samples to verification them.

Frequency of the sampling

At slaughterhouse and cutting plant

Other: it is definy in HACCP

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

In baseline survey of prevalence of Campylobacter spp. in broiler flocks as well as Campylobacter spp. in broiler carcasses obtained in carcasses 332 total units for thermophilic Campylobacter spp. Therein was 203 positive findings of C.jejuni and 129 positive results of C.coli.
In addition in fresh broiler meat received 6 positive results for C. jejuni and unspecified Campylobacter from 118 tested units.
Also 5 positive results of unspecified Campylobacter was found in meat preparation from broiler maet intended to be eaten cooked.

In 2009, the number of positive samples was smaller than during baseline study.

Table Campylobacter in poultry meat

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus) - fresh - at slaughterhouse	DVI	Batch	100cm2	13	0					
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant	RVL	Batch	25g	7	0					
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at processing plant	DVI	Batch	25g	29	4	1	2			1
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at retail	NRL	Single	10g	143	128	80	48	0	0	0
Meat from geese - at slaughterhouse	slaughterhouse	Single	1g	1	0					
Meat from turkey - fresh - at slaughterhouse	RVL	Batch	25g	29	26					26
Meat from turkey - meat products - raw but intended to be eaten cooked - at processing plant	processing plant	Batch	25g	16	0					
Meat from broilers (Gallus gallus) - fresh - at slaughterhouse - animal sample - faeces - Surveillance - HACCP and own checks	DVI	Batch	1g	5	1		1			

Table Campylobacter in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Meat from bovine animals - fresh - at slaughterhouse [1)]	CRL	Single	100 cm2	2	0					
Meat from pig - meat products - unspecified, ready-to-eat - at processing plant - domestic production - Surveillance - HACCP and own checks	Laboratory of Hygiene Food	Batch	25 g	15	0					

Comments:

[1)] carcass swabs/ official control-objective sampling

2.2.4 Campylobacter in animals

A. Thermophilic Campylobacter in Gallus gallus

Monitoring system

Sampling strategy

From 2008 was introduced baseline survey carried out according to Commission Decision No. 2007/516/EC.

Sample collection in broiler slaughter houses was specified by weeks of the study period in 2008 in the Timetables according to General Veterinary Officer Guidelines. Samples were collected by official veterinarians and reffered to designated laboratories.
Direct culture on a selective medium suitable for Campylobacter spp. was used. The plates were incubated at 41.5 +/- 1C in a micro-aerobic atmosphere for at least 48 +/-2h. Isolation and confirmation of Campylobacter were carried out according to the standart ISO method. The Campylobacter spp. isolates were speciated using a molecular method based on the PCR technique.

In 2009 there was no programme or survey at broilers farm. Information concernig to cattle origin from NRL, which carried out some reaserch.

Methods of sampling (description of sampling techniques)

Before slaughter at farm

2008 - The baseline survey for the presence of Campylobacter spp. in broiler flocks comprised of 420 samples taken from 420 flocks originating from 363 holdings.

At slaughter

2008- The survey for the presence of Campylobacter spp. in broiler carcasses covered 420 samples obtained from 157 slaughterhouses. The sampling based on a random selection, both regarding slaughter houses, sampling days each month and which batches were sampled on selected sampling day.
For bacteriological examination the intact caeca from 10 birds were taken at the time of evisceration, pooled and transported to the laboratory within 24 h.

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

Generally, in Poland 79% of the positive samples were found in broiler flocks. The highest number of positive holdings was detected in the following voivodeships: warminsko-mazurskie (100%), pomorskie (95%) and zachodniopomorskie (91%),whereas the lowest number of positive samples were detected in dolnoslaskie (50%), lubuskie (67%) and mazowieckie (71%)voivodeships.
In case slaughterhouses, the highest number of positive samples was found in pomorskie (96%), zachodniopomorskie (92%) and podkarpackie voivodeships, whereas the lowest number of positive samples was detected in dolnoslaskie (30%), podlaskie (67%) and opolskie (70%) voivodeships.
Seasonality of Campylobacter in broiler flocks was observed, although there was no statistically significant differences in the respective months sampled. Most of the izolates were C.jejuni.

Table Campylobacter in animals

	Source of information	Sampling unit	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Cattle (bovine animals) - calves (under 1 year)	NRL	Animal	130	40	13	27	0	0	0

2.2.5 Antimicrobial resistance in Campylobacter isolates

A. Antimicrobial resistance in Campylobacter jejuni and coli in cattle

Additional information

There was no antimicrobial susceptibility testing of Campylobacter spp. in cattle.

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

Additional information

There was no antimicrobial susceptibility testing of Campylobacter in meat from bovine.

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

Additional information

There was no antomicrobial susceptibility testing of Campylobacter in foodstuff derived from pigs.

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

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

In 2009, AMR in meat from broilers was tested. C. coli and C. jejuni are the most resistance for ciprofloxacine and streptomycin.

Additional information

In 2008 - there was no antimicrobial resistence tested in foodstuff derived from poultry.

E. Antimicrobial resistance in Campylobacter jejuni and coli in pigs

Additional information

There was no antimicrobial resistance in Campylobacter jejuni in pigs tested.

F. Antimicrobial resistance in Campylobacter jejuni and coli in poultry

Sampling strategy used in monitoring

Type of specimen taken

2008- Samples were taken from broiler in accordance with Commission Decision 2007/516/EC.

Methods of sampling (description of sampling techniques)

Methods were described in Commisssion Decision 2007/516.

Laboratory methodology used for identification of the microbial isolates

2008- Bacteriological analyses of the broiler carcasses for the presence and number of Campylobacter spp. were carried out according to the standart ISO method. The Campylobacter spp. isolates were speciated using a molecular method based on the PCR technique.
Eight speciated Campylobacter isolates were also sent to the Community Reference Laboratory dor Campylobacter for confirmation of the results obtained in NRL and speciation.

Additional information

In 2009 AMR was not tested.

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

Campylobacter	Campylobacter spp., unspecified		C. coli		C. jejuni	
Isolates out of a monitoring program (yes/no)			yes		yes	
Number of isolates available in the laboratory			100		100	
Antimicrobials:	N	n	N	n	N	n
Fluoroquinolones - Ciprofloxacin			48	36	52	41
Aminoglycosides - Gentamicin			48	3	52	0
Macrolides - Erythromycin			48	1	52	0
Tetracyclines - Tetracycline			48	22	52	27
Fully sensitive			48	8	52	9
Resistant to 1 antimicrobial			48	4	52	2
Resistant to 2 antimicrobials			48	12	52	15
Resistant to 3 antimicrobials			48	9	52	19
Resistant to 4 antimicrobials			48	10	52	7
Resistant to >4 antimicrobials			48	5	52	0

Table Antimicrobial susceptibility testing of C. coli in Meat from broilers (Gallus gallus) - in total - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

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

C. coli	Meat from broilers (Gallus gallus) - in total - Control and eradication programmes - official and industry sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	100																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Tetracyclines - Tetracycline	2	27	1						10	12	4				1										
Fluoroquinolones - Ciprofloxacin	1	48	36				6	4	2				3	33											
Aminoglycosides - Streptomycin	4	26	0								4	20	2												
Aminoglycosides - Gentamicin	2	45	0						1	35	9														

Footnote:

There was no control and eradication programme, only monitoring !!!

Table Antimicrobial susceptibility testing of C. jejuni in Meat from broilers (Gallus gallus) - in total - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

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

C. jejuni	Meat from broilers (Gallus gallus) - in total - Control and eradication programmes - official and industry sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	100																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Tetracyclines - Tetracycline	2	29	4						17	4	3	1	4												
Fluoroquinolones - Ciprofloxacin	1	14	3				6		5				3												
Aminoglycosides - Streptomycin	2	43	8								30	5		8											
Aminoglycosides - Gentamicin	1	52	0					7	29	16															

Footnote:

There was no control and eradication programme, only monitoring !!!!

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

Test Method Used	Standard methods used for testing
Broth dilution	EUCAST, CRL-AR

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

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

Test Method Used	Standard methods used for testing
Broth dilution	EUCAST, CRL-AR

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

Footnote:

Value in tables are for C.jejuni.

Whereas for C.coli breakpoint are: gentamicin -2; streptomycin -4

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

Test Method Used	Standard methods used for testing

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

2.3 LISTERIOSIS

2.3.1 General evaluation of the national situation

A. Listeriosis general evaluation

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

Listeriosis is obligatory registrated disease, according to the Act from 11 March 2004 on animal health protection and control of animal diseases.
There is no monitoring programme for Listeria spp. realized in Poland. In 2008 the samplings were carried out as a part of the official controls and at the initiative of the operators mostly in food. Positive samples were detected in various categories of meat, and dairy products.
In 2008 Listeria monocytogenes was tested in milk and dairy products and also in other food.
6206 samples of milk and dairy products were tested, and L. monocytogenes was found in 275 samples. Most of Listeria was detected in cheeses made from sheep pasteurised milk (100 cases).
Besides in other food L.monocytogenes was detected in 1234 samples from 18 314 tested. Most contamination were meat products from broiler meat cooked and ready-to-eat (18,5%) as well as meat products from pig cooked and ready-to-eat (7,78%). In meat from bovines and products thereof, Listeria was found only in 8 samples from 282 tested.
In 2009, has been tested 2418 samples of milk and dairy products, and only 29 samples were positive. So prevalence of Listeria in this products took away 1,2%. Besides, from poducts from other food 160 289 samples were tested. Animals are very rare examined for Listeria. In 2009 was confirmed only 1 cases in fallow deer.

Additional information

In addition in 2009 Listeria was tested in:
- flavouring- processing plant- official sampling- 25g - 8 tested units, there was no positive results,

2.3.2 Listeriosis in humans

A. Listeriosis in humans

Reporting system in place for the human cases

Information was direct to ECDC.

2.3.3 Listeria in foodstuffs

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Crustaceans - unspecified - cooked - at processing plant	RVL	Batch	25g	10	0	5	0	5	0	0
Fish - smoked - at processing plant	RVL	Batch	25g	522	66	368	21	154	45	0
Meat from bovine animals - fresh [1)]	RVL	Batch	25g	694	1	4	1	690	0	0
Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant [2)]	RLV	Batch	25g	245	6	233	1	12	5	0
Meat from broilers (Gallus gallus) - fresh [3)]	RVL	Batch	25g	440	30	420	11	21	19	0
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant	RVL	Batch	25 g	1592	20	1118	16	533	2	2
Meat from pig - fresh	RVL	Batch	25g	384	28	304	18	80	10	0
Meat from pig - meat products - cooked, ready-to-eat - at processing plant [4)]	RVL	Batch	25g	7011	675	5228	58	1783	617	0
Meat from pig - meat products - cooked, ready-to-eat - at retail [5)]	RVL	Single	25g	25	10	25	10	0	0	0
Molluscan shellfish - cooked - at processing plant	RVL	Batch	25g	2	0	2	0	0	0	0
Fish - smoked - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	70	5	51	1	19	4	0

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Meat from bovine animals - carcass - chilled - at slaughterhouse - animal sample - carcass swabs - Surveillance - official controls - objective sampling	RVL	Batch								
Meat from bovine animals - meat products - raw and intended to be eaten raw - at processing plant - domestic production - Surveillance - HACCP and own checks (raw-ready to eat)	RVL	Batch	25g	40	5	40	5	0	0	0
Meat from bovine animals - meat products - raw and intended to be eaten raw - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	5	0	5	0	0	0	0
Meat from broilers (Gallus gallus) - fresh - with skin - at cutting plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25 g	10	0	10	0	0	0	0
Meat from pig - carcass - at slaughterhouse - animal sample - carcass swabs - Surveillance - HACCP and own checks	RVL	Batch	400cm2	49	2	24	2	25	0	0
Meat from pig - fresh - chilled - at cutting plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	22	0	22	0	0	0	0
Meat from pig - fresh - chilled - at slaughterhouse - animal sample - carcass swabs - Surveillance - official controls - objective sampling	RVL	Batch	400 cm2	360	0	220	0	140	0	0
Meat from pig - meat products - at processing plant - domestic production - Surveillance - HACCP and own checks (raw- ready to eat)	RVL	Batch	25g	707	36	696	25	11	0	11
Meat from pig - meat products - cooked, ready-to-eat - at packing centre - Surveillance - HACCP and own checks	industry	Batch	25g	109	0	109	0	0	0	0

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Meat from pig - meat products - cooked, ready-to-eat - at packing centre - Surveillance - official controls - objective sampling	RVL	Batch	25g	914	1	836	1	78	0	0
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	1511	9	763	9	748	0	0
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - official controls - selective sampling	RVL	Batch	25g	334	1	334	1	0	0	0
Meat from pig - meat products - cooked, ready-to-eat - at retail - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	158	0	101	0	57	0	0
Meat from pig - meat products - unspecified, ready-to-eat - at processing plant - domestic production - Surveillance - official controls - objective sampling (raw-ready to eat)	RVL	Batch	25g	75	14	65	14	10	0	0
Meat from turkey - fresh - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25g	21	0	16	0	5	0	0
Meat from turkey - meat products - cooked, ready-to -eat - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25g	996	0	996	0	0	0	0
Meat, mixed meat - meat products - raw and intended to be eaten raw - at processing plant - domestic production - Surveillance - HACCP and own checks (bovine-pig meat)	RVL	Batch	200g	218	45	173	0	45	45	0

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Other food - at processing plant - domestic production - Surveillance - HACCP and own checks (delicatessen- ready to eat)	RVL	Batch	25g	330	48	221	12	109	36	0
Other food - at processing plant - domestic production - Surveillance - official controls - objective sampling (delicattesen- ready to eat)	RVL	Batch	25g	370	34	311	0	59	33	1

Comments:

[1)] processing plant
[2)] industry sampling/official
[3)] processing plant/HACCP
[4)] industry sampling
[5)] industry sampling

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant [1)]	RVL	Batch	25 ml	40	0	39	0	1	0	0
Cheeses made from cows' milk - hard - made from pasteurised milk - at retail	retail	Batch	25 ml	3	0	3	0	0	0	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant [2)]	RVL	Batch	200 ml/25ml	862	7	833	0	29	7	0
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant [3)]	processing plant	Single	250 ml	4	0	4	0	0	0	0
Cheeses made from goats' milk - hard - made from pasteurised milk - at processing plant		---								
Dairy products (excluding cheeses) - butter - at processing plant [4)]	processing plant	Single	200 g	20	0	20	0	0	0	0
Dairy products (excluding cheeses) - cream - at processing plant	processing plant	Single	200g	287	19	236	0	51	19	0
Dairy products (excluding cheeses) - cream - at retail	retail	Batch	25 g	2	0	2	0	0	0	0
Milk, cows' - pasteurised milk - at processing plant	RVL	Batch	25ml	89	2	87	0	2	2	0
Milk, cows' - pasteurised milk - at retail	processing plant	Batch	25 ml	1	0	1	0	0	0	0
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - domestic production - Control and eradication programmes - industry sampling - census sampling	processing plant	Batch	25 ml	9	0	9	0	0	0	0

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - domestic production - Monitoring - official sampling - objective sampling	RVL	Batch	25 ml	47	0	47	0	0	0	0
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - domestic production - Surveillance - HACCP and own checks	processing plant	Batch	25 ml	20	0	16	0	19	0	0
Dairy products (excluding cheeses) - butter - made from pasteurised milk - at processing plant - domestic production - Control and eradication programmes - industry sampling - census sampling	RVL	Batch	25 g	2	0	2	0			
Dairy products (excluding cheeses) - butter - made from raw or low heat-treated milk - at processing plant - domestic production - Control and eradication programmes - industry sampling - census sampling	processing plant	Batch	200g	105	0	105	0			
Dairy products (excluding cheeses) - butter - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	200g	282	0	276	0	6	0	0
Dairy products (excluding cheeses) - cream - made from raw or low heat-treated milk - at processing plant - domestic production - Control and eradication programmes - industry sampling - census sampling	processing plant	Batch	25 ml	118	0	118	0			
Dairy products (excluding cheeses) - dairy desserts - chilled - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25 ml	55	0	27	0	28	0	0

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - domestic production - Control and eradication programmes - industry sampling - census sampling	processing plant	Batch	200g	230	0	230	0			
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - domestic production - Surveillance - HACCP and own checks	processing plant	Single	150g	35	0	35	0			
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - domestic production - Surveillance - official controls - selective sampling	RVL	Batch	25 ml	5	0	5	0			
Dairy products (excluding cheeses) - fermented dairy products - at retail - domestic production - Survey - national survey	processing plant	Batch	25 ml	5	0	5	0			
Dairy products (excluding cheeses) - ice-cream - made from raw or low heat-treated milk - at processing plant - domestic production - Control and eradication programmes - industry sampling - census sampling	processing plant	Batch	1000 ml	50	0	50	0			
Dairy products (excluding cheeses) - ice-cream - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	200g	112	1	110	1	2	0	0
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - domestic production - Control and eradication programmes - industry sampling - selective sampling	RVL	Batch	25 g	187	0	187	0			

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Listeria	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - domestic production - Monitoring - industry sampling - objective sampling	processing plant	Batch	25g	17	0	17	0			
Milk, cows' - pasteurised milk - at processing plant - domestic production - Control and eradication programmes - industry sampling - census sampling	processing plant	Batch	25 ml	4	0	4	0			
Milk, cows' - pasteurised milk - at processing plant - domestic production - Monitoring - official sampling - objective sampling	RLV	Batch	25 ml	5	0	5	0			
Milk, cows' - pasteurised milk - at processing plant - domestic production - Surveillance - HACCP and own checks	processing plant	Batch	25 ml	6	0	6	0			
Milk, cows' - pasteurised milk - at processing plant - domestic production - Surveillance - official controls - selective sampling	RVL	Batch	25 ml	76	0	68	0	8	0	0

Comments:

[1)] HACCP or own checks by industry
[2)] HACCP or own checks by industry
[3)] HACCP or own checks by industry
[4)] HACCp or own checks by industry

2.3.4 Listeria in animals

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria	L. monocytogenes	Listeria spp., unspecified
Cattle (bovine animals)	DVI	Animal	3	0		
Goats [1)]	DVI	Animal	1	0		
Sheep	DVI	Animal	1	0		
Deer - farmed - fallow deer - at farm - animal sample - blood - Clinical investigations	RVL	Animal	2	1		1

Comments:

[1)] goat from zoo

2.4 E. COLI INFECTIONS

2.4.1 General evaluation of the national situation

A. Verotoxigenic Escherichia coli infections general evaluation

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

In Poland no active monitoring for the presence of Verocytoxic strains of Escherichia coli in animals was conducted, nor any examinations of a wider spectrum concerning the carrier state, identification and description of threats to human health from pathogenic bacteria producing vero (shiga) toxins.
In 2009 NRL conducted survey in cattle slughterhouse as well as in foodstuff. In bovine meat-fresh 36 cases was positive.
In foodstaff 36 units were positive for VT E.coli.

Laboratory use for analyses method EN ISO166454:2002, which is able to detect only VTEC O157 (both in animals and food).

Additional information

The data concerning Verocytotoxic E. coli were obtained from Regional Veterinary Laboratories. In Poland laboratories carriyng out the examination for pathogenic agents by PCR method. But for serotyping VTEC by seroligical or molecular method. The National Veterinary Research Institute in Pulawy is the reference laboratory in Poland.

In 2008, 4474 samples of fresh meat from turkeys, bovines and pigs, minced meat as well as products from meat were tested. In addition 36 samples of raw cows milk for manufacture were taken.
In those examination only 1 sample was positive. Unspecified VTEC was detected in fresh meat from pigs. Whereas in 2007, only 7 samples were taken from animals (poultry) - all samples were positive. Besides 133 samples were taken from food, most of the samples were taken from minced pig meat (72). 6 samples were positive: 4 from raw pig sausage and 2 from fresh bovine meat.

2.4.2 E. coli infections in humans

A. Verotoxigenic Escherichia coli infections in humans

Reporting system in place for the human cases

Information was direct to ECDC.

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 Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Meat from bovine animals - fresh - at slaughterhouse	NRL/RVL	Batch	400cm2	254	32			32
Meat from bovine animals - fresh - at retail	NRL	Single	25g	162	4			4
Meat from broilers (Gallus gallus) - fresh	RVL	Batch	25g	100	0			
Meat from pig - fresh	RVL	Batch	25g/400cm2	290	0			
Meat from pig - minced meat - intended to be eaten raw	RVL	Single	300g	150	0			
Meat from sheep - fresh - at slaughterhouse	slaughterhouse	Batch	1g	107	0			
Meat from turkey - fresh	RVL	Batch	25g	200	0			
Meat from pig - meat products - at processing plant - domestic production - Surveillance - HACCP and own checks (intendet to eat after heat treated)	processing plant	Batch	1g	70	0			
Meat, mixed meat - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	10g	2620	0			

Footnote:
Laboratory use method EN ISO 16654:2002

2.4.4 Escherichia coli, pathogenic in animals

A. Verotoxigenic Escherichia coli in cattle (bovine animals)

Monitoring system

Sampling strategy

No control examinations are conducted.

Additional information

In 2009, 130 carcasses of dairy cows in slaughterhouse were tested. And 63 positive cases. This survey was conducted by NRL.
In 2008 in slaughterhouse were 229 carcasses of dairy cows tested. Therein was detected 2 positive results of VTEC non O 157.

In Poland laboratories carriyng out the examination for pathogenic agents by PCR method. But for serotyping VTEC by seroligical or molecular method.

Table VT E. coli in animals

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Cattle (bovine animals) - dairy cows - at slaughterhouse	NRL	Animal	400cm2	130	63			63

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

Tuberculosis was identified as a disease subject to obligatory notification in Poland in 1927. Until 1936 tuberculosis was being eradicated with tuberculinisation, on a voluntary basis and without much result. Killed animals were reimbursed. The general and planned eradication of tuberculosis, with the costs borne by the state, was begun in Poland in 1959. The action of eradicating this diseases was started in the least infected Eastern voivodships. At that time the highest infection levels were noted in central and Western voivodships. As a result of the undertaken actions the number of infected cattle fell to 0,5 % and in December 1975, according to international norms in force at that time, Poland was recognized as country free from bovine tuberculosis. In the following years, the screening was conducted every 3 years in individual holdings and twice a year in big state-owned holdings

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

Currently in Poland the control examinations and eradication of bovine tuberculosis are conducted on the basis the Act of 11 March 2004 on protection of animal health and control of infectious animal diseases, the Ordinance of the Minister of Agriculture and Rural Development of 23 November 2004 on the eradication of bovine tuberculosis and the instruction of the Chief Veterinary Officer of 28 July 2006 on the procedures related to the eradication of animal tuberculosis, draftedon the basis of the Council Directive 64/432/EEC.

Since December 2004 the matter of monitoring tests for bovine tuberculosis is regulated by the Ordinance of the Minister of Agriculture and Rural Development of 17 December 2004 defining the disease entities, the control procedure and the scope of monitoring tests for animal infections (Dz. U. No. 282, item 2813, as amended). The Ordinance provides that the monitoring tests for bovine tuberculosis using intradermal tuberculination are carried out every year on 1/3 of the bovine herds in the area of a district in such a way as to examine all herds of cattle in the area of this district in the period of three years. The monitoring tests are carried out on animals older than 6 weeks of age. As compared to the previous regulation, the modification consists in that the tests cover 1/3 of the bovine herds, instead of 1/3 of the bovine population, in each district.

The percentage of infected herds in Poland in the last 9 years (1999 â€“ 2007) has been lower than 0,2 % and was as follows: in 1999 - 0.008 %; in 2000 - 0.015 %; in 2001- 0.007 %; in 2002 - 0.019 %; in 2003 - 0.008 %; in 2004 - 0.047%; in 2005-0.054%, in 2006-0.034%, in 2007 - 0.038% and in 2008- 0,04%.

2.5.2 Tuberculosis, mycobacterial diseases in humans

A. Tuberculosis due to Mycobacterium bovis in humans

Reporting system in place for the human cases

All information was direct to ECDC.

2.5.3 Mycobacterium in animals

A. Mycobacterium bovis in bovine animals

Status as officially free of bovine tuberculosis during the reporting year

Free regions

Poland according to Commission Decision 2009/342/EC is officially free from tuberculosis.

Monitoring system

Sampling strategy

In accordance with the calculations of the Bovine Tuberculosis Control Programme for 2008, samplig should have covered all animals over 6 weeks of age in herds.
In case of bovine tuberculosis intraderm tuberculin tests are performed:
- single tuberculin tests,
- comparative tuberculin tests.

Single and comparative tuberculin tests are performed using interderm injection of bovine and avian tuberculin in accordance with the testing methodology and standards for tuberculin laid down in Annex B to the Council Directive 64/432/EEC.
In addition detailed description of the mode of testing is included in the Ordinance of the Minister of Agriculture and Rural Development of 23 November 2004 on the control of bovine tuberculosis (Dz. U. No. 258, item 2585).

Frequency of the sampling

1x sampling with single tuberculin test of 1/3 of herd in one year period. The monitoring tests are carried out on animals older than 6 weeks of age.

Methods of sampling (description of sampling techniques)

In case of bovine tuberculosis intraderm tuberculin tests are performed:
- single tuberculin tests,
- comparative tuberculin tests.

Single and comparative tuberculin tests are performed using intrederm injection of bovine or bovine and avian tuberculin in accordance with the testing methodology and standards for tuberculin laid down in Annex B to the Council Directive 64/432/EEC.

Case definition

An epidemiological unit is a herd.
Definitions of cases:
A positive case is an animal with a positive result of the comparative tuberculinisation test, in which M. bovis or M. tuberculosis were isolated, or an animal with a positive post mortem examination result confirmed by a laboratory (slaughter, killing, death).

Diagnostic/analytical methods used

The method of conducting official allergic test and the interpretation of the reaction is conducted on the basis of the Instruction of the Chief Veterinary Officer No GIWz. VIII 401/Gr-1/a/2003 of 14 August 2003 replaced by the Instruction of the Chief Veterinary Officer No GIWz.IV.401/TBC-26/2006 of 28 July 2006. Screening for tuberculosis consists in intradermal tests (official tests are performed using PPD bovine and avian purified protein derivative of tuberculin, obtained from growth and analysis products of Mycobacterium bovis AN5 or M. avium D4ER) with the simultaneous clinical examination and additional laboratory examination of samples taken after slaughter or in post mortem examination. The examination consists in microscopic, breeding and biological assay on laboratory animals.

Vaccination policy

The vaccinations against tuberculosis are not used for animals

Control program/mechanisms

The control program/strategies in place

Bovine tuberculosis is controlled since 1927. Currently in Poland runs National Bovine Tuberculosis Control Programme, which is annualy submited for coofinancing purposes in accordance with Decision 90/424.

Recent actions taken to control the zoonoses

Each year implementing and sistematically updating of National Bovine Tuberculosis Control Programme.

Measures in case of the positive findings or single cases

In case of suspicion or detection of bovine tuberculosis the procedure is set out in the Ordinance of the Minister of Agriculture and Rural Development of 23 November 2004 on the control of bovine tuberculosis (Dz. U. No. 258, item 2585).
In case of disease suspicion the District Veterinary Officer takes immediate measures in order to confirm or exclude the disease. This authority performs epizootic investigation, clinical examination of animals, a post-mortem examination or an autopsy, performs a diagnostic test or takes samples for diagnostic tests. The authority puts the herd under supervision and imposes restrictions in the form of a ban on movement of bovine animals to/from a herd, excluding any movement in order carry out immediate slaughter. Animals suspected of a disease are isolated from the rest of the herd. District Veterinary Officer also undertakes other necessary measures to prevent the spread of bovine tuberculosis.
If tuberculosis is detected (pursuant to Article 2 Subparagraph 23 of the Act on animal health protection and eradication of infectious animal diseases and Article 5 of the Ordinance on control of bovine tuberculosis) the District Veterinary Officer notifies the State Sanitary Inspector and the milk purchaser.

The District Veterinary Officer establishes the place of disease outbreak and imposes the ban on bovine animals movement to/from the sick herd (movement with the aim of immediate slaughter is permitted only). Milk of sick animals may be used to feed animals in a given holding only after suitable heat treatment . The District Veterinary Officer shall order marking and isolation of sick animals in a herd until they are killed.
The District Veterinary Officer shall also take other measures in accordance with the provisions of the Ordinance of the Minister of Agriculture and Rural Development on the control of bovine tuberculosis.

The outbreak of the disease shall be deemed eradicated if all sick animals have fallen or been killed, cleaning and disinfection operations have been performed, and the results of two subsequent comparative tuberculin tests on other animals of the herd performed in a determined time are negative. The first test is carried out no earlier than after 60 days, the second one no earlier than in the fourth and no later than in the twelfth month from the day of elimination of the last sick animal from the disease outbreak place.

Notification system in place

Suspicion or confirmation of bovine tuberculosis must be obligatory and immediately notified to the comptenet authority. Detailes are defined in Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases (Dz. U. No. 69, item 625, as amended) and Ordinance of the Minister of Agriculture and Rural Development of 25 November 2005 laying down the scope, procedure and dates of notification of the animal infectious diseases subject to control and registration obligation and on the results of monitoring of zoonoses and zoonotic agents, as well as resistance to antimicrobial agents (Dz. U. No. 242, item 2045

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

The long-term objective for the whole territory of the Republic of Poland is to be recognised officially free from this disease.
In 2008 there was 0.04% of positive herds, which is very slight increase in comparition to 2007. In 2007 there was 0.038% of positive animals.

In 2009, 115 animals in 37 herds were found positive.

Additional information

Tuberculosis eradication programme is co-finansed by Community.

B. Mycobacterium bovis in farmed deer

Monitoring system

Sampling strategy

In Poland no official eradication of tuberculosis in species other than cattle is carried out. All slaughter animals, except poultry, are subject to routine, official post mortem examination including the examination of lymph nods.

Table Tuberculosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Mycobacterium	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified
Pigs [1)]	DVI	Animal	2565	0	0	0	0
Zoo animals, all	DVI	Animal	10	2	0	1	1

Comments:

[1)] sampling stage- tissue/ sampling context -objective sampling

Table Bovine tuberculosis - data on herds - Community co-financed eradication programmes

Region	Total number of herds	Total number of herds under the programme	Number of herds checked	Number of positive herds	Number of new positive herds	Number of herds depopulated	% positive herds depopulated	Indicators		
								% herd coverage	% positive herds Period herd prevalence	% new positive herds Herd Incidence
Region Centralny	726055	246103	199437	37	37	4	10.81	81.04	.02	.02
Total : [1)]	726055	246103	199437	37	37	4	10.81	81.04	.02	.02
Total - 1	789455	249225	204674	52	38	16	30.77	82.12	.03	.02

Comments:

[1)] N.A.

Footnote:

Region "Centralny" suits the whole territory of Poland

Table Bovine tuberculosis - data on animals - Community co-financed eradication programmes

Region	Total number of animals	Number of animals to be tested under the programme	Number of animals tested	Number of animals tested individually	Number of positive animals	Slaughtering		Indicators	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered	% coverage at animal level	% positive animals - animal prevalence
Region Centralny	6169652	2009280	1929605	1827035	119	115	117	96.03	.01
Total : [1)]	6169652	2009280	1929605	1827035	119	115	117	96.03	.01
Total - 1	6080517	1909886	1725263	1725263	185	194	188	90.33	.01

Comments:

[1)] N.A.

Footnote:

Region "Centralny" suits the whole territory of Poland

Table Bovine tuberculosis - data on status of herds at the end of the period - Community co-financed eradication programmes

	Status of herds and animals under the programme													
	Total number of herds and animals under the programme		Unknown		Not free or not officially free				Free or officially free suspended		Free		Officially free	
					Last check positive		Last check negative							
Region	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals
Region Centralny	246103	2009280	0	0	0	0	0	0	37	119	0	0	246066	2009161
Total : [1)]	246103	2009280	0	0	0	0	0	0	37	119	0	0	246066	2009161
Total - 1	249225	1969886	0	0	1	1	1567	25333	28	636	0	0	247629	1943916

Comments:

[1)] N.A.

Footnote:

Region "Centralny" suits the whole territory pf Poland

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 Poland, after the war, the largest percentage of infected farms was observed in Western and Northern regions. Between 1948 and 1956 the tests for brucellosis covered only the nationalized large-scale holdings. Serological reactions were observed in 7.2-22.8% animals.
Between 1956 and 1966, around 350,000 to 1,000,000 cattle were tested annually and brucellosis was detected on average in 2.3% to 5.7% of nationalized holdings and in 0.32-1.7% of individual holdings. At the end of 1966 almost 12% of cattle in nationalized holdings were infected with bovine brucellosis and Brucella was detected bacteriologically in 24.4% of aborted embryos .
Between 1953 and 1956, due to the high percentage of herds where brucellosis was detected, it was decided to conduct vaccinations with S-19 vaccine. The bovine animals in selected state-owned and cooperative holdings were vaccinated. Within that period 266,000 bovine animals were vaccinated. The vaccinations were continued until 1966 when the Veterinary Department prohibited to use them in the regions of Eastern and central Poland. The planned bovine brucellosis control began on those regions in 1969, on the basis of the act of 13 November 1963 on infectious disease control. The infected cattle from individual holdings were slaughtered with the full compensation provided.
Between 1965 and 1967 the serological tests of cattle were conducted in Gdanskie, Lubelskie and Olsztynskie regions and in all districts bordering with Czechoslovakia in order to determine the epizootic situation in individual holdings . The conducted tests indicated that the percentage of cattle with positive reactions did not exceed 0.5%. From 1975 the control of brucellosis was conducted on the basis of the Ordinance of the Minister of Agriculture of 16 April on the obligation to report and control animal brucellosis. Bovine, sheep, goat and swine brucellosis is a compulsorily notifiable disease.
Animals recognized as infected or suspected of being infected, both in individual and in cooperative holdings, were depopulated with the compensation provided. The cattle infected with brucellosis in nationalized holdings were either depopulated or until 1975 transferred to the isolators.
Between 1975 and 1978 the serological tests covered from 5 to 7 million cattle. In total brucellosis was detected in 31,720 cattle which were subsequently slaughtered. It amounted to 0.06% of cattle in the country and 0.5% in nationalized holdings.
In 1978 the territory of the whole country, except for Gorzowskie and Zielonogorskie regions, was declared free of bovine brucellosis.
Only 10% of depopulated cattle came from the territory of 42 regions and 90% from the territory of the following 7 regions: Gorzowskie, Olsztynskie, Poznanskie, Szczecinskie and Zielonogorskie.

In 1980 by decision of the Minister of Agriculture the whole country was declared free of bovine brucellosis. The percentage of infected animals was lower than 0.5% and the percentage of infected holdings amounted to less than 0.2%.
In order to maintain the state achieved in 1980 periodical diagnostic tests and depopulation of animals recognized as infected was introduced as well as the concurrent ban on performing protective vaccinations in the areas covered by the tests.
The tests covered annually one third of bovine population aged over 12 months on the territory of a region.

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

The obligation to test aborted embryos was introduced in accordance with Article 42 (1) of the Act of 11 March 2004 on protection of animal health and control of infectious animal diseases (Journal of Laws of 2004 No 69, item 625).
From 1 May 2004, in relation to the European Union requirements, Poland has tested blood samples in one third of cattle herds on the territory of a district so that within 3 years all cattle herds in the district were tested. On the territory of one of the regions (Opolskie) the collective milk samples coming from the cows from one herd are tested.

For many years Brucella spp. have not been isolated from blood and milk samples.

The percentage of infected herds in particular years (it was assumed that there is one herd in one holding) amounted to, respectively:

0.006 % in 1999; 0.009 % in 2000; 0.005 % in 2001; 0.006 % in 2002; 0.002 % in 2003; 0.004% in 2004; 0.005% in 2005, 0.008% in 2006 and 0.0045% in 2007, 0,0054% in 2008.

On the basis of obtained results of control tests in cattle herds it may be stated that the percentage of infected herds fluctuates between 0.002 and 0.006%.
During the tests of aborted embryos (segments of parenchymatous organs, ligated stomachs, whole embryos) in 2003-2008, no Brucella was isolated.
In 2008, there were 425 notifications of abortions. Every of them was investigated by an official veterinarian. Brucella spp. was not detected.

In 2007, from 220347 herds checked, there were 10 infected herds, out of which 4 herds were new infected. Brucella abortus was not isolated in any case, neither from the 28 animals in which the serological tests confirmed infection, nor from the aborted foetuses.
204 animal were examined microbilogically, none of the result was positive.
No suspected lesions were found in slaughterhouse.

The percentage of officially free herds at the end of the 2008 was 99,99% for herds which were tested in 2008n comparison to 2007, in 2009 number of infected herds increased but it was smaller than in 2006 and 2008.

Recent actions taken to control the zoonoses

Brucellosis eradication programme is currently conducted in Poland on the basis of the act of 11 March 2004 on protection of animal health and control of infectious animal diseases and the Instruction of the Chief Veterinary Officer of 24 July 2006 No GIWz.401/Bru-28/2006 on the procedures for animal brucellosis eradication based on the Directive 64/432 and the Ordinance of the Minister of Agriculture and Rural Development of 20 April 2005 on brucellosis eradication which partly implements the above-mentioned provisions.

Additional information

Additional information concerning other animal species:
If the swine brucellosis is suspected, the animals aged over 4 months are subject to serological tests.
In the case of males of pigs (boars) for reproduction, tests for brucellosis are compulsory during quarantine and each 12 months in the case of boars
Those tests are conducted according to the Directive 90/429 and the Ordinance of the Minister of Agriculture and Rural Development of 27 April 2004 on detailed veterinary requirements applicable to pig semen (Journal of Laws of 2004 No 100, item 1017).

Serological tests of sows for reproduction and the repopulation of herds on commercial pig fattening farms have a voluntary character.
In 2004, 3938 pigs were tested with a negative result.
In 2005,there is lack of data concerning pigs.
In 2006, 4683 pigs were tested with a negative result.
In 2007, 37775 pigs were tested with negative results.
In 2008, 2421 pigs were tested with 6 positive results. All positive animals (boars) originated from Spain.

2.6.2 Brucellosis in humans

A. Brucellosis in humans

Reporting system in place for the human cases

All information was direct to ECDC.

2.6.3 Brucella in animals

A. Brucella abortus in bovine animals

Monitoring system

Sampling strategy

The tests are carried out across the entire territory of the Republic of Poland. The tests are carried out on bovine females and breeding bulls which are over 12 months old.
In 2009, 13 herds were infected.
According to assumptions set out in The National Eradication Programme fo Bovine Brucellosis in 2008 sampling should have covered 2 104 523 animals in 273 381 herds (one third of the total number of herds). Whereas only 1 207 600 animals were tested because of empty herds.

Frequency of the sampling

Each year samples are collected from one third of the bovine herds in the area of a district so as to check all bovine herds within 3 years.

Methods of sampling (description of sampling techniques)

It is allowed to take blood samples for tests and well as bulk milk samples from cows from one holding. Moreover, all aborted foetuses must be examined.

Case definition

Definition of a case:
-an animal in which Brucella spp. antibodies were detected during serological tests or from which Brucella spp. were isolated.
Epidemiological unit:
-the herd is an epidemiological unit.
Definition of cattle:
- bovine animals except for males for fattening.

Diagnostic/analytical methods used

In brucellosis diagnosis the following serological tests are used:
-tube agglutination tests (OA)
-buffered plate agglutination tests
-complement fixation test
-microagglutination test
-ELISA (enzyme-linked immunosorbent assay) with a single serum sample
and ring test or ELISA test for milk samples.
Official tests are performed by the state laboratories controlled by the National Reference Laboratory. They are three-stage tests. At first the screening tests are performed - buffered plate agglutination tests, then the basic tests - tube agglutination and complement fixation tests and subsequently the additional tests as antiglobulin and microaglutination.

Vaccination policy

According to the Annex 4 to Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases (Dz. U. No. 69, item 625, as amended), vaccination of bovine animals is forbidden.

Control program/mechanisms

The control program/strategies in place

At present, the bovine brucellosis eradication programme is implemented in Poland pursuant to the provisions of the Ordinance of the Minister of Agriculture and Rural Development of 17 December 2004 defining disease entities, the control procedure and the scope of monitoring tests for animal infections (Dz. U. No. 282, item 2813, as amended).

Measures in case of the positive findings or single cases

The district veterinary officer, having received the notification on suspected occurrance of brucellosis, immediately undertakes the actions aimed at determining the health status of the herd, whose free of brucellosis status is suspended until the decisive tests are conducted. He/she imposes a ban on transporting animals from and to a given holding, orders the isolation of animals suspected of being infected and notifies the entities which purchase the milk. He/she introduces all the restrictions aimed at preventing the spread of the infection (according to the above-mentioned Ordinance and Instruction). When a positive result is confirmed the district veterinary officer maintains all the bans and orders and notifies the state district sanitary inspector on the occurrence of brucellosis. Seropositive animal is killed and the full compensation is provided.

Notification system in place

According to Annex 2 to the Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases, bovine brucellosis must be obligatory notified after suspicion or confirmation. Detailes concerning notification are set out in Ordinance of the Minister of Agriculture and Rural Development of 25 November 2005 laying down the scope, procedure and dates of notification of about animal infectious diseases subject to control and registration obligation and on the results of the monitoring of zoonoses and zoonotic agents, as well as related resistance to antimicrobial agents (Dz. U. No. 242, item 2045).

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

At present, situation is stable. In 2009, number of infected herd took away 13. the number of positive herds is smaller than in 2008 but we observed slight increased in comparison to 2007. In 2006 12 new positive herds were notified, in 2007 - 9, whereas in 2008-16 infected herds.

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

Additional information

Polish bovine brucellosis eradicaation programme for 2009 did not receive Community co-financing.

B. Brucella melitensis in goats

Status as officially free of caprine brucellosis during the reporting year

The entire country free

Poland is officialy free from B.melitensis, according to Decision 2006/169/EC.

Free regions

Whole teritory of Poland was officialy free from caprine brucellosis during the reporting year.

Monitoring system

Sampling strategy

In order to control caprine brucellosis, at least 10% of caprine animals over 6 month old were subjected to serological tests.

Frequency of the sampling

Annual sampling of 10% of goats.

Methods of sampling (description of sampling techniques)

Blood samples in accordance with Community legislation (Decision 90/242/EEC and Directive 91/68/EEC)

Case definition

An animal is considered positive in case of two-time positive results of blood samples' tests. These tests are carried out by complement fixation test as a confirmation of a prior positive result which was obtained by buffered plate agglutination test.

Diagnostic/analytical methods used

The blood samples are tested by means of a buffered plate agglutination test and confirmed by means of complement fixation test.

Vaccination policy

Vaccination is prohibited, according to annex 4 of The Act of 11 March 2004 on protection of animal health and control of infectious animal diseases (Journal of Laws of 2004 No 69, item 625).

Measures in case of the positive findings or single cases

Proceedings and measures in case of positive findings are described in Act of 11 March 2004 on protection of animal health and control of infectious animal diseases (Journal of Laws of 2004 No 69, item 625).

Notification system in place

According to Annex 2 to the Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases. caprine brucellosis must be obligatory notified after suspicion or confirmation. Detailes concerning notification are set out in Ordinance of the Minister of Agriculture and Rural Development of 25 November 2005 laying down the scope, procedure and dates of notification of about animal infectious diseases subject to control and registration obligation and on the results of the monitoring of zoonoses and zoonotic agents, as well as related resistance to antimicrobial agents (Dz. U. No. 242, item 2045).

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

Whole teritory of Poland is free from caprine brucellosis and for several previous years no positive case of brucellosis in goats was neither suspected nor confirmed.
In 2009 there was no positive results for B. melitensis.

C. Brucella melitensis in sheep

Status as officially free of ovine brucellosis during the reporting year

The entire country free

Poland is officialy free from B.melitensis, according to Decision 2006/169/EC

Free regions

Whole teritory of Poland was officially free from ovine brucellosis during the reporting year.

Monitoring system

Sampling strategy

In order to control ovine brucellosis, at least 10% of ovine animals over 6 month old were subjected to serological tests.

Frequency of the sampling

Annual sampling of 10% of sheeps over 6 month old.

Methods of sampling (description of sampling techniques)

Blood samples taken in accordance with Community legislation (Decision 90/242/EEC and Directive 91/68/EEC)

Case definition

An animal is considered positive in case of two-time positive results of blood samplesâ€™ tests.These tests are carried out by complement fixation test as a confirmation of a prior positive result which was obtained by buffered plate agglutination test.

Diagnostic/analytical methods used

The blood samples are tested by means of a buffered plate agglutination test and confirmed by means of complement fixation test.

Vaccination policy

Vaccination is prohibited according to annex 4 of The Act of 11 March 2004 on protection of animal health and control of infectious animal diseases (Journal of Laws of 2004 No 69, item 625).

Measures in case of the positive findings or single cases

Overall measures to be taken after positive findings are described The Act of 11 March 2004 on protection of animal health and control of infectious animal diseases (Journal of Laws of 2004 No 69, item 625).

Notification system in place

According to Annex 2 to the Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases. caprine brucellosis must be obligatory notified after suspicion or confirmation. Detailes concerning notification are set out in Ordinance of the Minister of Agriculture and Rural Development of 25 November 2005 laying down the scope, procedure and dates of notification of about animal infectious diseases subject to control and registration obligation and on the results of the monitoring of zoonoses and zoonotic agents, as well as related resistance to antimicrobial agents (Dz. U. No. 242, item 2045).

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

Whole teritory of Poland is free from ovine brucellosis and for several previous years no positive case of brucellosis in sheep was neither suspected nor confirmed.

In 2009 there was no positive results for B. melitensis.

Table Brucellosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Brucella	B. abortus	B. melitensis	B. suis	Brucella spp., unspecified
Pigs [1)]	DVI	Animal	1352	3	0	0	0	3
Goats - mixed herds - at farm - animal sample - blood - Control and eradication programmes - official and industry sampling - objective sampling	DVI	Animal	2532	0				
Zoo animals, all - at zoo - Control and eradication programmes - industry sampling - objective sampling	ZOO	Animal	18	0				

Comments:

[1)] blood/ objective sampling

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

Region	Total number of existing		Officially free herds		Infected herds		Surveillance			Investigations of suspect cases				
	Herds	Animals	Number of herds	%	Number of herds	%	Number of herds tested	Number of animals tested	Number of infected herds	Number of animals tested with serological blood tests	Number of animals positive serologically	Number of animals examined microbio logically	Number of animals positive microbio logically	Number of suspended herds
Region Centralny	16181	288069	16181	100	0	0	4688	21195	0	0	0	0	0	0
Total : [1)]	16181	288069	16181	100	0	0	4688	21195	0	0	0	0	0	0

Comments:

[1)] N.A.

Footnote:

Region "centralny" suits the whole territory of Poland

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Surveillance						Investigations of suspect cases								
							Serological tests			Examination of bulk milk			Information about			Epidemiological investigation					
	Herds	Animals	Number of herds	%	Number of herds	%	Number of bovine herds tested	Number of animals tested	Number of infected herds	Number of bovine herds tested	Number of animals or pools tested	Number of infected herds	Number of notified abortions whatever cause	Number of isolations of Brucella infection	Number of abortions due to Brucella abortus	Number of animals tested with serological blood tests	Number of suspended herds	Number of positive animals		Number of animals examined microbio logically	Number of animals positive microbio logically
																		Sero logically	BST		
Region Centralny	726055	6169652	726055	100	13	0	190949	1252809	13	0	0	0	288	0	0	1252809	13	13	0	13	0
Total : [1)]	726055	6169652	726055	100	13	0	190949	1252809	13	0	0	0	288	0	0	1252809	13	13	0	13	0

Comments:

[1)] N.A.

Footnote:

Region "Centralny" suits the whole territory of Poland

2.7 YERSINIOSIS

2.7.1 General evaluation of the national situation

A. Yersinia enterocolitica general evaluation

History of the disease and/or infection in the country

There is no system of registration of cases of yersiniosis in animals, therefore it is not possible to carry out historical analisis of the disease.

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

There was no monitoring programme of Yersinia enterocolitica carried out in Poland. In 2009 no animal was tested for yersinosa.

In 2008 only 15 samples taken from animals were tested. Therein 2 samples from hares and 13 from chinchillas. 3 samples was positive, 2 from hares and 1 from chinchillas. Only sample taken from chinchillas was determined as Yersinia enterocolitica, others were unspecified.

There was significant decreased of positive samples for Yersinia spp. comparing to 2007. In 2007, 16 samples taken from animals were examined and therein 9 samples was positive.

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

In Poland no official control examinations were carried out for detection of Yersinia enterocolitica in the foodstuffs of animal origin.

In 2008 only 6 samples were taken from meat products from pig meat. The Yersinia spp. wasn't found. Whereas in 2007, 5 samples were taken by the operator from bovine meat products and none of them were positive.

2.7.2 Yersiniosis in humans

A. Yersinosis in humans

Reporting system in place for the human cases

Information was direct to ECDC.

2.7.3 Yersinia in foodstuffs

Table Yersinia in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Yersinia	Y. enterocolitica	Y. pseudotuberculosis	Yersinia spp., unspecified	Y. enterocolitica - O:3	Y. enterocolitica - O:9	Y. enterocolitica - Y. enterocolitica, unspecified
Meat from pig - fresh [1)]	District Sanitary Inspectorate	Batch	600 g	1	1	1					1
Meat from pig - meat products [2)]	processing plant	Single	250 g	3	0						

Comments:

[1)] in retail

[2)] industry sampling-selective sampling

2.7.4 Yersinia in animals

A. Yersinia enterocolitica in pigs

Monitoring system

Sampling strategy

Animals at farm

There is no monitoring system in pigs existing for Y.enterocolitica in Poland.

Animals at slaughter (herd based approach)

There is no monitoring system in pigs existing for Y.enterocolitica in Poland.

Control program/mechanisms

The control program/strategies in place

There was no active monitoring of yersiniosis of pigs carried out in Poland in reporting year.

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

In Poland 2 major reservoirs of Trichinella spiralis are pigs and wild boars. Meat derived from these animals is a main source of infection for people. After introducing of obligatory post mortem inspection of pigs, wild boars, horses and coypus for Trchinella spp. number of human trichinellosis decreased considerably.

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

Trichinellosis is an obligatory registrated disease, according to Annex 3 of The Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases (Dz. U. No. 69, item 625, as amended).

Currently, all slaughtered pigs, boars, horses and coypus shall be examined for the evidence of Trichinella spp.

In 2008 the number od positive results of Trichinella spp. increased and carried 524 positive findings from 103 612 carcasses wild boars tested.

In 2007, there was 52 cases of trichinellosis in pigs which means almost twofold increase in comparison to 2006. 235 positive findings of Trichinella spp. in wild boars in 2007 means significantly decrease with comparison to 2006.

In 2006 28 cases of trichinnelosis in pigs and 321 in wild boars was notified.

In 2009 was found for Trichinella only 13 positive result in pigs. It's quite significant decreased the number of trichinellosis in pigs.

However, we observed a high number of trichinellosis in wild boars population. It could results of tested all boars by pooled sample digestion, which is more sensitive.

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

In compared to 2007, in the 2008 the number of Trichinella spp. in pigs increased to 69 positive results. We observed almost twofold increase in number of trichinellosis in pigs in 2007 compared to 2006 had an effect in more than twofold increase in number of trichinellosis in human. In 2007, 292 of human trichinellosis was notified, in 2006 - 132 cases (data from "Reports on cases of infectious diseases and poisonings in Poland").

Additional information

All pigs and coypus slaughtered for domestic use as well as all wild boars hunter must be submited to examination for presense of Trichinella sp. performed by official veterinarian in the way described in Regulation 2075/2005.

Detailed proceedings is described in Ordinance of Minister of Agriculture and Rural Develeopment from 9 July 2007 on veterinary requirement for production of meat intended for domestic use.

2.8.2 Trichinellosis in humans

A. Trichinellosis in humans

Reporting system in place for the human cases

Information was direct to ECDC.

2.8.3 Trichinella in animals

A. Trichinella in horses

Monitoring system

Sampling strategy

Examination of all slaughtered horses for Trichinella at slaughterhouse in accordance with meat hygiene regulation.

Frequency of the sampling

Each carcass.

Type of specimen taken

According to EU legislation (Regulation 2075/2005).

Case definition

An animal is considered positive in case of detection and identification of Trichinella larvae in the muscle sample.

Results of the investigation including the origin of the positive animals

No positive findings in 2008 from 35612 carcasses examined.
In 2009 there was no positive result for Trichinella from 42 554 carcasses examined.

Measures in case of the positive findings or single cases

Carcass is destroyed.

Notification system in place

Each case of trichinellosis must be obligatory registered in accordance with Annex 3 of The Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases (Dz. U. No. 69, item 625, as amended).

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

No cases of trichinellosis in horses was notified in prevoius years. Also no cases was observed in 2007.
In 2009 no cases of trichinellosis in domestic solipeds was found.

B. Trichinella in pigs

Number of officially recognised Trichinella-free holdings

None of the holding in Poland is recognised as officially Trichinella - free.

Monitoring system

Sampling strategy

General

Examination for Trichinella spp. of all slaughtered pigs at slaughterhouse under meat hygiene law (Regulation 2075/2005).
Reference method to detection is magnetic stirrer method for pooled sample digestion.

Frequency of the sampling

General

Each pig carcass.

Type of specimen taken

General

According to EU legislation (Regulation 2075/2005).

Methods of sampling (description of sampling techniques)

General

Reference method to detection is magnetic stirrer method for pooled sample digestion. Only pigs which are slaughter for household use could be tested by using trichinosopic examination.

Case definition

General

An animal is considered positive in case of detection and identification of Trichinella larvae in the muscle sample.

Diagnostic/analytical methods used

General

In all slaughterhouse is practise method for pooled sample digestion in accordance with regulation 2075/2005.

Preventive measures in place

All carcasses must be sampled and may not leave the premises, before the results for Trichinella examination is found to be negative.

Measures in case of the positive findings or single cases

Carcass is destroyed.

Notification system in place

Trichinellosis is an obligatory registrated disease.

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

In 2008 from 20 027 092 of pigs' carcasses tested, 69 were positive for Trichinella spp.
In 2009 from 17 799 002 carcasses tested only 13 were found to be positive.

Fattening pigs raised under controlled housing conditions in integrated production system

In 2009 from 17 799 002 carcasses tested only 13 were found to be positive.

Breeding sows and boars

There was no positive case in breeding pigs.

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

In 2008 from 20 027 092 pig's carcasses were tested, among which 69 were positive for Trichinella spp.
Whereas in 2007, 23 015 105 pig carcases were tested, among which 52 were positive for Trichinella spp.
In comparision to 2006 almost twofold increase in positive cases of trichinellosis was observed.
In 2009 was observed decreased trend for Trichinella. In comparison to 2008 the number of positive results was decreased.

Additional information

BOARS - reference method to detection is magnetic stirrer method for pooled sample digestion and all boars were tested this method.

Also 4 positive results were found in other animals -świniodzik (it's mix boar and pig).

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total units positive for Trichinella	T. spiralis	Trichinella spp., unspecified
Foxes	NRL	Animal	4	0		
Pigs - fattening pigs - raised under controlled housing conditions in integrated production system	DVI	Animal	17799002	13	0	13
Wild boars - wild	NRL/DVI	Animal	50583	619	50	569

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

In Poland there is no existing examination programme carried out among main hosts of echincoccus or obligation to eradicate or registrate cases of echinococcosis. Pursuant to Annex 5 to Act on protection of animal health and eradication of animal infectious diseases (Journal of Laws, No 69 item 625 of 2004),echinococcosis and agents thereof is under obligatory monitoring in Poland.
Testing for detection of echincoccus is a part of post-mortem inspection of slaughter animals. It is a visual inspection of the internal organs of the slaughtered animals acompanied by cuts of liver if necessary. The Echincoccus is not routinely distinguished by species.

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

In 2002 there were 867 105 cases found, and in 2003 there were 974 429 cases, which indicated that there was a rising trend in the cases found in the slaughter animals.
In 2004 from 1 280 960 cattle slaughtered there were 140 cases of echincoccus, in 29 862 sheeps 6 300 cases, in 223 goats 30, in 19 766 359 pigs 989 760 cases. There were 996 230 cases of echincoccus diagnosed in the slaughter animals.
In 2005, there were 46 cases among 1 138 273 cattle slaughtered and 484 505 cases among pigs slaughtered. There was none case of echinococcus in solipeds.
In 2006 there were only 16 cases among 1 426 765 cattle slaughtered, 1309 cases among 21 266 sheeps slaughtered and 744 260 cases among 21 985 532 pigs slaughtered.
In 2007 there were total 368 242 of positive cases out of 19 612 093 animals checked during post mortem inspection in slaughterhouses. There were 366 588 positive cases in pigs (1.97%), 1570 cases in sheep (8.86%), 58 cases in cattle (0.0064%) and 26 cases in minks(0.064%).
In 2008 there were total 409 561 positive cases out of 21 571 761 animal checked during post-mortem inspection in slaughterhouses. Certified 154 positive samples of bovine, 1426 cases in sheeps and 407 981 positive findings of Echinococcus spp. in pigs.
In addition 171 dogs, 84 cats and 15 minks were tested- none of them was positive.

In 2009, there was only information about echinococcus in pigs. From 17 799 002 examined in slaughterhouse the 84 694 was found with echinoccocus.
According to information from NRL, we observed increase prevalense of Echinococcus.

Additional information

In 2009, NRL prepared programme evaluation prevalence echinococcus in foxes and pigs. Samples were taken from west voivodeships in Poland. Type of samples were: foxes- small intestine and pigs -tissue. Method of sampling- sedimentation and counting technique.

2.9.2 Echinococcosis in humans

A. Echinococcus spp. in humans

Reporting system in place for the human cases

Information was direct to ECDC.

2.9.3 Echinococcus in animals

Table Echinococcus in animals

	Source of information	Sampling unit	Units tested	Total units positive for Echinococcus	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Foxes	NRL	Animal	250	10		10	
Pigs	DVI	Animal	17799002	84694			84694
Pigs - at slaughterhouse - Monitoring - official sampling	NRL	Animal	370	1			1

2.10 TOXOPLASMOSIS

2.10.1 General evaluation of the national situation

A. Toxoplasmosis general evaluation

History of the disease and/or infection in the country

Toxoplasmosis is an obligatory registrated disease, according to the Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases (Dz. U. No. 69, item 625, as amended). There is no active monitoring of toxoplasmosis in animals carried out in Poland. In animals, surveillance relates to the examination of the samples received for diagnostic reasons to regional veterinary laboratories by private owners or breeders.

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

In 2009 only positive results were found in pigs. There was no information about cases in other domestic animal or pets.
In 2008, 906 samples were tested and Toxoplasma gondii was detected in 190 cases. Certified 26 positive samples in cattle, 60 cases in sheeps, 59 positive results in pigs and 45 in cats.
There was upwards tendency in 2008 comparing to 2007 and 2006.
In 2007 only samples taken from cats were submited to examination - none of the sample was positive.
In 2006 there was 1 positive case of toxoplasmosis in cattle, 1 case in dog and 3 cases in cats.

Additional information

In 2009 National Reference Laboratory in Puławy was conducting sampling in west region of Poland. During this plan 550 pigs and 400 cattles were tested. All samples were tested serological as well as by PCR.

2.10.2 Toxoplasmosis in humans

A. Toxoplasmosis in humans

Reporting system in place for the human cases

Information was direct to ECDC.

2.10.3 Toxoplasma in animals

Table Toxoplasma in animals

	Source of information	Sampling unit	Units tested	Total units positive for Toxoplasma	T. gondii
Cattle (bovine animals)	NRL	Animal	400	0	0
Pigs	NRL	Animal	550	8	8

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

In the interwar period and in the first years after the World War II, urban rabies dominated on the Polish territory , and the main vector of rabies were dogs. Strict control of the population of stray dogs and the introduction (since 1949) of an obligatory vaccination against rabies caused adaptation of virus to the new host, namely red fox. Universality of a new host, as in other European countries, led to a spread of so-called forest rabies. Irrespective of the above, the vaccinations reduced this disease in Poland to a great extent. In 1946, 3600 cases of rabies in animals were found, and in 1956 this number decreased to 73 cases. In the same period from 1 to 6 cases of rabies among wild animals were notified. In the following years, the increase of infection was noticed, in particular, in foxes. At the end of the seventies, the infections exceeded the number of infections in domestic animals. After the World War II the wave of infections shifted in the south-western direction with the average speed of 30-60 km per year. The first conceptions how to limit the number of rabies cases in foxes were to decrease the density of red fox population to a level of 0.5-0.3 animal/km. Many restrictions and imperfections of this method were the reasons to look for other methods of rabies eradication. Introduction of oral immunization of foxes was a turning point. In Poland, similar to Baltic states, an increasing number of rabies cases in raccoon dogs was observed. The description of the disease in numbers does not objectively present the risks, which are associated with rabies. The small number of cases must be examined with consideration of an area on which the infections took place.

In 1990, in Poland there were 2045 cases of rabies, including 1668 cases among wild animals (1374 cases in foxes). The biggest numbers of rabies cases was noticed in poznanskie (157), opolskie (139), koszalinskie (133), szczecinskie (130), bydgoskie (123), slupskie (103) region. There were no cases in bialskopodlaskie region and there were single cases in lubelskie, lomzynskie, lodzkie and przemyskie region.
In 1991, 2287 cases of rabies were found, including 1864 in wild animals (1513 cases in foxes). Rabies was not found in lubelskie region and single cases were in przemyskie, lodzkie, lomzynskie and krosnienskie region.
In 1992r, in Poland the biggest number of 3084 cases of rabies was stated, including 2549 cases among wild animals (2079 cases in foxes). Due to this fact, in 1993, on the whole territory of Poland, an action of oral vaccination of living foxes against rabies was initiated.

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

In 1993, 2648 cases of rabies were stated, including 2166 in wild animals (1803 cases in foxes). In the subsequent years the following was found:
-In 1994, 2238 cases of rabies in animals, including cases in wild animals 1788 (1506 cases in foxes).
-1995 cases of animals, including 1528 cases of wild animals (including 1280 in foxes).
-In 1996: 2577 cases in animals, including 2064 cases in wild animals (including 1779 cases in foxes).
-- 1997, 1494 cases in animals, including 1239 cases in wild animals (including 1091 cases in foxes).
The result of the vaccinations carried out in the western part of Poland was a visible decrease of cases of rabies and even more satisfactory was lack of this infection for a long time in the regions:

zachodniopomorskie, lubuskie and dolnośląskie. In 1998, 1329 cases in animals were found, including 1120 cases in wild animals (including 927 in foxes), in 1999- 1148 cases in animals, including 721 in foxes, in 2000 there were 2224 cases found, including 1583 in foxes and in 2001 there were 2964 cases found, including 224 in foxes. In 2002 rabies was found in 1119 animals, including 1038 cases found in wild animals (884 in foxes). The list of cases of rabies in domestic animals in 1983-2000 shows that the biggest percentage was found in cattle and next in cats and dogs. Increase in the number of cases of rabies in the short time influences the increase of the number of cases in cats, which are the indicators of the disease in foxes on a given territory. Rabies in cattle is associated with putting them out in pasture. Currently, the most serious problem of rabies is the eastern border of Poland, where the transmission of rabies from the territories of Ukraine, Belarus and Russia is visible. Poland does not have detailed information on vaccination actions against rabies carried out in the above mentioned countries.
In 2008 was visible downward tendency in positive findings of rabies. In Poland made a note of 29 of rabies in animals. The most cases were in voivodeships near eastern border of Poland.
In 2009 were confimed 8 cases of rabies. All cases were found in eastern voivodeships.

Recent actions taken to control the zoonoses

Pursuant to the Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases (Journal of Laws, No 69, item 625), rabies is an infectious animal disease subject to obligatory eradication.
Since 2002 vaccination campaigns cover whole territory of Poland.
Pursuant to the regulation of the Ministry of Agriculture and Rural Development of 2 June 2004 on detailed rules and manner of conducting preventive vaccinations of wild foxes against rabies (Dz.U. of 2004 No. 142, item 1509), the vaccinations of wild foxes are conducted by the voivodship veterinary officers. According to the abovementioned regulation preventive vaccinations are realized twice a year in spring and autumn campains by plane or manual distribution of the vaccine at the forest areas and everywhere, where the wild foxes live.
To check the result of performed vaccination campaigns the monitoring tests (RFFIT, TC) for the determination of effectiveness of oral vaccination of wild foxes, are carried out based on the Ordinance of the Minister of Agriculture and Rural Rural Development of 17 December 2004 determining certain diseases, manner for carrying out the control and scope of control tests of animals infections (Dz. U. of 2004 No. 282 item 2813 as amended). According to the regulation in order to control rabies samples of cerebral tissue, serum, and mandibles shall be taken for tests per year from 8 foxes shot at each 100 km2 of the premisses of wild foxes habitat covered by preventive vaccination.

Monitoring test of the efficiency of oral immunization of foxes is carried out while using the following methods:
- immunofluorescence of brain imprint test for rabies,
- bone grinding from mandible test for the presence of tetracycline (TC),
- RFFIT test defining the name for the virus of rabies in blood serum (clot from the heart or liquid from the thoracic cavity),
- collection, preparation and analysis of epidemiologic data on cases of rabies diagnosed in the territory where the vaccination was placed,
- differentiation of strains in the aspect of wild-type strain: vaccination strain
- genotyping of strains.

Additional information

Routine diagnosis of rabies in animals of all species is carried out in 16 regional diagnostic laboratories (Veterinary Hygiene Laboratories) and in the reference laboratory (Department of Virology of the National Veterinary Institute in Pulawy).

Applied tests:
- direct immunofluorescence (FAT test) of mind imprints with monovalent antiantinucleocapsid conugate
- virus isolation on mice (MIT mouse isolation test)
- virus isolation in neuroblastoma cell farming
- genotyping of isolates of rabies virus (only reference laboratory)
- serological test RFFIT test

In 2008, there were total 29 positive results of rabies, therein 1 case in dog and cat, 3 cases in cattle, 19 in foxes, 2 in raccoon dogs and 3 cases in bats.
Whereas 2007, there were 42 cases of rabies.

In 2009, 22 221 wild foxes were tested in monitoring framework.

2.11.2 Rabies in humans

A. Rabies in humans

Reporting system in place for the human cases

Information was direct to ECDC.

2.11.3 Lyssavirus (rabies) in animals

A. Rabies in dogs

Monitoring system

Sampling strategy

Samples are taken only post mortem after suspicion of rabies. In case when man was bit by a dog, District Veterinary Officer orders observation this animal during 15 days.

Type of specimen taken

Organs/tissues: ___brain_

Case definition

Positive IF test.

Diagnostic/analytical methods used

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

Vaccination policy

Pursuant to the provision of Article 56 of the Act on protection of animal health and eradication of animal infectious diseases (Journal of Laws, No 69 item 625 of 2004), dogs over 3 months old, living in the territory of the whole country and free-living foxes, shall be subject to obligatory preventive vaccination against rabies.

Measures in case of the positive findings or single cases

General provisions are set out in the Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases (Dz. U. No. 69, item 625, as amended).
Detail procedure is described in Ordinance of the Minister of Agriculture and Rural Development of 7 January 2005 on control of rabies.

Notification system in place

According to Annex 2 of the Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases (Dz. U. No. 69, item 625, as amended), suspicion or confirmation of rabies must be obligatory notified to the competent authority. Besides all cases of bitten by a dog, should be reported to launch epidemiological investigation.

Results of the investigation

Investigations of the human contacts with positive cases

District Veterinary Officer informs District Sanitary Officer about all cases of rabies in dogs and all inconclusive cases that must by conformed with test on mice.

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

Preventive vaccination of dogs influenced the reduction of the number of cases of rabies in the animals of the same species. Currently, the confirmed cases are present in dogs which were not immunized against rabies. Despite a small number of infections of the same species, 50% of all exposures of humans to infection and post-exposure vaccinations in humans is connected with dogs.
There were 4 cases of rabies in dogs in 2004, 5 cases of rabies in 2005, 4 cases in 2006, 3 cases in 2007

and only 1 case in 2008.
In 2009, 808 dogs were tested and no positive results was found.

Table Rabies in animals

	Source of information	Sampling unit	Units tested	Total units positive for Lyssavirus (rabies)	Lyssavirus, unspecified	Classical rabies virus (genotype 1)	European Bat Lyssavirus - unspecified
Badgers - wild	DVI	Animal	25	0			
Bats - wild	DVI	Animal	109	2	0	0	2
Cats	DVI	Animal	856	0			
Cattle (bovine animals)	DVI	Animal	41	0			
Deer	DVI	Animal	0	0			
Deer - wild - red deer	DVI	Animal	6	0			
Deer - wild - roe deer	DVI	Animal	175	0			
Dogs	DVI	Animal	620	0			
Dogs - stray dogs	DVI	Animal	182	0			
Foxes - wild	DVI	Animal	23153	6	0	6	
Goats	DVI	Animal	3	0			
Marten - wild	DVI	Animal	117	0			
Pigs	DVI	Animal	5	0			
Raccoon dogs - wild	DVI	Animal	75	0			
Raccoons - wild	DVI	Animal	1	0			
Sheep	DVI	Animal	2	0			
Solipeds, domestic	DVI	Animal	7	0			
Wild boars - wild	DVI	Animal	19	0			
Wolves - wild	DVI	Animal	2	0			

Table Rabies in animals

	Source of information	Sampling unit	Units tested	Total units positive for Lyssavirus (rabies)	Lyssavirus, unspecified	Classical rabies virus (genotype 1)	European Bat Lyssavirus - unspecified
Chinchillas - in total - Clinical investigations	DVI	Animal	2	0			
Hamsters - pet animals - in total - Clinical investigations	DVI	Animal	4	0			
Hedgehogs - in total - Clinical investigations	DVI	Animal	14	0			
Other animals - unspecified - in total - Clinical investigations	DVI	Animal	195	0			
Polecats - in total - Clinical investigations	DVI	Animal	2	0			
Rats - in total - Clinical investigations	DVI	Animal	13	0			
Squirrels - in total - Clinical investigations	DVI	Animal	27	0			

2.12 Q-FEVER

2.12.1 General evaluation of the national situation

A. Coxiella burnetii (Q-fever) general evaluation

History of the disease and/or infection in the country

In Poland the first focus of Q -fever was recognised in 1956, originated from sheeps on Romania. From that year in Poland was observed a few focus in animals and humans again. Most cases were concerned with animals (sheeps, cattle, goats) or materials originated from them (leather and wool) imported to Poland.

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

In 2009 NRL in Puławy was tested sample from cattle. Only 20 samples were positive. All samples were tested serological test -complement fixation test (CFT).
In 2008, NationaL Veterinary Research Institute in Puławy was conducted multiannual programme in which 180 cattle were tested. In connection with illness in humans in lubelskie and podkarpackie voivodeships, the 950 animals were tested additionally. Therein were 453 positive units for Coxiella burnetii.

Additional information

In 2008, 1130 of cattle were tested. Therein were 453 positive units for Coxiella burnetii.

2.12.2 Coxiella (Q-fever) in animals

Table Coxiella burnetii (Q fever) in animals

	Source of information	Sampling unit	Units tested	Total units positive for Coxiella (Q-fever)	C. burnetii
Cattle (bovine animals)	NRL	Animal	369	20	20
Goats	NRL	Animal	1	0	

Footnote:
test type- CFT

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1 ESCHERICHIA COLI, NON-PATHOGENIC

3.1.1 General evaluation of the national situation

A. Escherichia coli general evaluation

History of the disease and/or infection in the country

In 2008 National Veterinary Research Institute was conducted multiannual programme for E.coli. However in Poland don't exist any permanent monitoring.
In 2007 in Poland there was no permanent monitoring of antimicrobial resistance of indicatory bacteria originating from animals an food.

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

Samples are taken in framework industry HACCP.In 2009, 2008 and 2007, only isolates in food originated from animals were examined.

Additional information

For the surveys the diffusion method was used. To all antimicrobials tested, zone diameter averaged from 11 to 20 mm. Besides all antimicrobials were indicated intermediate susceptibility.

In 2009 , 3786 samples were examined, and none of them was positive. Products which were tested e.g.: meat from broilers-fresh, meat from turkey- fresh, pork-fresh, meat from bovine -fresh.

3.1.2 Escherichia coli, non-pathogenic in animals

A. E.coli in animal

Monitoring system

Sampling strategy

National Veterinary Research Institute in previous year was conducted multiannual programme for E.coli. Samples were taken from animals at slaughterhouses by the official veterinarians and subjected to the laboratory by district veterinary officers.

Methods of sampling (description of sampling techniques)

Samples were taken from animals at slaughterhouses. The official veterinarians were taken cutting of muscular tissue and subjected to the laboratory by district veterinary officers.

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

2008-A total of 354 e.coli isolates comprising of 176 isolates from cattle, 91 isolates from pigs, 45 from tyrkeys and 42 from broilers.
Cattle: 16 of the e.coli isolates were resistant to at least 1 of the antimicrobial agents tested. Overall, 2 of the isolates were multi-drug resistant.
Pigs: 13 of the e.coli isolates were resistant to at least 1 of the antimicrobial agents tested. Overall, 1 of the isolates were multi-drug resistant.
Turkeys: 7 of the e.coli isolates were resistant to at least 1 of the antimicrobial agents tested. Overall, 22 of the isolates were multi-drug resistant.
Broilers: 7 of the e.coli isolates were resistant to at least 1 of the antimicrobial agents tested. Overall, 15 of the isolates were multi-drug resistant.
Resistence was highest in the turkeys, folowed by broilers, cattle and pigs.
Resistance to tetracykline and ampicilin was significantly highest in the isolates from cattle , turkeys and broilers. Isolates from broilers and turkeys were significantly more resistance to nalidixic acid, sulfonamide and trimethoprim than those from cattle and pigs.

2009- Antimicrobial susceptibity was testingin five animal species: cattle, pigs, broiler, laying hens and turkey. E. coli the most is resistance in broiler and turkey flocks for tetracycline, ampicillin and ciprofloxacin. E. coli isolated in cattle is most susceptibility.

3.1.3 Antimicrobial resistance in Escherichia coli, non-pathogenic

Table Antimicrobial susceptibility testing of E. coli in Pigs

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	184	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	184	13
Fluoroquinolones - Ciprofloxacin	184	26
Quinolones - Nalidixic acid	184	20
Trimethoprim	184	37
Sulfonamides - Sulfonamide	184	66
Aminoglycosides - Streptomycin	184	75
Aminoglycosides - Gentamicin	184	7
Penicillins - Ampicillin	184	57
Tetracyclines - Tetracycline	184	78
Fully sensitive	184	60
Resistant to 1 antimicrobial	184	30
Resistant to 2 antimicrobials	184	30
Resistant to 3 antimicrobials	184	14
Resistant to 4 antimicrobials	184	20
Resistant to >4 antimicrobials	184	30
Cephalosporins - Cefotaxim	184	8
Cephalosporins - Ceftazidim	184	7

Table Antimicrobial susceptibility testing of E. coli in Cattle (bovine animals)

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	173	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	173	2
Fluoroquinolones - Ciprofloxacin	173	11
Quinolones - Nalidixic acid	173	7
Trimethoprim	173	15
Sulfonamides - Sulfonamide	173	24
Aminoglycosides - Streptomycin	173	19
Aminoglycosides - Gentamicin	173	2
Penicillins - Ampicillin	173	21
Tetracyclines - Tetracycline	173	21
Fully sensitive	173	133
Resistant to 1 antimicrobial	173	9
Resistant to 2 antimicrobials	173	8
Resistant to 3 antimicrobials	173	8
Resistant to 4 antimicrobials	173	3
Resistant to >4 antimicrobials	173	12
Cephalosporins - Cefotaxim	173	1
Cephalosporins - Ceftazidim	173	1

Table Antimicrobial susceptibility testing of E. coli in Turkeys

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	185	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	185	138
Fluoroquinolones - Ciprofloxacin	185	109
Quinolones - Nalidixic acid	185	94
Trimethoprim	185	72
Sulfonamides - Sulfonamide	185	90
Aminoglycosides - Streptomycin	185	82
Aminoglycosides - Gentamicin	185	13
Penicillins - Ampicillin	185	119
Tetracyclines - Tetracycline	185	138
Fully sensitive	185	25
Resistant to 1 antimicrobial	185	12
Resistant to 2 antimicrobials	185	25
Resistant to 3 antimicrobials	185	19
Resistant to 4 antimicrobials	185	17
Resistant to >4 antimicrobials	185	87
Cephalosporins - Cefotaxim	185	17
Cephalosporins - Ceftazidim	185	17

Table Antimicrobial susceptibility testing of E. coli in Gallus gallus (fowl)

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	356	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	356	41
Fluoroquinolones - Ciprofloxacin	356	257
Quinolones - Nalidixic acid	356	201
Trimethoprim	356	107
Sulfonamides - Sulfonamide	356	160
Aminoglycosides - Streptomycin	356	139
Aminoglycosides - Gentamicin	356	25
Penicillins - Ampicillin	356	207
Tetracyclines - Tetracycline	356	173
Fully sensitive	356	75
Resistant to 1 antimicrobial	356	23
Resistant to 2 antimicrobials	356	49
Resistant to 3 antimicrobials	356	31
Resistant to 4 antimicrobials	356	26
Resistant to >4 antimicrobials	356	152
Cephalosporins - Cefotaxim	356	40
Cephalosporins - Ceftazidim	356	40

Footnote:
testing in broilers and laying hens

Table Antimicrobial susceptibility testing of E. coli in Cattle (bovine animals) - at slaughterhouse - Monitoring - official sampling - selective sampling - quantitative data [Dilution method]

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

E.coli, non-pathogenic, unspecified	Cattle (bovine animals) - at slaughterhouse - Monitoring - official sampling - selective sampling																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	173																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	173	2									6	97	66	2			2						2	64
Amphenicols - Florfenicol	16	173	1									9	118	44	1			1						2	64
Tetracyclines - Tetracycline	8	173	21								115	31	3	3	1	3	10	7						1	64
Fluoroquinolones - Ciprofloxacin		176	14	6	109	47	2	3	3	3	1				2									0.008	8
Quinolones - Nalidixic acid	16	173	7										164	2		1	1	5						4	64
Trimethoprim	2	173	15							153	3	2	2	2			11							0.5	32
Sulfonamides - Sulfonamide	256	173	24											53	60	28	7	1			3	21		8	1024
Aminoglycosides - Streptomycin	16	173	19									10	61	75	8	1	4	5	9					2	128
Aminoglycosides - Gentamicin	2	173	2						32	64	68	7	1				1							0.25	32
Penicillins - Ampicillin	8	173	21							2	14	95	38	3	2	2	17							0.5	32
Cephalosporins - Cefotaxim	2	173	1				156	14	2	1														0.06	4

Table Antimicrobial susceptibility testing of E. coli in Pigs - at slaughterhouse - animal sample - Monitoring - official sampling - quantitative data [Dilution method]

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

E.coli, non-pathogenic, unspecified	Pigs - at slaughterhouse - animal sample - Monitoring - official sampling																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	184																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	184	13									11	95	61	4	4	4	5						2	64
Amphenicols - Florfenicol	16	184	4									13	114	49	4			4						2	64
Tetracyclines - Tetracycline	8	184	78								83	18	1	4		6	39	33						1	64
Fluoroquinolones - Ciprofloxacin	0.03	184	26	12	104	42		1	17	3	2	1		1	1									0.008	8
Quinolones - Nalidixic acid	16	184	20										158	5	1	1	6	13						4	64
Trimethoprim	2	184	37							138	3	6	2	1	1		33							0.5	32
Sulfonamides - Sulfonamide	256	184	66											52	41	17	5	2	1	2	1	63		8	1024
Aminoglycosides - Streptomycin	16	184	75									3	33	53	20	8	18	17	32					2	128
Aminoglycosides - Gentamicin	2	184	7						23	64	73	17	2	2	2	1								0.25	32
Penicillins - Ampicillin	8	184	56								29	75	22	2	2	1	53							0.5	32
Cephalosporins - Cefotaxim	2	184	8				157	13	6	1	1	1		5										0.06	4

Table Antimicrobial susceptibility testing of E. coli in Gallus gallus (fowl) - broilers - at slaughterhouse - Monitoring - official sampling - quantitative data [Dilution method]

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

E.coli, non-pathogenic, unspecified	Gallus gallus (fowl) - broilers - at slaughterhouse - Monitoring - official sampling																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	185																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	185	31									11	84	56	3	3	6	22						2	64
Amphenicols - Florfenicol	16	185	10									15	115	41	4			10						2	64
Tetracyclines - Tetracycline	8	185	116								56	11	1	1	1	7	52	56						1	64
Fluoroquinolones - Ciprofloxacin	0.03	185	148	3	27	7	1	9	34	18	7	8	17	22	32									0.008	8
Quinolones - Nalidixic acid		185	138										39	8			9	129						4	64
Trimethoprim	2	185	71							105	4	5	2			1	68							0.5	32
Sulfonamides - Sulfonamide	256	185	108											29	30	13	3	2			3	105		8	1024
Aminoglycosides - Streptomycin	16	185	98									1	29	36	21	9	16	18	55					2	128
Aminoglycosides - Gentamicin	2	185	16						18	71	66	14	1	4	5	3	3							0.25	32
Penicillins - Ampicillin	8	185	134								8	32	11		1		133							0.5	32
Cephalosporins - Cefotaxim	2	185	27				127	27	4		1	4	7	15										0.06	4

Table Antimicrobial susceptibility testing of E. coli in Turkeys - at slaughterhouse - Monitoring - quantitative data [Dilution method]

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

E.coli, non-pathogenic, unspecified	Turkeys - at slaughterhouse - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	185																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	185	34									11	89	48	3	4	4	26						2	64
Amphenicols - Florfenicol	16	185	5									14	115	45	6			5						2	64
Tetracyclines - Tetracycline	8	185	138								38	8	1			9	57	72						1	64
Fluoroquinolones - Ciprofloxacin	0.03	185	109	1	54	21	2	5	20	22	3	4	4	14	35									0.008	8
Quinolones - Nalidixic acid	16	185	94										80	6	5	1	11	82						4	64
Trimethoprim	2	185	72							112		1					72							0.5	32
Sulfonamides - Sulfonamide	256	185	90											40	39	15	1				3	87		8	1024
Aminoglycosides - Streptomycin	16	185	82									2	36	49	16	12	6	24	40					2	128
Aminoglycosides - Gentamicin	2	185	13						22	64	73	13			3	3	7							0.25	32
Penicillins - Ampicillin	8	185	118							1	15	34	16	1			118							0.5	32
Cephalosporins - Cefotaxim	2	185	17				126	39	3	1		5	3	8										0.06	4

Table Antimicrobial susceptibility testing of E. coli in Gallus gallus (fowl) - laying hens - at slaughterhouse - Monitoring - quantitative data [Dilution method]

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

E.coli, non-pathogenic, unspecified	Gallus gallus (fowl) - laying hens - at slaughterhouse - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	171																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	171	10									11	97	50	3	1		9						2	64
Amphenicols - Florfenicol	16	171	2									15	112	39	3	1		1						2	64
Tetracyclines - Tetracycline	8	171	57								84	27	1	2	2	5	26	24						1	64
Fluoroquinolones - Ciprofloxacin	0.03	171	73	2	55	41	1	4	26	17	1	5	3	6	10									0.008	8
Quinolones - Nalidixic acid	16	171	63										99	7	2	2	12	49						4	64
Trimethoprim	2	171	36							123	6	6		2			34							0.5	32
Sulfonamides - Sulfonamide	256	171	52											50	43	18	3	5		3	3	46		8	1024
Aminoglycosides - Streptomycin	16	171	41									3	53	55	19	5	5	6	25					2	128
Aminoglycosides - Gentamicin	2	171	9						18	65	62	17	2	1	1	1	4							0.25	32
Penicillins - Ampicillin	8	171	72								14	65	18	2	1	3	68							0.5	32
Cephalosporins - Cefotaxim	2	171	13				129	27	2				3	10										0.06	4

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

Test Method Used	Standard methods used for testing
Broth dilution	ISO 20776-1:2006

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

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing

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

3.2 ENTEROCOCCUS, NON-PATHOGENIC

3.2.1 General evaluation of the national situation

3.2.2 Antimicrobial resistance in Enterococcus, non-pathogenic isolates

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing

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

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1 ENTEROBACTER SAKAZAKII

4.1.1 General evaluation of the national situation

A. Enterobacter sakazakii general evaluation

Additional information

There was no data for Enterobacter sakazakii.

4.1.2 Enterobacter sakazakii in foodstuffs

A. Enterobacter sakazakii in foodstuffs

Additional information

There was no data for Enterobacter sakazakii in foodstuffs.

4.2 HISTAMINE

4.2.1 General evaluation of the national situation

A. Histamine General evaluation

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

There was no monitoring programme realized in Poland. The samplings were carried out mainly at the initiative of the operators as well as during the official controls in accordance with requirement set out in Regulation 2073/2005.

4.2.2 Histamine in foodstuffs

A. Histamine in foodstuffs

Monitoring system

Sampling strategy

Samples for presence of Histamine were taken from fish products-fish mainly by the operators or during official controls.
Sampling by operator take place on basis HACCP or own check by industry. In Poland official veterinarians behaved accordance with General Veterinary Officer Giudelines.

Frequency of the sampling

Frequency of the sampling was described in HACCP by operator. Freqency of the sampling for official veterinarians was described by CVO Guidelines.

Definition of positive finding

>200mg/kg for fishery products from fish species associated with high amount of histidine.
>400mg/kg for fishery products which have undergone enzyme maturation in brine.

Control program/mechanisms

The control program/strategies in place

There is no official control or monitoring programme for histamine in Poland. Samples were taken by operators within the framework of internal programmes, in accordance with provisions set out in Regulation 2073/2005.

Measures in case of the positive findings or single cases

Actions are taken case-by-case, and are based on provisions set out in Regulation 2073/2005.

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

In 2009, 186 samples were tested, Only 2 results were not satisfactory.
In 2008, 540 samples were tested. All results were satisfactory.
Whereas in 2007, 175 samples from fish and fish products were taken.

Table Histamine in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units in non-conformity	<= 100 mg/kg	>100 - <= 200 mg/kg	>200 - <= 400 mg/kg	> 400 mg/kg
Fish - Fishery products from fish species associated with a high amount of histidine - not enzyme maturated [1)]	processing plant	Batch	25g	9	0	9	0	0	0
Fish - Fishery products which have undergone enzyme maturation treatment in brine [2)]	processing plant	Batch	25 g	56	0	56	0	0	0
Fish - Fishery products from fish species associated with a high amount of histidine - not enzyme maturated - at processing plant - domestic production - Surveillance - HACCP and own checks	processing plant	Batch	25 g	113	2	111	0	0	2
Fish - at processing plant - domestic production - Surveillance - HACCP and own checks [3)]	RVL	Batch	25 g	3	2	1	2	0	0
Fish - raw - chilled - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25 g	2	0	2	0	0	0
Fish - unspecified - chilled - at processing plant - domestic production - Monitoring - industry sampling - objective sampling	processing plant	Batch	200 g	3	0	3	0	0	0

Comments:

[1)] maczeta roast in cake
[2)] processing plant-HACCP- herring
[3)] fresh fish

4.3 STAPHYLOCOCCAL ENTEROTOXINS

4.3.1 General evaluation of the national situation

A. Staphylococcal enterotoxins general evaluation

History of the disease and/or infection in the country

There is no official monitoring in place, therefore no official reports are available from previous years.
In 2007 and 2008 -none of the tested samples were positive for Sataphyloccocal enterotoxins.

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

There was no monitoring programme of Staphylococcal enterotoxins carried out in Poland. The samplings were carried out as a part of the official controls and at the initiative of the operators.
Up to this time in Poland didn't note positive results for Staphyloccocal enterotoxins.

4.3.2 Staphylococcal enterotoxins in foodstuffs

A. Staphylococcal enterotoxins in foodstuffs

Monitoring system

Sampling strategy

There is no official monitoring in place. Samples are taken during official controls and by operators.
The most of samples are taken by operators.
According to insruction of CVO, number of samples taken during official controls should amount to 10% samples which were taken by FBO.

Frequency of the sampling

Food bussines operators are taken samples according to regulation No 2073/2005.
While official samples account for 10% of FBO samples.

Control program/mechanisms

The control program/strategies in place

There is no offcial control programme in place. Sampels are taken on the basis of provision set out in Regulation 2073/2005.

Measures in case of the positive findings or single cases

Improvemets in production hygiene and selection of raw material.

Notification system in place

There is no obligation to register S.enterotixins. However results of samples examined in Regional Veterinary Laboratories are available.

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

Number of tested samples increased every year. There was no positive results for Staphyloccocus.

Additional information

In 2009, 635 samples were tested, none of them were positive.

In 2008, 613 samples were tested. Most of them originated from cows' milk. It were soft, semi-soft and hard cheeses. In addition 139 dairy products were tested. None of them were positive for Staphyloccocal enterotoxins in food.
Whereas in 2007, 79 samples were taken, most of them from soft and semi-soft cheese (59), none of them were positive for Staphylococcal enterotoxins.

Table Staphylococcal enterotoxins in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Staphylococcal enterotoxins
Cheeses made from cows' milk - hard - made from pasteurised milk [1)]	industry	Batch	25g	414	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk [2)]	processing plant	Single	25g	67	0
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk [3)]	processing plant	Single	1g	10	0
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk	industry	Batch	1g	5	0
Dairy products (excluding cheeses)	RVL/industry	Batch	1g	67	0
Dairy products (excluding cheeses) - milk powder and whey powder	RVL	Batch	25g	103	0
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	19	0

Comments:

[1)] industry sampling
[2)] industry sampling
[3)] industry sampling

5. FOODBORNE

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

A. Foodborne outbreaks

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

The following legal acts create the framework for State Sanitary Inspection competencies and activity: Act of March 15th 1985 on State Sanitary Inspection (Journal of Laws. of 2006, No 122, item. 851), Act of September 6th 2001 on Contagious Diseases and Infections (Journal of Laws. No126, item 1384). According to Article 7 of Act of March 15th 1985 State Sanitary Inspection is supervised by the Ministry of Health. Chief Sanitary Inspector governs State Sanitary Inspection. Chief Sanitary Inspector (at national level) is accountable directly to the Minister of Health and the Prime Minister. Voivodeship Sanitary Inspectors (16) are accountable to the Chief Sanitary Inspector and directly to the Minister of Health. Poviat Sanitary Inspectors (318) are accountable to the Voivodeship Sanitary Inspectors.
The system of communicable diseases epidemiological surveillance at present in Poland is in line with the act of September 6th 2001. This system complies with the Community Network on communicable diseases based on Dec. 2119/ 98/ EC and the Commission decisions based on that decision. The organizational structure of surveillance is based on 318 Poviat Sanitary Epidemiological Stations at local level and 16 Voivodeship Sanitary Epidemiological Stations at Voivodeship level and 15 Border Sanitary Epidemiological Stations. The Department of Epidemiology, at the National Institute of Public Health – National Institute of Hygiene in Warsaw, performs analyses for the whole country. As the poisonings are reported at Poviat level, the State Poviat Sanitary Inspector sends the notification to State Voivodeship Sanitary Inspector on a special application form. Depending on the assessment of the level of epidemiological threat, State Voivodeship Sanitary Inspector decides, in cooperation with Veterinary Inspection bodies, on the course of action taken at Voivodeship level to control the outbreak. Then the State Voivodeship Sanitary Inspector submits a report on food poisoning/ infection cases to the Department of Epidemiology in the National Institute of Hygiene, which, pursuant to respective agreements, collects, analyzes, verifies and disseminates information regarding the outbreak in the country, and to the Department of Disease Surveillance in the Chief Sanitary Inspectorate, also on a specified application form. Reports which contain information e.g. on cases of food poisonings are systematically placed on widely accessible the National Institute of Public Health - National Institute of Hygiene Websites.

Description of the types of outbreaks covered by the reporting:

In accordance with the definition set forth in the according to Council Directive 2003/99/WE of 17 November 2003 the following shall be considered outbreaks of foodborne zoonotic diseases: at least two cases of foodborne zoonotic infection of people in specific conditions or of infection with zoonotic agent, or a situation where the number of actual disease cases exceeds the number of expected cases and is connected with one food source, or such a connection is likely.
The reporting system covered the outbreak household and general outbreaks

National evaluation of the reported outbreaks in the country:

Trends in numbers of outbreaks and numbers of human cases involved

In the year 2009 a total of 314 foodborne outbreaks were notified, involving 3571 cases (781 hospitalized). Compared to 2008 the total number of outbreaks decreased 35 %. 35,35 % of outbreaks were classified as verified. The verified outbreaks affected 1527 people resulting in 431 hospitalization. In possible outbreaks were ill 2044 people (350 hospitalized). In 2009 the seven foodborne outbreaks/epidemics with 50 or more cases each were registered and involved 481 cases (58 hospitalized).
The general outbreaks constituted 53,2% of all confirmed outbreaks, while the household outbreaks - 46,8%. However, the general outbreaks included 86,1% of human cases, 73,8 of all admitted to hospitals.

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

The most frequent causative agent identified in the verified outbreaks was Salmonella species, the predominant serotype was S. Enteritidis (80,2 % of the outbreaks). The others Salmonella serotypes like S. Thypimurium and S. Infantis were associated with 1,8%of the verified outbreaks. Bacillus cereus caused 2,7 % of all reported verified outbreaks. Morover tree outbreaks of trichinellosis were registered (33 cases, 13 hospitalize). In 2009, the causative agent was unknown in 37,3 % of all reported outbreaks and 4,5 % of verified outbreaks. As in 2008, Salmonellosis outbreaks were mainly related to the consumption of eggs (61,3%). The trchinellosis outbreaks were associated with consumption of wild boards meat.

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

The dominant setting of the outbreak was household - 66,7 % of verified outbreaks. Another place of setting was restaurants - 15,3 % of outbreaks.

The most commonly reported place of problem origin was farm (primary productions) - 45% of all verified outbreaks and were mainly identified in Sallmonella outbreaks. The “household” and “catering services/ restaurants” were linked with 12,6 % of verified outbreaks (7,2 % and 30,1 % of cases respectively).

Evaluation of the severity and clinical picture of the human cases

In 2009, about 21,9 % of persons ill in all reported outbreaks needed hospitalization. However, people with trchinellosis were more often admitted to hospitals than cases affected by Salmonella, 39,4% and 34% respectively.

In all outbreaks were affected 884 children under 14 years, 36% of them were hospitalized. The acute diarrhea predominate in the clinical picture of human cases in outbreaks caused by Salmonella. In outbreaks caused by Staphylococcus aureus vomiting occurred in 79% of affected people. There were no deaths related to foodborne outbreaks.

Control measures or other actions taken to improve the situation

Eggs employed by all catering facilities are compulsorily submitted to either pasteurisation or ultra violet treatment. Due to the Polish culinary preferences of eating desserts made from raw eggs, the monitoring of the occurrence of pathogenic bacteria in food on the market in order to check the implementation of Salmonella eradication and education programms for consumers may be needed as complementary measures to limit the transmission of salmonellosis.

Additional information

Cooperation between authorities employed to take action in cases of outbreaks amongst human population in Poland was specified in: the Ordinance of the Minister of Health of 7 April 2006 on the cooperation between the State Sanitary Inspectorate, Veterinary Inspectorate and State Environmental Protection Inspectorate regarding control of infectious diseases (Journal of Laws. of 2006 no 73, item 516), which is a statutory delegation, referred to in Article 4 of the Act of 6 September 2001 on infectious diseases and infections (Journal of Laws. of 2001 No 125, item 1384, as amended). Ordinance of the Council of Ministers of 23 April 2006 on the cooperation between the Veterinary Inspectorate, State Sanitary Inspectorate, State Pharmaceutical Inspectorate, Trade Inspectorate, Road Transport Inspectorate, Inspection of Marketing Quality of Agricultural and Food Products and local administration units in control of infectious animal diseases, including zoonotic diseases (Journal of Laws. of 2006 No 83, item 575), issued on the basis of Article 62 (2) of the Act of 11 March 2004 on animal health protection and control.

Table Foodborne Outbreaks: summarised data

	Total number of outbreaks	Outbreaks	Human cases	Hospitalized	Deaths	Number of verified outbreaks
Bacillus	3	0	0	0	0	3
Campylobacter	3	3	6	1	0	0
Clostridium	6	6	37	5	0	0
Escherichia coli, pathogenic	5	5	125	2	0	0
Foodborne viruses	1	0	0	0	0	1
Listeria	0	0	0	0	0	0
Other agents	4	4	23	11	0	0
Parasites	3	0	0	0	0	3
Salmonella	161	66	399	157	0	95
Staphylococcus	6	2	16	2	0	4
Unknown	118	113	1430	169	0	5
Yersinia	4	4	8	3	0	0

Table Verified Foodborne Outbreaks: detailed data for Bacillus

Please use CTRL for multiple selection fields

B. cereus

	Value
Code	0144
Outbreaks	1
Human cases	52
Hospitalized	0
Deaths	0
Foodstuff implicated	Cereal products including rice and seeds/pulses (nuts, almonds)
More Foodstuff information	buckwheat
Type of evidence	Analytical epidemiological evidence;Laboratory detection in implicated food
Outbreak type	General
Setting	Temporary mass catering (fairs, festivals)
Place of origin of problem	Other place of origin
Origin of foodstuff	Unknown
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

B. cereus

	Value
Code	0370
Outbreaks	1
Human cases	62
Hospitalized	2
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in implicated food
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	unknown
Origin of foodstuff	unknown
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

B. cereus

	Value
Code	0268
Outbreaks	1
Human cases	15
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in implicated food
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	Domestic
Contributory factors	Cross-contamination;Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

Table Verified Foodborne Outbreaks: detailed data for Foodborne viruses

Please use CTRL for multiple selection fields

Calicivirus - norovirus (Norwalk-like virus)

	Value
Code	0075
Outbreaks	1
Human cases	13
Hospitalized	0
Deaths	0
Foodstuff implicated	Vegetables and juices and other products thereof
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Other place of origin
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

Table Verified Foodborne Outbreaks: detailed data for Parasites

Please use CTRL for multiple selection fields

Trichinella - T. spiralis

	Value
Code	0020
Outbreaks	1
Human cases	4
Hospitalized	4
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff information	wild game (wild boar)
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor;Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

Trichinella - Trichinella spp., unspecified

	Value
Code	0176
Outbreaks	1
Human cases	5
Hospitalized	5
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff information	wild game (wild boar)
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor;Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

Trichinella - Trichinella spp., unspecified

	Value
Code	0033
Outbreaks	1
Human cases	24
Hospitalized	4
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff information	wild game (wild boar)
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor;Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

Table Verified Foodborne Outbreaks: detailed data for Salmonella

Please use CTRL for multiple selection fields

S. Enteritidis

	Value
Code	0225
Outbreaks	1
Human cases	13
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Other setting
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0099
Outbreaks	1
Human cases	4
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Household, domestic kitchen
Origin of foodstuff	unknown
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0291
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Same as setting
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	Salmonella eneritidis, Salmonella Gallinarum

S. Enteritidis

	Value
Code	0285
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff information	Broiler meat and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0264
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0218
Outbreaks	1
Human cases	12
Hospitalized	3
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Take-away
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0248
Outbreaks	1
Human cases	18
Hospitalized	10
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Household
Place of origin of problem	Household, domestic kitchen
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0323
Outbreaks	1
Human cases	7
Hospitalized	5
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Cross-contamination
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0219
Outbreaks	1
Human cases	4
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Household, domestic kitchen
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0023
Outbreaks	1
Human cases	2
Hospitalized	0
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	unknown
Contributory factors	Inadequate chilling
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0119
Outbreaks	1
Human cases	5
Hospitalized	2
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff information	Bovine meat and raw eggs "Tatar"
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0383
Outbreaks	1
Human cases	7
Hospitalized	4
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0131
Outbreaks	1
Human cases	36
Hospitalized	9
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Take-away or fast-food outlet
Place of origin of problem	Take-away
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0351
Outbreaks	1
Human cases	16
Hospitalized	3
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff information	Broiler meat and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	Unknown
Contributory factors	Cross-contamination
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0272
Outbreaks	1
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0393
Outbreaks	1
Human cases	6
Hospitalized	3
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0357
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0265
Outbreaks	1
Human cases	4
Hospitalized	4
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0191
Outbreaks	1
Human cases	6
Hospitalized	5
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0014
Outbreaks	1
Human cases	3
Hospitalized	1
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	unknown
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0321
Outbreaks	1
Human cases	5
Hospitalized	0
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0183
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0361
Outbreaks	1
Human cases	18
Hospitalized	5
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Other setting
Place of origin of problem	unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0356
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0372
Outbreaks	1
Human cases	4
Hospitalized	4
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff information	Bovine meat and raw eggs "Tatar"
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Same as setting
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0352
Outbreaks	1
Human cases	114
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	Domestic
Contributory factors	Cross-contamination
Other Agent (Mixed Outbreaks)	Staphylococcus; S. aureus
Comment	

S. Enteritidis

	Value
Code	0276
Outbreaks	1
Human cases	4
Hospitalized	4
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0223
Outbreaks	1
Human cases	6
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Household
Place of origin of problem	Household, domestic kitchen
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0422
Outbreaks	1
Human cases	4
Hospitalized	2
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff information	Bovine meat and raw eggs "Tatar"
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0381
Outbreaks	1
Human cases	7
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	unknown
Origin of foodstuff	unknown
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0270
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0343
Outbreaks	1
Human cases	5
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0174
Outbreaks	1
Human cases	5
Hospitalized	2
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff information	Raw meat and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0407
Outbreaks	1
Human cases	3
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0269
Outbreaks	1
Human cases	5
Hospitalized	1
Deaths	0
Foodstuff implicated	Dairy products (other than cheeses)
More Foodstuff information	ice cream
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	unknown
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0405
Outbreaks	1
Human cases	11
Hospitalized	11
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0206
Outbreaks	1
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. group C2

	Value
Code	0182
Outbreaks	1
Human cases	23
Hospitalized	4
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0419
Outbreaks	1
Human cases	4
Hospitalized	2
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff information	Broiler meat and raw eggs
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0289
Outbreaks	1
Human cases	4
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Same as setting
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0210
Outbreaks	1
Human cases	8
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0355
Outbreaks	1
Human cases	63
Hospitalized	8
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	unknown
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	Casustive agents: Salmonella enteritidis and Salmonella mbandaka

S. Enteritidis

	Value
Code	0377
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0326
Outbreaks	1
Human cases	27
Hospitalized	7
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Retail sale outlet
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0416
Outbreaks	1
Human cases	3
Hospitalized	1
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0450
Outbreaks	1
Human cases	20
Hospitalized	0
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff information	Broiler meat and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Household
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	unknown
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0308
Outbreaks	1
Human cases	15
Hospitalized	15
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0127
Outbreaks	1
Human cases	5
Hospitalized	1
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0336
Outbreaks	1
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0409
Outbreaks	1
Human cases	13
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0233
Outbreaks	1
Human cases	3
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0365
Outbreaks	1
Human cases	14
Hospitalized	3
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Other setting
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0244
Outbreaks	1
Human cases	25
Hospitalized	4
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff information	Bovine meat and raw eggs "Tatar"
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0417
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0439
Outbreaks	1
Human cases	8
Hospitalized	2
Deaths	0
Foodstuff implicated	Dairy products (other than cheeses)
More Foodstuff information	cream made from pasteurised milk and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0258
Outbreaks	1
Human cases	9
Hospitalized	7
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0297
Outbreaks	1
Human cases	3
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0385
Outbreaks	1
Human cases	6
Hospitalized	0
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	unknown
Contributory factors	
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0298
Outbreaks	1
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0302
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0230
Outbreaks	1
Human cases	34
Hospitalized	15
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Other setting
Place of origin of problem	unknown
Origin of foodstuff	Unknown
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	a wedding at the firehouse

S. Enteritidis

	Value
Code	0334
Outbreaks	1
Human cases	10
Hospitalized	4
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0330
Outbreaks	1
Human cases	31
Hospitalized	1
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0188
Outbreaks	1
Human cases	17
Hospitalized	15
Deaths	0
Foodstuff implicated	Dairy products (other than cheeses)
More Foodstuff information	cream made from pasteurised milk and raw eggs
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0390
Outbreaks	1
Human cases	4
Hospitalized	4
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0266
Outbreaks	1
Human cases	6
Hospitalized	0
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Same as setting
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0354
Outbreaks	1
Human cases	12
Hospitalized	3
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff information	Bovine meat and raw eggs "Tatar"
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0118
Outbreaks	1
Human cases	7
Hospitalized	7
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0304
Outbreaks	1
Human cases	22
Hospitalized	9
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Other setting
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0307
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Household
Place of origin of problem	unknown
Origin of foodstuff	unknown
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0274
Outbreaks	1
Human cases	3
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0100
Outbreaks	1
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0392
Outbreaks	1
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0322
Outbreaks	1
Human cases	49
Hospitalized	13
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Cross-contamination
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0332
Outbreaks	1
Human cases	28
Hospitalized	13
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Other setting
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0154
Outbreaks	1
Human cases	20
Hospitalized	0
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0426
Outbreaks	1
Human cases	5
Hospitalized	5
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Same as setting
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0197
Outbreaks	1
Human cases	60
Hospitalized	34
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Take-away or fast-food outlet
Place of origin of problem	Take-away
Origin of foodstuff	unknown
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	ice-cream shop

S. Enteritidis

	Value
Code	0371
Outbreaks	1
Human cases	5
Hospitalized	0
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	unknown
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0296
Outbreaks	1
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0346
Outbreaks	1
Human cases	3
Hospitalized	1
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0259
Outbreaks	1
Human cases	29
Hospitalized	5
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Other place of origin
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	nursing home

S. Enteritidis

	Value
Code	0277
Outbreaks	1
Human cases	34
Hospitalized	1
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0394
Outbreaks	1
Human cases	3
Hospitalized	1
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0126
Outbreaks	1
Human cases	7
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0162
Outbreaks	1
Human cases	4
Hospitalized	4
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Typhimurium

	Value
Code	0175
Outbreaks	1
Human cases	4
Hospitalized	4
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Household, domestic kitchen
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0427
Outbreaks	1
Human cases	33
Hospitalized	0
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Other setting
Place of origin of problem	Household, domestic kitchen
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0245
Outbreaks	1
Human cases	4
Hospitalized	4
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Other Agent (Mixed Outbreaks)	
Comment	

S. Infantis

	Value
Code	0232
Outbreaks	1
Human cases	78
Hospitalized	0
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Temporary mass catering (fairs, festivals)
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	unknown
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0090
Outbreaks	1
Human cases	4
Hospitalized	3
Deaths	0
Foodstuff implicated	Fish and fish products
More Foodstuff information	Fish and fish products coating of egg and breadcrumbs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail sale outlet
Origin of foodstuff	unknown
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0388
Outbreaks	1
Human cases	11
Hospitalized	5
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff information	Bovine meat and raw eggs "Tatar"
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Household
Place of origin of problem	Same as setting
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0284
Outbreaks	1
Human cases	10
Hospitalized	1
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff information	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0237
Outbreaks	1
Human cases	3
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

S. Enteritidis

	Value
Code	0353
Outbreaks	1
Human cases	12
Hospitalized	0
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

Table Verified Foodborne Outbreaks: detailed data for Staphylococcus

Please use CTRL for multiple selection fields

S. aureus

	Value
Code	0430
Outbreaks	1
Human cases	18
Hospitalized	12
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in implicated food
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Other place of origin
Origin of foodstuff	unknown
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	boarding school

S. aureus

	Value
Code	0454
Outbreaks	1
Human cases	22
Hospitalized	0
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in implicated food
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Other place of origin
Origin of foodstuff	unknown
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

S. aureus

	Value
Code	0227
Outbreaks	1
Human cases	41
Hospitalized	0
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence;Laboratory detection in human cases;Laboratory detection in implicated food
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	unknown
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	Escherichia coli, pathogenic; E.coli, pathogenic, unspecified
Comment	hotel - summer camp

S. aureus

	Value
Code	0204
Outbreaks	1
Human cases	3
Hospitalized	0
Deaths	0
Foodstuff implicated	Cheese
More Foodstuff information	soft chees made from raw sheep milk
Type of evidence	Analytical epidemiological evidence;Laboratory detection in implicated food
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm (primary production)
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

Table Verified Foodborne Outbreaks: detailed data for Unknown

Please use CTRL for multiple selection fields

Unknown

	Value
Code	0001
Outbreaks	1
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Same as setting
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Other Agent (Mixed Outbreaks)	
Comment	

Unknown

	Value
Code	0253
Outbreaks	1
Human cases	21
Hospitalized	21
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	unknown
Contributory factors	Other contributory factor
Other Agent (Mixed Outbreaks)	
Comment	

Unknown

	Value
Code	0260
Outbreaks	1
Human cases	6
Hospitalized	0
Deaths	0
Foodstuff implicated	Tap water, including well water
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Household
Place of origin of problem	Same as setting
Origin of foodstuff	Domestic
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

Unknown

	Value
Code	0254
Outbreaks	1
Human cases	52
Hospitalized	12
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff information	
Type of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Catering services, restaurant
Origin of foodstuff	unknown
Contributory factors	Unknown
Other Agent (Mixed Outbreaks)	
Comment	

Unknown

	Value
Code	0420
Outbreaks	1
Human cases	5
Hospitalized	4
Deaths	0
Foodstuff implicated	Dairy products (other than cheeses)
More Foodstuff information	ice cream
Type of evidence	Analytical epidemiological evidence;Laboratory detection in implicated food
Outbreak type	General
Setting	Take-away or fast-food outlet
Place of origin of problem	Take-away
Origin of foodstuff	Domestic
Contributory factors	Cross-contamination
Other Agent (Mixed Outbreaks)	
Comment	