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 2010

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 2010 .

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

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

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

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

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

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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

Most of data comes from local veterinary units. However, data concerning on the number of herds and livestock with reference to cattle, pigs, goats and sheep obtained the data from the Agency for Restructuring and Modernisation of Agriculture (ARMA). Data concerning to Gallus gallus and turkeys are suitable for these 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 supplied by the Local Veterinary Units for the year 2010.

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 control programme 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 2010, distribution of flocks of Gallus gallus is as follows:
the most flocks are in mazowieckie, wielkopolskie, kujawsko-pomorskie region.
For flocks of turkeys, herds are located in only five voivodeships: lubuskie, mazowieckie, opolskie, śląskie and warmińsko-mazurskie. The size of flocks hestitate between 3 to 6 thousand of animals.
For herds of cattle, regions with the largest livestock of cattle are in mazowieckie and podlaskie region.
In the region of wielkopolska is the largest pig population.
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.

Table Susceptible animal populations

* Only if different than current reporting year

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*
Cattle (bovine animals)	- in total	643741		1612387		6067488			
Deer	farmed - in total [1)]	388		206579		23304		394	
Ducks	- in total	1164		4365929		3548695		916	
Gallus gallus (fowl)	breeding flocks, unspecified - in total	1861				18077996			
	broilers	27566				616114230			
	laying hens	2820				65172710			
	- in total	32247		678531419		699364936			
Geese	- in total	1903		5452322		5177634		1477	
Goats	- in total	10191		96		41851			
Pigs	- in total	302747		19730521		19220811			
Reindeers	farmed - in total	3				21		3	
Sheep	- in total	7874		22507		232459			
Solipeds, domestic	horses - in total	89720		45147		372000		89225	

Table Susceptible animal populations

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*
Turkeys	breeding flocks, unspecified - in total	120				426302			
	meat production flocks	4163				29317941			
	- in total	4283		25704270		29744243			
Wild boars	farmed - in total	25		87614		268		25	
Chinchillas	farmed - in total - Survey	66		2220		24134		66	
Ferrets	- in total - Survey	1				90		1	
Foxes	farmed - in total - Survey	383		45555		120663		384	
Hares	- in total - Survey	1		2		100		1	
Minks	farmed - in total - Survey	209		385376		1652589		207	
Mouflons	- in total - Survey	9		155		143		9	
Ostriches	farmed - in total - Survey	96		2165		3970		90	
Other poultry	- in total - Survey (pheasant; quail; patridge)	84		72350		572516		78	
Rabbits	farmed - in total - Survey	119		455542		391595		131	
Raccoon dogs	- in total - Survey	2		120		325		2	

Table Susceptible animal populations

Comments:

[1)] 148870 roe deer were culled)

Footnote:

Difference between number of herds /flocks and number of holdings is due to the fact that in some holdings in 2010 were no animals. Have been shown because there are a list of registered entities.

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. 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. 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.

From 2009 was introduced SCP in broilers flocks and is continuing up to this day.

From 2010 were introduced National Salmonella control programme in breeding turkeys and fattening turkeys and is continuing up to this day

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.

Sampling frequency of minced meat and raw products
meat for determining the presence of Salmonella for small businesses:
- Not more than 250 kg per week-1 once every 4 weeks
- Not more than 500 kg - 1 every 3 weeks
- Not more than 1000 kg - 1 once every 2 weeks
-over 1000 kg - 1 once a week

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.

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

Bacterological sampling of carcassess is according to the Commission Decision of 8 June 2001 No. 2001/471/EC laying down rules for the regular checks on the general hygiene carried out by the operators in establishments according to Directive 64/433/EEC on health conditions for the production and marketing of fresh meat and Directive 71/118/EEC on health problems affecting the production and placing on the market of fresh poultry meat

At meat processing plant

In the case of raw meat products, the unit sample for examination is taken from the deep muscle layers, after singeing the skin or meat surface.
Five unit samples are taken for tests out of products manufactured on a given production day; these samples are considered to representative for the whole daily production.

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Other: PN-EN ISO-6579:2003

At meat processing plant

Other: PN-EN ISO-6579:2003

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.

County veterinarian for the proper implementation of the surveillance the entities producing foodstuffs of animal origin must make an analysis prepared within the framework of internal control plans sampling of foods for specified in Chapter 1 of Annex I Commission Regulation (EC) No 2073/2005 on the criteria for foodstuffs. Given the unify the process of conducting the analysis of planned research in the area district may propose LVU supervised entities
systematize the planning process for these studies. To this end:
1) LVU supervised entities can submit a form to complete containing the item in Part 1 of Regulation 2073/2005, establishing the requirements and scope for the introduction of the planned number of research products for which a specific requirement applies;
2) a supervised entity, using the possibility of transmitted form or another form containing this information, draw sampling plans / for tests performed in the laboratory amount (if any) and for tests performed in the laboratory outside (it is necessary to identify the name of the lab) /
each in two copies and submit to the district veterinarian for acceptance, these plans are drawn up under the control of conducted by internal actors;
3) LVU having a risk analysis before accepting
Plans shall verify:
a) whether all groups of products manufactured at the plant, for Microbiological criteria are set by the operator were included in the study plan;
b) whether the products covered by the study plan include a possible increase
Listeria monocytogenes;
c) whether the proposed number of tests will provide an appropriate assessment of
at the end of the production process, as well as the shelf- consumption, taking into account the definitions of the party, the shelf-life consumption, and a representative sample of the sample contained in Regulation 2073/2005;
4) after thorough analysis plan, the county veterinarian spotted
amendments or accepts it, without application of amendments;
5) district veterinarian who has accepted a plan submitted transmit a copy of the company, and the other remains in the files inspectorate of the establishment;
6) the test plan provides a reference in the course of inspection entity and is compared with the actually performed the tests control product safety;

Samples to conduct research to assess the presence of Salmonella security products such as minced meat and meat preparations, should be collected once a week, 5 samples, a frequency change to a smaller may occur:
1) for the first time, if in three consecutive 10 week cycles were obtained satisfactory test results / or after 30 weeks / or where is a national or regional salmonella control program;
2) a second time if the national or regional control program Salmonella is shown that the prevalence of Salmonella in animals purchased by the slaughterhouse is low;

If the number of unsatisfactory results obtained exceeds the value or has been notified of the alarm system RASFF plant returns to the previously implemented frequency.

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.

Sampling frequency of minced meat and raw products meat for determining the presence of Salmonella for small businesses:
- not more than 250 kg per week-1 once every 4 weeks
- not more than 500 kg - 1 every 3 weeks
- not more than 1000 kg - 1 once every 2 weeks
-over 1000 kg - 1 once a week

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

Methods of sampling (description of sampling techniques)

At meat processing plant

In the case of raw meat products, the unit sample for examination is taken from the deep muscle layers, after singeing the skin or meat surface.
Five unit samples are taken for tests out of products manufactured on a given production day; these samples are considered to representative for the whole daily production.

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Other: PN-EN ISO-6579:2003

At meat processing plant

Other: PN-EN ISO-6579:2003

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.

Recent actions taken to control the zoonoses

The DVO, or OV authorised by the DVO, issues administrative decisions and carries out the activities in accordance with the provisions of Regulation (EC) No 852/2004, Regulation (EC) No 853/2004, Regulation (EC) No 178/2002 and Regulation (EC) No 1774/2002.

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 2010, examinated 7300 units from bovine meat and products thereof and the results are satisfactory.

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

In order to unify the procedures carried out by the authorities of the Veterinary Inspection within the scope of determination of frequency of sampling to assess the process hygiene, products safety and execution of the requirements in the scope of official supervision conducted by the Veterinary Inspection, the Chief Veterinary Officer issued in 2009 the Instruction of the Chief Veterinary Officer No. GIWbż-500-7a/09 of 1 October 2009 on the code of conduct by carrying out supervision over studies conducted by operators producing foodstuffs of animal origin in the scope of their safety and control of production process hygiene.

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.
According to Instruction of the Chief Veterinary Officer No. GIWbż-500-7a/09 of 1 October 2009 on the code of conduct by carrying out supervision over studies conducted by operators producing foodstuffs of animal origin in the scope of their safety and control of production process hygiene, in order to determine the presence of Salmonella was created table determining the fundamental frequency of hygiene assessment of the production process in a small poultry slaughterhouses, depending on the number of slaughtered animals for the last year. Exceeding one of the values contained in the table results in necessity of a sampling frequency of twice.

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

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

The Commission Decision of 8 June 2001 No. 2001/471/EC laying down rules for the regular checks on the general hygiene carried out by the operators in establishments according to Directive 64/433/EEC on health conditions for the production and marketing of fresh meat and Directive 71/118/EEC on health problems affecting the production and placing on the market of fresh poultry meat remains in force in Poland.

It determines the number of samples and the frequency of sampling as follows:
Between 5 and 10 carcasses should be sampled on a single day during each week. The day of sampling should be changed each week to ensure that every day of the week is covered. The frequency for testing the carcass in low throughput premises and for establishments not working on a full-time basis should be determined by the official veterinarian based on his judgment on hygiene standards with respect to the slaughter at each plant.
A sample from four sites from each carcass should be taken half way through the slaughter day and before chilling commences. Carcass identification, date and time of sampling should be recorded for each sample. Samples should be pooled from the different sampling sites (i.e. rump, flank, brisket and neck) of the tested carcass before examination. Where unacceptable results are obtained and corrective actions

do not lead to better hygiene, further samples should not be pooled until dressing problems have been resolved.

At meat processing plant

In the case of raw meat products, the unit sample for examination is taken from the deep muscle layers, after singeing the skin or meat surface.
Five unit samples are taken for tests out of products manufactured on a given production day; these samples are considered to representative for the whole daily production.

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Other: PN-EN ISO-6579:2003

At meat processing plant

Other: PN-EN ISO-6579:2003

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 2010 the largest number of unit tested was fresh meat.

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%.

In 2010 the results of testing eggs and products thereof are satisfactory. Only 1 unit tested was positive.

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 2010 examineted 2114 units from turkey meat and products thereof. In the tested units not found S. Enteritidis or S. Typhimurium; all serotypes belongs to Salmonella unspecified.
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	Batch	25g	2720	310			310
Meat from broilers (Gallus gallus) - fresh - at processing plant	RVL	Batch	200g	55	5			5
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant	RVL	Batch	25g	17	0			
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at processing plant	RVL	Single	25g	194	0			
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM)	RVL	Single	10g	45	0			
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - at processing plant	RVL	Single	25g	1	0			
Meat from duck - at slaughterhouse	RVL	Single	25g	35	0			
Meat from geese - at slaughterhouse	RVL	Single	25g	10	2			2
Meat from turkey - fresh - at slaughterhouse	RVL	Batch	25g	997	103			103
Meat from turkey - meat preparation - intended to be eaten cooked - at processing plant	RVL	Batch	25g	335	27			27
Meat from turkey - meat products - cooked, ready-to -eat - at processing plant	RVL	Batch	25g	15	0			
Meat from turkey - meat products - raw but intended to be eaten cooked - at processing plant	private laboratory	Batch	300g	10	7			7

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 - mechanically separated meat (MSM)	RVL & private laboratory	Batch	10g	42	2			2
Meat from turkey - minced meat - intended to be eaten cooked - at processing plant	RVL	Single	25g	347	12			12
Meat from broilers (Gallus gallus) - at processing plant - Surveillance	private laboratory	Single	300g	5	3			3
Meat from broilers (Gallus gallus) - fresh - at cutting plant - Surveillance	RVL & private laboratory	Batch	25g	118	33			33
Meat from broilers (Gallus gallus) - fresh - at cutting plant - Surveillance - HACCP and own checks	RVL	Single	25g	1065	9	9		
Meat from broilers (Gallus gallus) - fresh - at cutting plant - Surveillance - official controls	RVL	Batch	25g	99	8	6		2
Meat from broilers (Gallus gallus) - fresh - at processing plant - Surveillance - official controls	RVL	Single	25g	30	0			
Meat from broilers (Gallus gallus) - fresh - at processing plant - domestic production - Surveillance	RVL	Batch	25g	313	22			22
Meat from broilers (Gallus gallus) - in total - Surveillance	RVL & private laboratory	Single	25g	158	42	1		41
Meat from broilers (Gallus gallus) - in total - Surveillance - official controls	RVL	Batch	25g	48	0			
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - Surveillance	RVL	Single	25g	229	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 broilers (Gallus gallus) - meat products - raw and intended to be eaten raw - at cutting plant - Surveillance - HACCP and own checks	RVL	Single	25g	2	0			
Meat from broilers (Gallus gallus) - meat products - raw and intended to be eaten raw - at processing plant - domestic production - Surveillance - HACCP and own checks	private laboratory	Single	300g	15	6			6
Meat from broilers (Gallus gallus) - meat products - raw and intended to be eaten raw - at processing plant - domestic production - Surveillance - official controls	RVL	Batch	25g	5	3			3
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls	RVL	Batch	10g	30	0			
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - at processing plant - Survey	NRL	Batch	10g	40	14			14
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - at processing plant - domestic production - Surveillance	RVL	Batch	25g	8	0			
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25g	24	0			
Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - unspecified - Surveillance - official controls	RVL	Single	25g	2	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 broilers (Gallus gallus) - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls	RVL	Single	25g	1	0			
Meat from duck - at processing plant - Surveillance	RVL	Single	25g	11	0			
Meat from geese - at processing plant - Surveillance	RVL & private laboratory	Single	25g	138	0			
Meat from turkey - fresh - at cutting plant - Surveillance - HACCP and own checks	private laboratory	Batch	25g	65	32			32
Meat from turkey - fresh - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Batch	25g	5	1			1
Meat from turkey - fresh - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25g	10	0			
Meat from turkey - fresh - at slaughterhouse - animal sample - meat - Surveillance - HACCP and own checks	RVL	Batch	10g	7	0			
Meat from turkey - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - HACCP and own checks	RVL	Single	25g	12	0			
Meat from turkey - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls	RVL	Batch	200g	5	0			
Meat from turkey - meat products - cooked, ready-to -eat - at processing plant - Surveillance - HACCP and own checks	RVL	Single	25g	12	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 - meat products - raw but intended to be eaten cooked - at processing plant - domestic production - Surveillance	RVL	Batch	25g	20	0			
Meat from turkey - mechanically separated meat (MSM) - at processing plant - Surveillance	RVL	Batch	200g	57	14			14
Meat from turkey - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls	RVL	Batch	25g	5	5			5
Meat from turkey - mechanically separated meat (MSM) - at processing plant - domestic production - Surveillance	private laboratory	Single	200g	10	4			4
Meat from turkey - mechanically separated meat (MSM) - at processing plant - domestic production - Surveillance - official controls	RVL	Batch	25g	25	10			10

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	Single	25ml	102	0			
Cheeses made from cows' milk - soft and semi-soft - at processing plant [2)]	RVL	Batch	25ml	23	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant [3)]	RVL	Single	25ml	4997	0			
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant [4)]	RVL	Single	25ml	625	0			
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant	NRL	Batch	25g	6	0			
Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant	NRL	Single	25g	24	0			
Dairy products (excluding cheeses) - butter - made from raw or low heat-treated milk - at processing plant [5)]	RVL	Batch	25ml	255	0			
Dairy products (excluding cheeses) - cream - made from raw or low heat-treated milk - at processing plant [6)]	RVL	Batch	25ml	61	0			
Dairy products (excluding cheeses) - ice-cream - at processing plant [7)]	RVl	Batch	25ml	60	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant [8)]	RVL/NRL	Batch	25ml	107	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 - intended for direct human consumption	RVL	Batch	25ml	3	0			
Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products [9)]	RVL	Batch	25ml	30	0			
Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	RVL	Single	25ml	24	0			
Cheeses made from cows' milk - at processing plant - Surveillance - HACCP and own checks	RVL	Single	25g	88	0			
Cheeses made from cows' milk - soft and semi-soft - at processing plant - Surveillance - official controls (single sample)	RVI	Single	25ml	45	0			
Cheeses made from cows' milk - soft and semi-soft - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25ml	350	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25ml	180	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls (15 batches sampled in frame of official, objective sampling)	RVL	Batch	25ml	16	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - domestic production - Monitoring - industry sampling	RVL	Single	25ml	165	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
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - unspecified - Surveillance - official controls	RVL	Single	25ml	34	0			
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25ml	30	0			
Cheeses made from cows' milk - soft and semi-soft - unspecified - Surveillance - official controls	RVL	Single	25ml	5	0			
Cheeses, made from unspecified milk or other animal milk - unspecified - at processing plant - Surveillance (ripened cheese) [10)]	RVL	Single	25g	35	0			
Cheeses, made from unspecified milk or other animal milk - unspecified - at processing plant - Surveillance - HACCP and own checks	RVL	Single	25g	65	0			
Cheeses, made from unspecified milk or other animal milk - unspecified - made from pasteurised milk - at processing plant - Surveillance - HACCP and own checks (unripened cheese)	RVL	Batch	25g	24	0			
Dairy products (excluding cheeses) - butter - made from raw or low heat-treated milk - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Batch	25ml	12	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) - butter - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - official controls (5 batches tested in frame of official, industry sampling)	RVL	Batch	25ml	60	0			
Dairy products (excluding cheeses) - butter - made from raw or low heat-treated milk - unspecified - Surveillance - official controls	RVL	Single	25ml	50	0			
Dairy products (excluding cheeses) - cream - at processing plant - Surveillance (cream 30%) [11)]	RVL	Single	25ml	45	0			
Dairy products (excluding cheeses) - cream - at processing plant - Surveillance - HACCP and own checks (skimmed milk concentrate)	RVL	Batch	25ml	1	0			
Dairy products (excluding cheeses) - cream - at processing plant - domestic production - Surveillance - HACCP and own checks (raw cream for production of milk products)	NRL	Single	25g	1	0			
Dairy products (excluding cheeses) - cream - made from raw or low heat-treated milk - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25ml	65	0			
Dairy products (excluding cheeses) - cream - made from raw or low heat-treated milk - at processing plant - domestic production - Monitoring - industry sampling	private laboratory & RVL	Single	25ml	13	0			
Dairy products (excluding cheeses) - cream - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25ml	149	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) - cream - made from raw or low heat-treated milk - unspecified - Surveillance - official controls	RVL	Single	25ml	38	0			
Dairy products (excluding cheeses) - dairy products, not specified - at processing plant - Surveillance [12)]	RVL	Batch	25ml	7	0			
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25ml	6	0			
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - domestic production - Surveillance	RVL	Single	25ml	209	0			
Dairy products (excluding cheeses) - ice-cream - at processing plant - Surveillance - official controls	RVL	Batch	25ml	31	0			
Dairy products (excluding cheeses) - ice-cream - at processing plant - domestic production - Monitoring - industry sampling	RVL	Single	25ml	9	0			
Dairy products (excluding cheeses) - ice-cream - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25ml	97	0			
Dairy products (excluding cheeses) - ice-cream - unspecified - Surveillance - official controls	RVL	Single	25g	103	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - Surveillance - HACCP and own checks	RVL	Single	30ml	30	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) - milk powder and whey powder - at processing plant - Surveillance - HACCP and own checks (batches 30g)	RVL	Batch	30g	14	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - Surveillance - HACCP and own checks (batches)	RVL	Batch	25ml	37	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - domestic production - Monitoring - industry sampling	RVL	Single	25ml	245	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25ml	2865	0			
Milk, cows' - at farm - animal sample - milk - Surveillance - HACCP and own checks	RVL	Single	25ml	3	0			
Milk, cows' - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25ml	13	0			
Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25ml	266	0			
Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Single	25ml	20	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 pasteurised/UHT products - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25ml	24	0			
Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products - at processing plant - domestic production - Surveillance - HACCP and own checks (25ml)	NRL	Single	25ml	3	0			

Comments:

[1] official sampling

[2] official, objective sampling

[3] industry sampling

[4] industry sampling

[5] industry sampling

[6] official sampling

[7] official, objective sampling

[8] official sampling

[9] official survaillence

[10] official sampling

[11] 21 samples tested in frame of industry sampling

[12] unfermented products

Table Salmonella in milk and dairy products

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	RVL	Batch	25g	4	0			
Egg products - at processing plant	RVL & private laboratory/ NRL	Single	25g	20	0			
Eggs - raw material (liquid egg) for egg products [1)]	RVL	Batch	25ml	10	0			
Eggs - table eggs - at packing centre [2)]	RVL	Batch	25g	10	0			
Eggs - table eggs - at retail [3)]	RVL	Batch	25g	3	0			
Fishery products, unspecified - at processing plant	private laboratory	Single	25g	328	0			
Live bivalve molluscs	NRL	Single	25g	100	0			
Molluscan shellfish - cooked - at processing plant [4)]	RVL	Batch	25g/200g	15	0			
Crustaceans - at packing centre - Surveillance - HACCP and own checks	RVL	Batch	25g	8	0			
Egg products - at processing plant - Surveillance - official controls	RVL	Batch	25g	6	0			
Egg products - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Single	25g	5	0			
Egg products - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	200g	1	0			
Eggs - raw material (liquid egg) for egg products - at processing plant - Surveillance	private laboratory	Single	25ml	1	1			1

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
Eggs - raw material (liquid egg) for egg products - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25ml	30	0			
Eggs - table eggs - at packing centre - Surveillance - HACCP and own checks	RVL	Batch	25g	88	0			
Fish - raw - at processing plant - Monitoring - industry sampling	private laboratory	Single	25g	23	0			
Fish - raw - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25g	21	0			
Fishery products, unspecified - at processing plant - Surveillance (gourmet products from fish)	RVL	Batch	10g/25g	15	0			
Fishery products, unspecified - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25g	12	0			
Fishery products, unspecified - at processing plant - Surveillance - official controls [5)]	RVL & private laboratory	Batch	25g	20	0			
Molluscan shellfish - cooked - at processing plant - Surveillance - official controls	RVL	Batch	25g	1	0			
Molluscan shellfish - cooked - at processing plant - Surveillance - official controls - objective sampling	RVL	Batch	25g	5	0			
Other food - at processing plant - domestic production - Surveillance - HACCP and own checks (mayonnaise)	RVL	Single	25g	56	0			
Other processed food products and prepared dishes - unspecified - at processing plant - Surveillance	RVL	Single	25g/10g	110	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
Other processed food products and prepared dishes - unspecified - at processing plant - Surveillance - official controls - objective sampling	RVL	Batch	10g	10	0			

Comments:

[1] official sampling

[2] official sampling

[3] official sampling

[4] 200g -5 single samples

[5] smoked

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	4957	4	2		2
Meat from bovine animals - fresh - at processing plant	RVL	Single	25g	17	0			
Meat from bovine animals - meat preparation - intended to be eaten raw - at processing plant		Single	10g	142	1			1
Meat from bovine animals - meat preparation - intended to be eaten cooked - at processing plant [1)]	RVL	Single	25g/10g	14	0			
Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant [2)]	RVL	Single	25g	85	0			
Meat from bovine animals - meat products - raw but intended to be eaten cooked - at processing plant	RVL	Single	10g	10	0			
Meat from bovine animals - minced meat - intended to be eaten raw - at processing plant [3)]	RVL	Batch	10g/25g	75	0			
Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant [4)]	RVL	Batch	10g/100g	20	0			
Meat from horse - fresh - at slaughterhouse [5)]	RVL	Batch	25g	5	0			
Meat from pig - fresh - at slaughterhouse	RVL & private laboratory	Batch	400cm2	2417	14			14
Meat from pig - fresh - at processing plant	RVL & private laboratory	Batch	25g	48	4			4
Meat from pig - meat preparation - intended to be eaten raw - at processing plant	RVL & private laboratory	Batch	25g/10g	820	7			7

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 pig - meat preparation - intended to be eaten cooked - at processing plant	RVL	Batch	25g/10g/200g	2668	44			44
Meat from pig - meat products - cooked, ready-to-eat - at processing plant	RVL	Single	25g	1809	4			4
Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant	RVL	Batch	10g	1687	13			13
Meat from pig - mechanically separated meat (MSM)	RVL	Single	10g	140	1	1		
Meat from pig - minced meat - intended to be eaten raw - at processing plant	RVL & private laboratory	Batch	10g	3113	39			39
Meat from sheep - fresh - at slaughterhouse [6)]	RVL	Batch	400cm2	1	0			
Other products of animal origin - gelatin and collagen	private laboratory	Single	25g	327	0			
Meat from bovine animals - fresh - at cutting plant - Surveillance - HACCP and own checks (25g-30 batches 10 g-1 batches)	RVL	Batch	25g/10g	31	0			
Meat from bovine animals - fresh - at cutting plant - Surveillance - official controls	RVL	Batch	25g	1	0			
Meat from bovine animals - fresh - at processing plant - Monitoring - industry sampling	private laboratory	Batch	25g	1	1			1
Meat from bovine animals - fresh - at processing plant - domestic production - Monitoring - industry sampling - objective sampling	private laboratory	Batch	10g	16	1			1

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Meat from bovine animals - fresh - at slaughterhouse - animal sample - carcass swabs - Surveillance	private laboratory	Single	400cm2	74	0			
Meat from bovine animals - fresh - at slaughterhouse - animal sample - carcass swabs - Surveillance - official controls	RVL	Batch	400cm2	220	0			
Meat from bovine animals - fresh - at slaughterhouse - animal sample - carcass swabs - Surveillance - official controls - objective sampling	RVL	Batch	400cm2	43	0			
Meat from bovine animals - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls	RVL	Single	25g	5	0			
Meat from bovine animals - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls (batches)	RVL	Batch	10g	1	0			
Meat from bovine animals - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls - objective sampling	RVL	Batch	10g	135	0			
Meat from bovine animals - meat preparation - intended to be eaten raw - at processing plant - Surveillance - HACCP and own checks	RVL	Single	25g	205	3			3
Meat from bovine animals - meat preparation - intended to be eaten raw - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	200g	5	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 - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	RVL	Batch	25g	5	0			
Meat from bovine animals - meat products - raw but intended to be eaten cooked - at processing plant - Survey	NRL	Single	25g	5	0			
Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant - Surveillance - HACCP and own checks	RVL	Single	10g	711	0			
Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls (single samples)	RVL	Single	10g	33	0			
Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls - objective sampling	private laboratory	Single	10g	225	1			1
Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Batch	10g	13	1			1
Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	200g	236	1			1
Meat from bovine animals - minced meat - intended to be eaten raw - at processing plant - Surveillance - official controls	RVL	Single	10g	5	5			5

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 raw - at processing plant - Surveillance - official controls (batches)	RVL	Batch	25g	5	0			
Meat from bovine animals - minced meat - intended to be eaten raw - at processing plant - Surveillance - official controls - objective sampling	RVL	Batch	25g	10	0			
Meat from bovine animals and pig - at processing plant - domestic production - Surveillance (industry and official sampling)	RVL	Batch	200g	629	11			11
Meat from bovine animals and pig - minced meat - at processing plant - Surveillance (industry sampling and official)	RVL	Single	10g	324	1			1
Meat from bovine animals and pig - minced meat - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	10g	15	0			
Meat from pig - fresh - at cutting plant - Surveillance	RVL	Batch	25g	2	0			
Meat from pig - fresh - at processing plant - Surveillance	RVL	Batch	200g	46	0			
Meat from pig - fresh - at processing plant - Survey	NRL	Single	25g	2	0			
Meat from pig - fresh - at slaughterhouse - Surveillance	RVL	Batch	25g	9093	25			25
Meat from pig - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - HACCP and own checks	RVL	Single	25g	22	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 pig - meat preparation - intended to be eaten raw - at processing plant - Surveillance (348 single samples - 25g 35 single samples - 10g)	RVL	Single	10g/25g	383	0			0
Meat from pig - meat products - cooked, ready-to-eat - at cutting plant - domestic production - Monitoring - industry sampling	RVL	Single	25g	10	0			
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	RVL	Single	25g	973	0			
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls - objective sampling (2 batches - 325 g)	RVL	Batch	25g/325g	122	0			
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Survey	NRL	Single	25g	6	0			
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Batch	25g	20	0			
Meat from pig - meat products - cooked, ready-to-eat - unspecified - Surveillance - official controls	RVL	Single	25g	33	0			
Meat from pig - meat products - raw but intended to be eaten cooked - at cutting plant - Monitoring - industry sampling	private laboratory	Single	10g	326	0			
Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant - Monitoring - industry sampling	private laboratory	Batch	10g	20	4			4

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 pig - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance [7)]	RVL	Single	25g	592	0			
Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls	RVL	Single	25g	96	3			3
Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant - domestic production - Surveillance - official controls	RVL	Batch	10g	20	0			
Meat from pig - mechanically separated meat (MSM) - at processing plant - domestic production - Surveillance - HACCP and own checks (25g - 20 batches 10g- 20 batches)	RVL & private laboratory	Batch	10g/25g	40	2			2
Meat from pig - mechanically separated meat (MSM) - at processing plant - domestic production - Surveillance - official controls	RVL	Batch	10g	10	2			2
Meat from pig - minced meat - intended to be eaten cooked - at processing plant - Survey	NRL	Single	25g	1	0			
Meat from pig - minced meat - intended to be eaten raw - at cutting plant - Monitoring	private laboratory	Single	10g	776	1			1
Meat from pig - minced meat - intended to be eaten raw - at processing plant - Surveillance - HACCP and own checks	private laboratory	Single	100g, 25g	85	3			3
Meat from pig - minced meat - intended to be eaten raw - at processing plant - Surveillance - official controls	RVL	Single	10g	146	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 pig - minced meat - intended to be eaten raw - at processing plant - domestic production - Surveillance	RVL	Single	25g/10g	383	0			
Meat from pig - minced meat - intended to be eaten raw - at processing plant - domestic production - Surveillance - official controls	RVL	Batch	200g	390	0			
Meat from wild game - birds - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25g	20	0			
Other food - at processing plant - domestic production - Surveillance (gourmet food)	RVL	Batch	200g	66	0			

Comments:

[1)] industry sampling- 10g -1 batch

[2)] industry sampling

[3)] industry sampling (10g -1 batch)

[4)] official sampling-objective (5 batches -200g)

[5)] officfial sampling

[6)] industry sampling

[7)] HACCP and own checks

Footnote:

information concerning to row meat from pig-minced meat- intended to be eaten raw-at processing plant-HACCP-
80 single samples/ 25g/ 1 S. unspecified
5 single samples/ 100g/2 S. unspecified

Table Salmonella in red meat and products thereof

information concernikg to meat preparation-intended to be eaten raw-processing plant: from 820 batches, 5 of them was tested from 10 g/ none of positive results

information concerning meat from pig-meat preparation-intended to be eaten cookedpat processing plant
85 batches from 25g
2577 batches from 10g
6 from 200g

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

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 2010, in adult flocks 35 positive were found for S. Enteritidis, S. Typhimurium, S. Infantis, S. Hadar and S. Virchow.

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

Percentages of serotype of Salmonella infection of adult breeding flocks of Gallus gallus, comprising at least 250 birds in 2010., amounted to 2.57%, which is to reduce the prevalence of Salmonella compared to previous years.

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

Control program/mechanisms

The control program/strategies in place

Broiler flocks

In the case of positive results of laboratory tests in the direction of Salmonella serotype of the program or to detect the inhibitory effect of the growth of bacteria in samples taken at the initiative of farmers in the species flock of broilers chicken (Gallus gallus) during the three weeks before the broilers to the slaughterhouse, the breeder is obliged to:
1) immediately, and notification to the district veterinarian;
2) leaving the broiler in place of permanent residence there, and not to introduce other poultry;
3) prevent unauthorized access to the house or places which are suspected of being infected broiler Salmonella covered by the scheme or their carcasses;
4) refrain from the dumping, elevating and dispose of meat, carcasses of broilers, feed, manure and litter originating from poultry and other objects which are in place to maintain broilers;
5) make available to the Veterinary Inspection of broilers to research and medical treatments and assistance in carrying out these tests and treatments;
6) the district veterinarian provide explanations and information that maybe important the detection of Salmonella and the sources of infection or to prevent its spread ;

7) provide the district veterinarian documentation of the herd, especially documentary evidence of purchase of chicks, litter, feed, animals and the sale of eggs and documentation related to the treatment records, etc.;
8) increase hygenic standards.

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

Salmonella serotypes covered by the program were found in 180 broiler flocks of 26 801 tested out of flocks.
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

In 2009 and 2010 the percentage of species flocks of broilers chicken (Gallus gallus), the program tested positive was less than 1%.

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.

Control program/mechanisms

The control program/strategies in place

Laying hens flocks

In the case of positive results of laboratory tests on samples takenby the food bussines operator in the laying flock, in the direction of Salmonella serotype of the program or be detected in samples taken at the initiative of food bussines operator bacterial growth inhibitory effect, the breeder is obliged to:
1) immediate notification to the district veterinarian;
2) leave the hens in their place of permanent residence there, and not to introduce other poultry;
3) prevent unauthorized access to the house or places where poultry are suspected of being infected with Salmonella or the programmable delay;
4) refrain from the dumping, and dispose of elevating meat and products derived from birds, their carcases, feed, manure and litter from poultry and other objects at the place of keeping laying hens;
5) make available to the Veterinary Inspection of poultry research and medical treatments and assistance in carrying out these tests and treatments;
6) the district veterinarian provide explanations and information that may be relevant to the detection of the disease and the sources of infection or to prevent the spread of disease or infection;
7) provide the district veterinarian documentation of the herd, in particular, documentary evidence of purchase of chicks, litter, feed, animals and the sale of eggs and documentation related to the treatment records, etc.;
8) increase hygenic standards.

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

D. Salmonella spp. in bovine animals

Monitoring system

Sampling strategy

There was no control programme for salmonella in bovine animals.

Type of specimen taken

Animals at slaughter (herd based approach)

Surface of carcasses

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
-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)

Flocks of turkeys are sampled on the initiative of the food business operator and the competent authority

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 3 weeks before slaughter.

Type of specimen taken

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

Other: feaces, dust

Meat production flocks: Before slaughter at farm

Other: feaces, dust

Methods of sampling (description of sampling techniques)

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

Description of sampling techniques are described in regulation 200/2010

Meat production flocks: Before slaughter at farm

and 584/2008

Diagnostic/analytical methods used

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

Bacteriological method: ISO 6579:2002

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

Bacteriological method: ISO 6579:2002

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

Bacteriological method: ISO 6579:2002

Meat production flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Control program/mechanisms

The control program/strategies in place

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

In the case of positive results of laboratory tests in the direction of the program serotype of Salmonella samples in a flocks of breeding turkeys at the initiative of food bus, or detection of bacterial growth inhibitory effect, the farmer is obliged to:

1) immediate notification to the district veterinarian;
2) leaving the turkeys in their place of permanent residence, and where other non-poultry;
3) prevent unauthorized access to buildings or places where there are turkeys suspected of being infected by Salmonella under the program or delay those turkeys;
4) refrain from the dumping, elevating and dispose of the meat, hatching eggs, turkey carcasses, feed, manure and litter from the turkey and other objects at the place of keeping turkeys;
5) make available to the Veterinary Inspection turkeys for research and medical treatments and assistance in carrying out these tests
and treatment;
6) the district veterinarian provide explanations and information that may be relevant to the detection of Salmonella and Salmonella infections chopsticks covered by the program, the source or sources of Salmonella infection or to prevent the spread of the disease or infection.
7) provide the district veterinarian documentation of the herd, especially invoices proving purchase of chicks, litter, feed, turkey and egg sales, and medical and veterinary records, etc.;
8) increase hygenic standards.

In case of positive results of the tests referred to above, the district veterinary officer:
1) an epizootic investigation;
2) take samples for laboratory testing in all flocks on the farm;
3) to establish the source of Salmonella infection of the herd, conduct research:
a) feed
b) water from their own farm;
4) requires an administrative decision:
a) maintaining separate turkeys on the holding in individual buildings or other places where they are kept,
b) the use of biocides for disinfection of hatching eggs immediately after harvest,
c) the use of biocidal products on the entrances to buildings and exits of these facilities, as well as entrances into the and departures from the holding
d) hatching eggs have been incubated in the hatching plant breeding in separate cameras, with the use of biocidal products authorized for the current disinfection during breeding, active against Salmonella;
5) prohibits an administrative decision:
a) the dumping of eggs hatching until the results of laboratory testing of all flocks on the farm,
b) the use of biocides, veterinary medicinal products
and measures to impede the isolation of Salmonella in the herd before the sampling official
c) movement of turkeys from the farm and to farm and flock
and the flock on the farm, unless the poultry breeder so requests, will be moved to the slaughterhouse, to the movement of turkey in order to be slaughtered in a slaughterhouse, a health certificate is placed about the origin of the flock, which obtained a positive result in the direction of Salmonella Enteritidis or Salmonella Typhimurium laboratory testing of samples taken at the initiative of farmers - a positive result was obtained in the direction of Salmonella Enteritidis or Salmonella Typhimurium, or where the inhibitory effect of bacterial growth,
d) movement from the holding of meat, turkey carcasses, feed, manure and litter originating from poultry and other objects which are in place to maintain turkey, without his consent.

In the case of positive results of laboratory tests on samples taken by district veterinary officer of the flock of turkey breeding in the direction of serotypes of Salmonella Enteritidis or Salmonella Typhimurium (other than the vaccine strains) or in cases where the officially drawn samples of the inhibitory effect of bacterial growth, the district veterinarian requires an administrative decision:
1) immediate slaughter or killing any farmed turkeys in the flock, except that the turkeys showing clinical signs of disease are always subject to the killing;

2) destruction all dead corpses and dead turkeys;
3) the destruction of hatching eggs and chicks have hatched;
4) the destruction of feed or their management, with measures to ensure full control of the inactivation of Salmonella in the case of positive results of laboratory analysis of feed samples for the presence of Salmonella;
5) the destruction or the management of litter, droppings and other objects at the place of keeping turkeys, which may have become contaminated in a manner which prevents contamination of Salmonella
6) under his supervision to carry out thorough cleansing and disinfection:
a) buildings in which he was detained poultry from infected flocks,
b) building environment referred to in point. and, vehicles used to transport and other items that may have become infected, under his supervision,
7) take other actions to improve hygenic conditions at the farm

Meat production flocks

In the case of positive results of laboratory tests in the direction of the program serotype of Salmonella samples in a herd of breeding turkeys at the initiative of farmers, or detection of bacterial growth inhibitory effect, the farmer is obliged to:
1) immediate notification to the district veterinarian;
2) leaving the turkeys in their place of permanent residence, and where other non-poultry;
3) prevent unauthorized access to buildings or places where there are turkeys suspected of being infected by Salmonella under the program or delay those turkeys;
4) refrain from the dumping, elevating and dispose of the meat, hatching eggs, turkey carcasses, feed, manure and litter from the turkey and other objects at the place of keeping turkeys;
5) make available to the Veterinary Inspection turkeys for research and medical treatments and assistance in carrying out these tests
and treatment;
6) the district veterinarian provide explanations and information that may be relevant to the detection of Salmonella and Salmonella infections chopsticks covered by the program, the source or sources of Salmonella infection or to prevent the spread of the disease or infection.
7) provide the district veterinarian documentation of the flock, especially invoices proving purchase of chicks, litter, feed, turkey and egg sales, and medical and veterinary records, etc.;
8) increase hygenic standards.

In case of positive results of the tests referred to above, the county veterinarian:
A) carry out an epizootic
2) take samples for diagnostic tests in all flocks on the farm
3) to establish the source of Salmonella infection, the herd sticks, carry out research:
a) feed
b) water from their own farm;
4) requires an administrative decision:
a) maintaining separate turkeys on the holding
in different livestock buildings or other places where it is maintained,
b) the use of biocidal products on the entrances and exits of buildings housing livestock, as well as the entrances and departures from the holding
5) prohibits an administrative decision:
a) the use of biocides, veterinary medicinal products
and measures to impede the isolation of Salmonella in the herd prior to sampling by the county veterinarian,
b) movement of turkeys from the farm and the farm and the herd and the herd on the farm unless poultry before the end of fattening
at the request of the breeder, will be moved to a slaughterhouse;

c) movement from the holding of meat, turkey carcasses, feed, manure and litter originating from poultry and other objects which are in place to maintain turkey, without his consent.

In the case of positive results of laboratory tests of samples taken by the district veterinarian of the flock of turkeys for slaughter in the direction of serotypes of Salmonella Enteritidis or Salmonella Typhimurium (other than the vaccine strains), or in case of detection in samples collected by the county veterinarian, the inhibitory effect of bacterial growth, county veterinarian in an administrative decision:
1) requires:
a) destruction of all carcasses of dead turkeys;
b) the destruction of feed or their management, with measures to ensure full control of the inactivation of Salmonella in the case of positive results of laboratory analysis of samples of feed in the direction of Salmonella;
c) conversion or destruction of the meat at a farm
and harvested from these turkeys
d) the destruction or the management of litter, droppings and other items that may have become contaminated
e) accurate cleansing and disinfection under his supervision, construction works,
where they were kept turkeys from an infected herd, the environment of these objects, vehicles used to transport turkeys and other items that may have become contaminated
f) take any other actions aimed at improving the conditions zoohigienicznych
on the farm;
2) prohibits the movement of turkeys from an infected herd of the farm and the herd infected at the farm and herd to herd on the farm, unless before the end of fattening turkeys, at the request of the breeder, to be shipped directly to the slaughterhouse in order to undergo slaughtered.

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

The year 2010 was the first year of the "National Programme for control of certain Salmonella serotypes in breeding turkeys. "
According to a report from the EFSA basic research carried out in flocks of turkeys, it was shown that in Poland, Salmonella Typhimurium was found in 16.3% of analyzed samples, and Salmonella enteritidis in 7% of samples tested.
These results were a reference to the Community objective of reducing the proportion of flocks infected in the first year of the program.
In the first year of operation there was no positive result in the direction of S. enteritidis and / or S. Typhimurium in breeding flocks of turkeys.

The year 2010 was the first year of the "National Programme for control of certain serotypes of Salmonella in fattening turkeys. "
In the first year of the program the percentage of flocks covered by the program turkeys tested positive was 0.7%.

Table Salmonella in breeding flocks of Gallus gallus

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	S. 1,4,[5],12:i:-
Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period [1)]	33	LVU	Flock	30	5	5					
Gallus gallus (fowl) - parent breeding flocks for egg production line - adult [2)]	208	LVU	Flock	207	9	7					
Gallus gallus (fowl) - grandparent breeding flocks for egg production line - during rearing period [3)]	4	LVU	Flock	4	0						
Gallus gallus (fowl) - grandparent breeding flocks for egg production line - adult [4)]	15	LVU	Flock	15	0						
Gallus gallus (fowl) - elite breeding flocks for egg production line - during rearing period [5)]	1	LVU	Flock	1	0						
Gallus gallus (fowl) - elite breeding flocks for egg production line - adult [6)]	1	LVU	Flock	1	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period [7)]	203	LVU	Flock	201	3	1			2		
Gallus gallus (fowl) - parent breeding flocks for broiler production line - adult [8)]	992	LVU	Flock	983	31	16		3	1	3	
Gallus gallus (fowl) - grandparent breeding flocks for broiler production line - adult [9)]	35	LVU	Flock	35	0						
Gallus gallus (fowl) - elite breeding flocks for broiler production line - during rearing period [10)]	2	LVU	Flock	2	0						
Gallus gallus (fowl) - elite breeding flocks for broiler production line - adult [11)]	12	LVU	Flock	12	2	2					
Gallus gallus (fowl) - parent breeding flocks, unspecified - day-old chicks [12)]	1	LVU	Flock	1	1	1					

Table Salmonella in breeding flocks of Gallus gallus

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	S. 1,4,[5],12:i:-
Gallus gallus (fowl) - parent breeding flocks, unspecified - during rearing period [13)]	243	LVU	Flock	242	0						
Gallus gallus (fowl) - parent breeding flocks, unspecified - adult [14)]	119	LVU	Flock	113	2	2					

	Salmonella spp., unspecified
Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period [1)]	
Gallus gallus (fowl) - parent breeding flocks for egg production line - adult [2)]	2
Gallus gallus (fowl) - grandparent breeding flocks for egg production line - during rearing period [3)]	
Gallus gallus (fowl) - grandparent breeding flocks for egg production line - adult [4)]	
Gallus gallus (fowl) - elite breeding flocks for egg production line - during rearing period [5)]	
Gallus gallus (fowl) - elite breeding flocks for egg production line - adult [6)]	
Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period [7)]	
Gallus gallus (fowl) - parent breeding flocks for broiler production line - adult [8)]	8

Table Salmonella in breeding flocks of Gallus gallus

	Salmonella spp., unspecified
Gallus gallus (fowl) - grandparent breeding flocks for broiler production line - adult [9)]	
Gallus gallus (fowl) - elite breeding flocks for broiler production line - during rearing period [10)]	
Gallus gallus (fowl) - elite breeding flocks for broiler production line - adult [11)]	
Gallus gallus (fowl) - parent breeding flocks, unspecified - day-old chicks [12)]	
Gallus gallus (fowl) - parent breeding flocks, unspecified - during rearing period [13)]	
Gallus gallus (fowl) - parent breeding flocks, unspecified - adult [14)]	

Comments:

[1)] sampling by industry and official sampling

[2)] industry and official sampling

[3)] industry and official sampling

[4)] industry and official sampling

[5)] industry and official sampling

[6)] industry and official sampling

[7)] industry and official sampling

[8)] industry and official sampling

Table Salmonella in breeding flocks of Gallus gallus

Comments:

[9)] industry and official sampling

[10)] industry and official sampling

[11)] industry and official sampling

[12)] industry and official samplling

[13)] industry and official sampling

[14)] industry and official sampling

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Ostriches	RVL	Flock	52	1			1
Partridges	RVL	Flock	1	0			
Pheasants	RVL	Flock	13	0			
Pigeons	RVL	Flock	526	32	2	28	2
Quails	RVL & private laboratory	Flock	25	0			
Birds - at farm - Survey [1)]	RVL	Animal	4	0			
Canary - at farm - Survey	RVL	Animal	1	0			
Ostriches - farmed - at farm - animal sample - faeces - Survey - national survey	RVL	Animal	10	0			
Ostriches - farmed - at farm - environmental sample - Survey	RVL	Flock	2	0			
Parrots - at zoo - Survey	RVL	Animal	10	1	1		
Partridges - at farm - animal sample - faeces - Survey	RVL	Animal	1	0			
Peafowl - at farm - Monitoring - official sampling	RVL	Animal	2	0			
Pheasants - at farm - Survey - national survey	RVL	Animal	6	0			
Pigeons - at farm - Survey	RVL	Animal	16	1		1	
Zoo animals, all - at zoo - Survey - national survey [2)]	RVL	Animal	8	1	1		

Table Salmonella in other birds

Comments:

[1)] falcon, hawk, eagle/ owner tests

[2)] eg. owl, swan, crane,

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Hadar	S. Infantis
Gallus gallus (fowl) - laying hens - during rearing period [1)]	355	LVU	Flock	341	5	4			1		
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling	2286	LVU	Flock	2275	160	94	8		30	3	14
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry	2286	LVU	Flock	2238							
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling	2286	LVU	Flock	1062	91	46	6		24	2	5
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - suspect sampling	2286	LVU	Flock	214	69	48	2		6	1	9
Gallus gallus (fowl) - broilers - before slaughter - at farm - Control and eradication programmes - official and industry sampling	27566	LVU	Flock	26801	248	184	7		26	2	14
Turkeys - breeding flocks, unspecified - during rearing period - at farm - Control and eradication programmes - official and industry sampling	54	LVU	Flock	43	5				5		
Turkeys - breeding flocks, unspecified - adult - at farm - Control and eradication programmes - official and industry sampling	66	LVU	Flock	66	9				9		
Turkeys - fattening flocks - before slaughter - at farm - Control and eradication programmes - official and industry sampling	4163	LVU	Flock	3434	177	10	14		142	2	1
Ducks - breeding flocks, unspecified	1164	LVU	Flock	9	9		5		3	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	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Hadar	S. Infantis
Ducks - meat production flocks	1164	LVU	Flock	69	69	10	18		39	1	
Geese - breeding flocks, unspecified	1903	LVU	Flock	6	6	4	1		1		
Geese - meat production flocks	1903	LVU	Flock	89	89	18	30		36	2	
Ducks - unspecified - at farm - Monitoring	1164	LVU	Flock	27	27	12	7		8		
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling (flocks not under the control programme; flocks consisting of a number of animials less than 250 units)	64	LVU	Flock	13	0						
Gallus gallus (fowl) - laying hens - during rearing period - flocks not under control programme - at farm - Control and eradication programmes - official and industry sampling [2)]	115	LVU	Flock	16	0						
Geese - unspecified - at farm - Monitoring	1903	LVU	Flock	19	19	4	9		4	1	1

	S. Virchow
Gallus gallus (fowl) - laying hens - during rearing period [1)]	
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling	11

Table Salmonella in other poultry

	S. Virchow
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry	
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling	8
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - suspect sampling	3
Gallus gallus (fowl) - broilers - before slaughter - at farm - Control and eradication programmes - official and industry sampling	15
Turkeys - breeding flocks, unspecified - during rearing period - at farm - Control and eradication programmes - official and industry sampling	
Turkeys - breeding flocks, unspecified - adult - at farm - Control and eradication programmes - official and industry sampling	
Turkeys - fattening flocks - before slaughter - at farm - Control and eradication programmes - official and industry sampling	8
Ducks - breeding flocks, unspecified	
Ducks - meat production flocks	1
Geese - breeding flocks, unspecified	
Geese - meat production flocks	3
Ducks - unspecified - at farm - Monitoring	

Table Salmonella in other poultry

	S. Virchow
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling (flocks not under the control programme; flocks consisting of a number of animials less than 250 units)	
Gallus gallus (fowl) - laying hens - during rearing period - flocks not under control programme - at farm - Control and eradication programmes - official and industry sampling [2)]	
Geese - unspecified - at farm - Monitoring	

Comments:

[1)] flocks under the control programme

[2)] flocks consisting of a number of animals less than 250 units

Footnote:

for laying hens in a row "laying hens-adult- control and eradication programmes- industry sampling", column "Total units positive for Salmonella" is empty because, if the ownership test comes out positive for Salmonella test is run, and confirm the official until after this study, the herd is considered to be infected or not. Positive results for this line are in two successive lines.

For ducks and geese has been amended number of flocks tested, because testing for salmonella, flocks of ducks and geese is done by farmers and local veterinarian is informed by the laboratory only on the results of positive and does not collect information about the flocks studied, in which the result came out negativ. So the number of flocks tested in this case is equal to the number of positive flocks.

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	RVL	Batch	25g	333	3			3
Compound feedingstuffs for cattle - process control	RVL	Batch	25g	73	3			3
Compound feedingstuffs for pigs - final product	RVL	Batch	25g	806	6			6
Compound feedingstuffs for pigs - process control	RVL	Batch	25g	70	2			2
Compound feedingstuffs for poultry (non specified) - final product	RVL	Batch	25g	494	4			4
Compound feedingstuffs for poultry (non specified) - process control	RVL	Batch	25g	14	0			
Compound feedingstuffs for poultry - laying hens - final product	RVL	Batch	25g	477	8			8
Compound feedingstuffs for poultry - laying hens - process control	RVL	Batch	25g	37	0			
Compound feedingstuffs for poultry - breeders - final product	RVL	Batch	25g	66	0			
Compound feedingstuffs for poultry - breeders - process control	RVL	Batch	25g	80	0			
Compound feedingstuffs for poultry - broilers - final product	RVL	Batch	25g	453	7			7

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 poultry - broilers - process control	RVL	Batch	25g	19	0			
Pet food - dog snacks (pig ears, chewing bones)	RVL	Batch	25g	158	18			18
All feedingstuffs - at zoo - Surveillance - HACCP and own checks (deer)	RVL	Batch	25g	1	0			
Compound feedingstuffs for fish - at farm - environmental sample - dust - Monitoring - official sampling - selective sampling (aquarium fish)	RVL	Batch	25g	13	1	1		
Compound feedingstuffs for fish - at feed mill - domestic production - Monitoring - official sampling - selective sampling	RVL	Batch	25g	1	0			
Compound feedingstuffs for fish - at feed mill - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25g	11	1			1
Compound feedingstuffs for fish - at feed mill - domestic production - Surveillance - official controls - convenience sampling	RVL	Batch	25g	3	0			
Compound feedingstuffs for fur animal - at farm - feed sample - Monitoring - official sampling - objective sampling	RVL	Batch	25g	1	0			
Compound feedingstuffs for fur animal - at farm - feed sample - Surveillance - HACCP and own checks	RVL	Batch	25g	3	0			
Compound feedingstuffs for fur animal - at feed mill - domestic production - Monitoring - industry sampling	RVL	Batch	25g	162	52			52

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 fur animal - unspecified - Surveillance	RVL	Batch	25g	12	0			
Compound feedingstuffs for horses - unspecified - Monitoring - official sampling - objective sampling	RVL	Batch	25g	2	0			
Compound feedingstuffs for poultry - pigeons - at farm - environmental sample - Surveillance - official controls - selective sampling	RVL	Batch	25g	2	0			
Compound feedingstuffs for poultry - pigeons - at feed mill - domestic production - Monitoring - official sampling - objective sampling	RVL	Batch	25g	1	0			
Compound feedingstuffs for poultry - pigeons - at feed mill - domestic production - Surveillance - official controls - convenience sampling	RVL	Batch	25g	2	0			
Compound feedingstuffs for poultry - pigeons - unspecified - Surveillance - HACCP and own checks (13 batches tested from feed mill and 1 from farm)	RVL	Batch	25g	14	0			
Compound feedingstuffs for rabbits - unspecified - Monitoring - official sampling - objective sampling	RVL	Batch	25g	2	0			
Compound feedingstuffs for reindeers - at farm - feed sample - Surveillance - HACCP and own checks	RVL	Batch	25g	1	0			
Compound feedingstuffs, not specified - at farm - feed sample - Monitoring - official sampling (ostriches)	RVL	Batch	25g	1	0			

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, not specified - at feed mill - Monitoring - official sampling (birds & rodents)	RVL	Batch	25g	13	0			
Compound feedingstuffs, not specified - at feed mill - domestic production - Surveillance - official controls - objective sampling (ostriches)	RVL	Batch	25g	1	0			
Pet food - at feed mill - Surveillance - official controls - convenience sampling	RVL	Batch	25g	1	0			
Pet food - at feed mill - domestic production - Monitoring - official sampling - objective sampling	RVL	Batch	25g	6	0			
Pet food - at feed mill - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25g	933	0			
Pet food - final product - at feed mill - Monitoring - official sampling - objective sampling	RVL	Batch	25g	3	0			
Pet food - final product - at feed mill - Surveillance - HACCP and own checks	RVL	Batch	25g	139	1			1

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	145	0			
Feed material of land animal origin - blood meal	RVL	Batch	25g	2	0			
Feed material of land animal origin - dairy products	RVL	Batch	25g	94	0			
Feed material of land animal origin - feather meal	RVL	Batch	25g	522	0			
Feed material of land animal origin - greaves	RVL	Batch	25g	7	1			1
Feed material of land animal origin - meat and bone meal	RVL	Batch	25g	1083	1			1
Feed material of land animal origin - poultry offal meal	RVL	Batch	25g	281	0			
Feed material of marine animal origin - fish meal	RVL	Batch	25g	177	9			9
Feed material of marine animal origin - other fish products	RVL	Batch	25g	1	0			

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of cereal grain origin - barley derived	RVL	Batch	25g	34	0			
Feed material of cereal grain origin - maize	RVL	Batch	25g	44	0			
Feed material of cereal grain origin - maize - derived	RVL	Batch	25g	50	0			
Feed material of cereal grain origin - other cereal grain derived	RVL	Batch	25g	125	0			
Feed material of cereal grain origin - wheat derived	RVl	Batch	25g	141	0			
Feed material of oil seed or fruit origin - linseed derived	RVL	Batch	25g	8	0			
Feed material of oil seed or fruit origin - other oil seeds derived	RVL	Batch	25g	3	0			
Feed material of oil seed or fruit origin - palm kernel derived	RVL	Batch	25g	1	0			
Feed material of oil seed or fruit origin - rape seed derived	RVL	Batch	25g	538	13			13
Feed material of oil seed or fruit origin - soya (bean) derived	RVL	Batch	25g	497	23			23
Feed material of oil seed or fruit origin - sunflower seed derived	RVL	Batch	25g	307	1			1
Other feed material - forages and roughages	RVL	Batch	25g	3	0			
Other feed material - other plants	RVL	Batch	25g	9	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	RVL	Batch	500g	10	0			
Silage - at feed mill - Monitoring - official sampling - objective sampling	RVL	Batch	500g	2	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
Sources of isolates	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Number of isolates in the laboratory				5			3		738			386	
Number of isolates serotyped	0	0	0	3	0	0	1	0	552	0	0	125	0
Number of isolates per serovar													
S. Agona									6			5	
S. Braenderup									3				
S. Derby									2				
S. Enteritidis									262			64	
S. Hadar									11			1	
S. Havana									2				

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
Sources of isolates	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Number of isolates in the laboratory				5			3		738			386	
Number of isolates serotyped	0	0	0	3	0	0	1	0	552	0	0	125	0
Number of isolates per serovar													
S. Indiana									3			2	
S. Infantis									84			13	
S. Isangi									5				
S. Kentucky													
S. Lexington									5				
S. Mbandaka									39			10	
S. Newport									19			3	
S. Orion									3				
S. Saintpaul													
S. Senftenberg									8			6	
S. Typhimurium				3					31			8	

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
Sources of isolates	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Number of isolates in the laboratory				5			3		738			386	
Number of isolates serotyped	0	0	0	3	0	0	1	0	552	0	0	125	0
Number of isolates per serovar													
S. Virchow							1		34			3	
S. Worthington									9				
Salmonella spp.									26			10	

Serovar	Other poultry			Ducks - at farm - Surveillance				Geese - at farm - Surveillance				Turkeys - at farm - Control and eradication programmes	
Sources of isolates	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Number of isolates in the laboratory							74				108	29	
Number of isolates serotyped	0	0	0	0	0	0	68	0	0	0	63	26	0
Number of isolates per serovar													
S. Agona												1	
S. Braenderup													
S. Derby												2	

Table Salmonella serovars in animals

Serovar	Other poultry			Ducks - at farm - Surveillance				Geese - at farm - Surveillance				Turkeys - at farm - Control and eradication programmes	
Sources of isolates	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Number of isolates in the laboratory							74				108	29	
Number of isolates serotyped	0	0	0	0	0	0	68	0	0	0	63	26	0
Number of isolates per serovar													
S. Enteritidis							28				14	1	
S. Hadar							2				5		
S. Havana													
S. Indiana							7				1		
S. Infantis											1		
S. Isangi													
S. Kentucky												8	
S. Lexington												1	
S. Mbandaka											2		
S. Newport							6				3		
S. Orion													

Table Salmonella serovars in animals

Serovar	Other poultry			Ducks - at farm - Surveillance				Geese - at farm - Surveillance				Turkeys - at farm - Control and eradication programmes	
Sources of isolates	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Number of isolates in the laboratory							74				108	29	
Number of isolates serotyped	0	0	0	0	0	0	68	0	0	0	63	26	0
Number of isolates per serovar													
S. Saintpaul												6	
S. Senftenberg													
S. Typhimurium							21				35		
S. Virchow											2	7	
S. Worthington													
Salmonella spp.							4						

Table Salmonella serovars in animals

Serovar	Turkeys - at farm - Control and eradication programmes	
Sources of isolates	Clinical	Surveillance
Number of isolates in the laboratory		184
Number of isolates serotyped	0	74
Number of isolates per serovar		
S. Agona		3
S. Braenderup		
S. Derby		1
S. Enteritidis		4
S. Hadar		2
S. Havana		
S. Indiana		
S. Infantis		7
S. Isangi		
S. Kentucky		20
S. Lexington		5

Table Salmonella serovars in animals

Serovar	Turkeys - at farm - Control and eradication programmes	
Sources of isolates	Clinical	Surveillance
Number of isolates in the laboratory		184
Number of isolates serotyped	0	74
Number of isolates per serovar		
S. Mbandaka		1
S. Newport		
S. Orion		
S. Saintpaul		14
S. Senftenberg		3
S. Typhimurium		
S. Virchow		14
S. Worthington		
Salmonella spp.		

Footnote:

salmonella spp rough

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		Other food - unspecified - Surveillance (other foods and food production environment)	
Sources of isolates	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Number of isolates in the laboratory				19		96						664
Number of isolates serotyped	0	0	0	10	0	27	0	0	0	0	0	184
Number of isolates per serovar												
S. Agona												5
S. Bredeney												1
S. Corvallis												1
S. Derby						1						4
S. Enteritidis				1		3						29
S. Goldcoast												2
S. Hadar						1						4
S. Indiana				1		2						4
S. Infantis				1		14						41

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		Other food - unspecified - Surveillance (other foods and food production environment)	
Sources of isolates	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Number of isolates in the laboratory				19		96						664
Number of isolates serotyped	0	0	0	10	0	27	0	0	0	0	0	184
Number of isolates per serovar												
S. Kentucky						1						15
S. Lexington												1
S. London												7
S. Mbandaka				1								2
S. Muenster												1
S. Newport						4						29
S. Saintpaul												11
S. Typhimurium				4								14
S. Virchow						1						8
Salmonella spp.				2								5

Table Salmonella serovars in food

Footnote:

salmonella spp. = S. 1,4,[5]:i:-

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

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

C. Antimicrobial resistance in Salmonella in foodstuff derived from pigs

Sampling strategy used in monitoring

Frequency of the sampling

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.

Additional information

E. Antimicrobial resistance in Salmonella in pigs

Sampling strategy used in monitoring

Frequency of the sampling

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

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

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

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

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

Table Antimicrobial susceptibility testing of Salmonella in Pigs

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

Table Antimicrobial susceptibility testing of Salmonella in Pigs

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

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

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

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

Salmonella	S. Enteritidis		S. Typhimurium		Salmonella spp.	
Isolates out of a monitoring program (yes/no)	yes		yes		yes	
Number of isolates available in the laboratory	123		8		25	
Antimicrobials:	N	n	N	n	N	n
Amphenicols - Chloramphenicol	84	0	8	8	17	0
Fluoroquinolones - Ciprofloxacin	84	37	8	8	17	0
Quinolones - Nalidixic acid	84	38	8	8	17	0
Trimethoprim	84	2	8	0	17	0
Sulphonamides - Sulfonamide	84	3	8	8	17	0
Aminoglycosides - Streptomycin	84	0	8	8	17	1
Aminoglycosides - Gentamicin	84	0	8	0	17	0
Penicillins - Ampicillin	84	3	8	8	17	0
Tetracyclines - Tetracycline	84	0	8	8	17	0
Fully sensitive	84	38	8	0	17	0
Resistant to 1 antimicrobial	84	42	8	0	17	1
Resistant to 2 antimicrobials	84	4	8	0	17	0
Resistant to 3 antimicrobials	84	0	8	1	17	0
Resistant to 4 antimicrobials	84	0	8	7	17	0
Resistant to >4 antimicrobials	84	0	8	0	17	0
Cephalosporins - Cefotaxim	84	0	8	0	17	0
Cephalosporins - Ceftazidim	84	0	8	0	17	0

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

Footnote:

Salmonella spp. = S. Infantis

Table Antimicrobial susceptibility testing of Salmonella spp. in All foodstuffs - unspecified - Monitoring (poultry (32) pork (10) mixed & unspecified (11);
S. Enteritidis (9); S. Infantis (9); S. Kentucky (6); S. Typhimurium (5), monophasic Typhimurium (1); S. Indiana (3); S. Virchow (3); S. Hadar (2), S. London (2), S. Cornvalis, S. Derby, S. Lexington) - quantitative data [Dilution method]

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

Salmonella spp.	All foodstuffs - unspecified - Monitoring (poultry (32) pork (10) mixed & unspecified (11); S. Enteritidis (9); S. Infantis (9); S. Kentucky (6); S. Typhimurium (5), monophasic Typhimurium (1); S. Indiana (3); S. Virchow (3); S. Hadar (2), S. London (2), S. Cornvalis, S. Derby, S. Lexington)																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	53																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	53	2									4	38	6	3			2						2	64
Tetracyclines - Tetracycline	8	53	27								21	5			1	1	7	18						1	64
Fluoroquinolones - Ciprofloxacin	0.064	53	35		4	14			14	8	6	1		3	3									0.01	8
Quinolones - Nalidixic acid	16	53	32										18	1	2			32						4	64
Trimethoprim	2	53	3							48	2						3							1	32
Sulphonamides - Sulfonamide		32	32												2	9	17	4						8	1024
Aminoglycosides - Streptomycin	16	53	28										7	2	16	6	10	6	6					2	128
Aminoglycosides - Gentamicin	2	53	8						1	19	22	3	1			7								0.3	32
Penicillins - Ampicillin	8	53	21							17	8	7					21							1	32
Cephalosporins - Cefotaxim	0.5	53	0				20	23	8	2														0.1	4
Cephalosporins - Ceftazidim	2	53	0						28	19	5	1												0.3	16

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

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

S. Enteritidis	Gallus gallus (fowl) - unspecified - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	326																								
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	230	0									58	163	9										2	64
Amphenicols - Florfenicol	16	230	0									114	109	7										2	64
Tetracyclines - Tetracycline	8	230	5								189	33	2	1		2	3							1	64
Fluoroquinolones - Ciprofloxacin	0.064	230	115		25	88	2	6	93	11	3	1		1										0	8
Quinolones - Nalidixic acid	16	230	111										114	4	1		2	109						4	64
Trimethoprim	2	230	5							224	1						5							1	32
Sulphonamides - Sulfonamide		230	230												4	57	143	13				13		8	1024
Aminoglycosides - Streptomycin	16	230	5									10	174	39	2		1	1	3					2	128
Aminoglycosides - Gentamicin	2	230	1						17	146	63	3				1								0.3	32
Penicillins - Ampicillin	8	230	18							67	139	6					18							1	32
Cephalosporins - Cefotaxim	0.5	230	0				123	96	11															0	4
Cephalosporins - Ceftazidim	2	230	0						212	17	1													0	16

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

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

S. Infantis	Gallus gallus (fowl) - unspecified - Monitoring																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	97																							
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	21	15									1	5					15						2	64
Amphenicols - Florfenicol	16	21	11									1	5		4	10		1						2	64
Tetracyclines - Tetracycline	8	21	16								5				5	11								1	64
Fluoroquinolones - Ciprofloxacin	0.064	21	16		1	4		1	15															0.01	8
Quinolones - Nalidixic acid	16	21	16										5					16						4	64
Trimethoprim	2	21	0							21														1	32
Sulphonamides - Sulfonamide		21	21													1	2					18		8	1024
Aminoglycosides - Streptomycin	16	21	17												4	1	3	9	4					2	128
Aminoglycosides - Gentamicin	2	21	0							1	18	2												0.3	32
Penicillins - Ampicillin	8	21	17							2	2						17							1	32
Cephalosporins - Cefotaxim	0.5	21	0				5	16																0	4
Cephalosporins - Ceftazidim	2	21	0							10	11													0	16

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

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

S. Mbandaka	Gallus gallus (fowl) - unspecified - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	49																								
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	33	0									1	22	10										2	64
Amphenicols - Florfenicol	16	33	0									1	29	3										2	64
Tetracyclines - Tetracycline	8	33	0								28	5												1	64
Fluoroquinolones - Ciprofloxacin	0.064	33	2		22	9			1	1														0.01	8
Quinolones - Nalidixic acid	16	33	1										32					1						4	64
Trimethoprim	2	33	0							33														1	32
Sulphonamides - Sulfonamide		33	33														22	8			1	2		8	1024
Aminoglycosides - Streptomycin	16	33	6											2	25	6								2	128
Aminoglycosides - Gentamicin	2	33	0							1	24	8												0.3	32
Penicillins - Ampicillin	8	33	2							25	6						2							1	32
Cephalosporins - Cefotaxim	0.5	33	2				6	24	1		1			1										0.1	4
Cephalosporins - Ceftazidim	2	33	2						10	21			1			1								0.3	16

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

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

S. Typhimurium	Gallus gallus (fowl) - unspecified - Monitoring																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	39																							
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	21	15									1	5					15						2	64
Amphenicols - Florfenicol	16	21	11									1	5		4	10		1						2	64
Tetracyclines - Tetracycline	8	21	16								5				5	11								1	64
Fluoroquinolones - Ciprofloxacin	0.064	21	16		1	4		1	15															0.01	8
Quinolones - Nalidixic acid	16	21	16										5					16						4	64
Trimethoprim	2	21	0							21														1	32
Sulphonamides - Sulfonamide		21	21													1	2					18		8	1024
Aminoglycosides - Streptomycin	16	21	17												4	1	3	9	4					2	128
Aminoglycosides - Gentamicin	2	21	0							1	18	2												0.3	32
Penicillins - Ampicillin	8	21	17							2	2						17							1	32
Cephalosporins - Cefotaxim	0.5	21	0				5	16																0.1	4
Cephalosporins - Ceftazidim	2	21	0						10	11														0.3	16

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

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

S. Virchow	Gallus gallus (fowl) - unspecified - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	37																								
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	31	0									11	20											2	64
Amphenicols - Florfenicol	16	31	0									19	12											2	64
Tetracyclines - Tetracycline	8	31	0								31													1	64
Fluoroquinolones - Ciprofloxacin	0.064	31	30		1			15	13	1	1													0.01	8
Quinolones - Nalidixic acid	16	31	30										1				9	21						4	64
Trimethoprim	2	31	0								31													1	32
Sulphonamides - Sulfonamide		31	31											1	4	22	3	1						8	1024
Aminoglycosides - Streptomycin	16	31	4											1	26	4								2	128
Aminoglycosides - Gentamicin	2	31	0							6	24	1												0.3	32
Penicillins - Ampicillin	8	31	1							25	5						1							1	32
Cephalosporins - Cefotaxim	0.5	31	0				28	3																0.1	4
Cephalosporins - Ceftazidim	2	31	0						30	1														0.3	16

Table Antimicrobial susceptibility testing of S. Kentucky in Turkeys - unspecified - Monitoring - quantitative data [Dilution method]

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

S. Kentucky	Turkeys - unspecified - Monitoring																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	28																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	26	1									6	19					1						2	64
Amphenicols - Florfenicol	16	26	1									8	17					1						2	64
Tetracyclines - Tetracycline	8	26	24								1	1				8	16							1	64
Fluoroquinolones - Ciprofloxacin	0.064	26	26						1					14	11									0.01	8
Quinolones - Nalidixic acid	16	26	26															26						4	64
Trimethoprim	2	26	0							26														1	32
Sulphonamides - Sulfonamide		26	26														2					24		8	1024
Aminoglycosides - Streptomycin	16	26	25										1			2	10	12	1					2	128
Aminoglycosides - Gentamicin	2	26	24							1		1			1	13	10							0.3	32
Penicillins - Ampicillin	8	26	25								1						25							1	32
Cephalosporins - Cefotaxim	0.5	26	1				2	21	2					1										0.1	4
Cephalosporins - Ceftazidim	2	26	1						1	21	3				1									0.3	16

Table Antimicrobial susceptibility testing of S. Saintpaul in Turkeys - unspecified - Monitoring - quantitative data [Dilution method]

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

S. Saintpaul	Turkeys - unspecified - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	20																								
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	15	0									2	10	2	1									2	64
Amphenicols - Florfenicol	16	15	0									2	11	2										2	64
Tetracyclines - Tetracycline	8	15	13								1		1		1	1	2	9						1	64
Fluoroquinolones - Ciprofloxacin	0.064	17	12		1	4		1	3	1	2	1	4											0.01	8
Quinolones - Nalidixic acid	16	15	9										5		1			9						4	64
Trimethoprim	2	15	7							7	1						7							1	32
Sulphonamides - Sulfonamide		15	15												1	2	2					10		8	1024
Aminoglycosides - Streptomycin	16	15	13												2	1	5		7					2	128
Aminoglycosides - Gentamicin	2	15	1							2	10	2				1								0.3	32
Penicillins - Ampicillin	8	15	13								2						13							1	32
Cephalosporins - Cefotaxim	0.5	15	0				6	7	2															0.1	4
Cephalosporins - Ceftazidim	2	15	0						7	7	1													0.3	16

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

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

S. Newport	Turkeys - unspecified - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	21																								
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	13	2										8	3				2						2	64
Amphenicols - Florfenicol	16	13	2									1	9	1				2						2	64
Tetracyclines - Tetracycline	8	13	13													1	2	10						1	64
Fluoroquinolones - Ciprofloxacin	0.064	13	9		2	2			1	4	2				2									0.01	8
Quinolones - Nalidixic acid	16	13	6										4		3			6						4	64
Trimethoprim	2	13	1							12							1							1	32
Sulphonamides - Sulfonamide		8	8														4	4						8	1024
Aminoglycosides - Streptomycin	16	13	5												8	3	1		1					2	128
Aminoglycosides - Gentamicin	2	13	1							3	8	1				1								0.3	32
Penicillins - Ampicillin	8	13	12									1					12							1	32
Cephalosporins - Cefotaxim	0.5	13	0				4	9																0.1	4
Cephalosporins - Ceftazidim	2	13	0						7	6														0.3	16

Table Antimicrobial susceptibility testing of Salmonella spp. in Pigs - unspecified - Survey (S. Typhimurium (2); S. London (2)) - quantitative data [Dilution method]

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

Salmonella spp.	Pigs - unspecified - Survey (S. Typhimurium (2); S. London (2))																								
Isolates out of a monitoring program (yes/no)	no																								
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	4	0									1	3											2	64
Amphenicols - Florfenicol	16	4	0									1	3											2	64
Tetracyclines - Tetracycline	8	4	0								4													1	64
Fluoroquinolones - Ciprofloxacin	0.064	4	0		2	2																		0.01	8
Quinolones - Nalidixic acid	16	4	0										4											4	64
Trimethoprim	2	4	0							4														1	32
Sulphonamides - Sulfonamide		4	4											1		1	2							8	1024
Aminoglycosides - Streptomycin	16	4	0												4									2	128
Aminoglycosides - Gentamicin	2	4	0							1	3													0.3	32
Penicillins - Ampicillin	8	4	0							1	3													1	32
Cephalosporins - Cefotaxim	0.5	4	0				3	1																0.1	4
Cephalosporins - Ceftazidim	2	4	0						4															0.3	16

Table Antimicrobial susceptibility testing of Other serovars in Cattle (bovine animals) - unspecified - Survey (S. Typhimurium (4); S. London; S. Infantis; S. Dublin) - quantitative data [Dilution method]

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

Other serovars	Cattle (bovine animals) - unspecified - Survey (S. Typhimurium (4); S. London; S. Infantis; S. Dublin)																							
Isolates out of a monitoring program (yes/no)	no																							
Number of isolates available in the laboratory	10																							
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Amphenicols - Chloramphenicol	16	7	0									2	4	1									2	64
Amphenicols - Florfenicol	16	7	0									4	3										2	64
Tetracyclines - Tetracycline	8	7	1								6							1					1	64
Fluoroquinolones - Ciprofloxacin	0.064	7	0		2	5																	0.01	8
Quinolones - Nalidixic acid	16	7	0										7										4	64
Trimethoprim	2	7	1							6							1						1	32
Sulphonamides - Sulfonamide		7	7												1	3	1					2	8	1024
Aminoglycosides - Streptomycin	16	7	3												4	1			2				2	128
Aminoglycosides - Gentamicin	2	7	0							1	4	2											0.3	32
Penicillins - Ampicillin	8	7	2							2	3						2						1	32
Cephalosporins - Cefotaxim	0.5	7	0				3	3	1														0.1	4
Cephalosporins - Ceftazidim	2	7	0						4	3													0.3	16

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

Test Method Used
Broth dilution

Standard methods used for testing
EN ISO 20776-1:2006

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol		16	
	Florfenicol		16	
Tetracyclines	Tetracycline		8	
Fluoroquinolones	Ciprofloxacin		0.064	
Quinolones	Nalidixic acid		16	
Trimethoprim	Trimethoprim		2	
Sulphonamides	Sulphonamides		256	
Aminoglycosides	Streptomycin		16	
	Gentamicin		2	
	Kanamycin		4	
Cephalosporins	Cefotaxim		0.5	
	Ceftazidim		2	
Penicillins	Ampicillin		8	

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

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

Test Method Used
Broth dilution

Standard methods used for testing
EN ISO 20776-1:2006

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol		16	
	Florfenicol		16	
Tetracyclines	Tetracycline		8	
Fluoroquinolones	Ciprofloxacin		0.064	
Quinolones	Nalidixic acid		16	
Trimethoprim	Trimethoprim		2	
Sulphonamides	Sulphonamides		256	
Aminoglycosides	Streptomycin		16	
	Gentamicin		2	
	Kanamycin		4	
Cephalosporins	Cefotaxim		0.5	
	Ceftazidim		2	
Penicillins	Ampicillin		8	

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

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

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

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol		16	
	Florfenicol		16	
Tetracyclines	Tetracycline		8	
Fluoroquinolones	Ciprofloxacin		0.064	
Quinolones	Nalidixic acid		16	
Trimethoprim	Trimethoprim		2	
Sulphonamides	Sulphonamides		256	
Aminoglycosides	Streptomycin		16	
	Gentamicin		2	
	Kanamycin		4	
Cephalosporins	Cefotaxim		0.5	
	Ceftazidim		2	
Penicillins	Ampicillin		8	

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

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.

Additional information

2010
Campylobacter coli in broiler meat- quantitative data:
fully sensitive N= 8
resistant to 1 antimicrobials N=0
resistant to 2 antimicrobials N=14
resistant to 3 antimicrobials N=27
resistant to 4 antimicrobials N=32
resistant to > 4 antimicrobials N=0

Campylobacter jejuni in broiler meat- quantitative data:
fully sensitive N= 8
resistant to 1 antimicrobials N=1
resistant to 2 antimicrobials N=15
resistant to 3 antimicrobials N=16
resistant to 4 antimicrobials N=6
resistant to > 4 antimicrobials N=0

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	NRL	Single	10g	65	0					
Meat from bovine animals - fresh - at slaughterhouse	NRL	Single	400cm2	40	6	3	3			
Meat from bovine animals - fresh - at processing plant [1)]	RVL	Single	25g	5	0					
Meat from pig	NRL	Single	10g	57	0					
Meat from pig - fresh - at slaughterhouse	NRL	Single	400cm2	68	19	15	4			
Meat from bovine animals - fresh - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25g	5	0					
Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant - Survey	NRL	Single	10g	1	0					

Comments:

[1)] official sampling

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	NRL	Single	400cm2	451	265	151	114			
Meat from broilers (Gallus gallus) - fresh - at processing plant	NRL	Single	10g	117	104	53	51			
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at processing plant [1)]	RVL	Batch	25g	1	1					1
Meat from duck - at slaughterhouse	NRL	Single	400cm2	23	10	8	2			
Meat from geese - at slaughterhouse	NRL	Single	400cm2	2	1		1			
Meat from broilers (Gallus gallus) - carcass - at processing plant - Survey	NRL	Single	10g	1	1					1
Meat from broilers (Gallus gallus) - fresh - at cutting plant - Surveillance - HACCP and own checks	RVL	Single	25g	1	0					
Meat from broilers (Gallus gallus) - fresh - unspecified - Survey	private laboratory	Single	25g	14	10					10
Meat from geese - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Single	25g	2	0					

Comments:

[1)] official sampling

2.2.4 Campylobacter in animals

A. Thermophilic Campylobacter in Gallus gallus

Monitoring system

Sampling strategy

In 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 2010 and 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) - unspecified - at AI station - Survey	RVL	Animal	96	0					
Zoo animals, all - at zoo - Survey	RVL	Animal	1	0					

2.2.5 Antimicrobial resistance in Campylobacter isolates

A. Antimicrobial resistance in Campylobacter jejuni and coli in cattle

Additional information

Campylobacter jejuni in bovine animals- quantitative data:
fully sensitive N= 3
resistant to 1 antimicrobials N=2
resistant to 2 antimicrobials N=1
resistant to 3 antimicrobials N=2
resistant to 4 antimicrobials and more N=0

Campylobacter coli in bovine animals- quantitative data:
resistant to 4 antimicrobials N=2

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 2010 and 2009 AMR in meat from broilers was tested.

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

Campylobacter jejuni in pigs -quantitative data:
fully sensitive N=0
resistant to 1 antimicrobials N=1
resistant to 2 antimicrobials N=1
resistant to 3 antimicrobials N=1
resistant to 4 antimicrobials and more N=0

Campylobacter coli in pigs -quantitative data:
fully sensitive N=2
resistant to 1 antimicrobials N=1
resistant to 2 antimicrobials N=4
resistant to 3 antimicrobials N=5
resistant to 4 antimicrobials N= 8
resistant to > 4 antimicrobials N=2

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

2010
Campylobacter jejuni in broilers- quantitative data:
fully sensitive N= 56
resistant to 1 antimicrobials N=22
resistant to 2 antimicrobials N=106
resistant to 3 antimicrobials N=55
resistant to 4 antimicrobials N=18
resistant to >4 antimicrobials N=0

Campylobacter coli in broilers- quantitative data:
fully sensitive N= 25
resistant to 1 antimicrobials N=11
resistant to 2 antimicrobials N=42
resistant to 3 antimicrobials N=90
resistant to 4 antimicrobials N=54
resistant to >4 antimicrobials N=9

Campylobacter jejuni in turkeys- quantitative data:
fully sensitive N= 3
resistant to 1 antimicrobials N=1
resistant to 2 antimicrobials N=4
resistant to 3 antimicrobials N=0
resistant to 4 antimicrobials N=0
resistant to >4 antimicrobials N=0

Campylobacter coli in turkeys- quantitative data:
fully sensitive N= 0
resistant to 1 antimicrobials N=0
resistant to 2 antimicrobials N=2
resistant to 3 antimicrobials N=6
resistant to 4 antimicrobials N=6
resistant to >4 antimicrobials N=1

Table Antimicrobial susceptibility testing of Campylobacter in Cattle (bovine animals)

Campylobacter	Campylobacter spp., unspecified		C. coli		C. jejuni	
Isolates out of a monitoring program (yes/no)			no		no	
Number of isolates available in the laboratory			2		8	
Antimicrobials:	N	n	N	n	N	n
Fluoroquinolones - Ciprofloxacin			2	2	8	4
Aminoglycosides - Gentamicin			2	0	8	0
Macrolides - Erythromycin			2	0	8	0
Tetracyclines - Tetracycline			2	2	8	2
Fully sensitive			0	0	3	0
Resistant to 1 antimicrobial			0	0	2	0
Resistant to 2 antimicrobials			0	0	1	0
Resistant to 3 antimicrobials			0	0	2	0
Resistant to 4 antimicrobials			2	0	0	0
Resistant to >4 antimicrobials			0	0	0	0
Aminoglycosides - Streptomycin			2	2	8	1

Table Antimicrobial susceptibility testing of Campylobacter in Pigs

Campylobacter	Campylobacter spp., unspecified		C. coli		C. jejuni	
Isolates out of a monitoring program (yes/no)			no		no	
Number of isolates available in the laboratory			22		3	
Antimicrobials:	N	n	N	n	N	n
Fluoroquinolones - Ciprofloxacin			22	15	3	3
Aminoglycosides - Gentamicin			22	0	3	0
Macrolides - Erythromycin			22	2	3	0
Tetracyclines - Tetracycline			22	16	3	1
Fully sensitive			2	0	0	0
Resistant to 1 antimicrobial			1	0	1	0
Resistant to 2 antimicrobials			4	0	1	0
Resistant to 3 antimicrobials			5	0	1	0
Resistant to 4 antimicrobials			8	0	0	0
Resistant to >4 antimicrobials			2	0	0	0
Aminoglycosides - Streptomycin			22	18	3	0

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

Campylobacter	Campylobacter spp., unspecified		C. coli		C. jejuni	
Isolates out of a monitoring program (yes/no)			no		no	
Number of isolates available in the laboratory			231		257	
Antimicrobials:	N	n	N	n	N	n
Fluoroquinolones - Ciprofloxacin			231	194	257	177
Aminoglycosides - Gentamicin			231	5	257	1
Macrolides - Erythromycin			231	5	257	1
Tetracyclines - Tetracycline			231	145	257	90
Fully sensitive			25	0	56	0
Resistant to 1 antimicrobial			11	0	22	0
Resistant to 2 antimicrobials			42	0	106	0
Resistant to 3 antimicrobials			90	0	55	0
Resistant to 4 antimicrobials			54	0	18	0
Resistant to >4 antimicrobials			9	0	0	0
Aminoglycosides - Streptomycin			231	83	257	23

Footnote:

broilers

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)			no		no	
Number of isolates available in the laboratory			81		46	
Antimicrobials:	N	n	N	n	N	n
Fluoroquinolones - Ciprofloxacin			81	73	46	38
Aminoglycosides - Gentamicin			81	0	46	0
Macrolides - Erythromycin			81	0	46	0
Tetracyclines - Tetracycline			81	50	46	21
Fully sensitive			8	0	8	0
Resistant to 1 antimicrobial			0	0	1	0
Resistant to 2 antimicrobials			14	0	15	0
Resistant to 3 antimicrobials			27	0	16	0
Resistant to 4 antimicrobials			32	0	6	0
Resistant to >4 antimicrobials			0	0	0	0
Aminoglycosides - Streptomycin			81	39	46	9

Table Antimicrobial susceptibility testing of Campylobacter in Turkeys - unspecified - Survey

Campylobacter	C. coli		C. jejuni	
Isolates out of a monitoring program (yes/no)	no		no	
Number of isolates available in the laboratory	15		8	
Antimicrobials:	N	n	N	n
Tetracyclines - Tetracycline	15	13	8	0
Fluoroquinolones - Ciprofloxacin	15	15	8	5
Aminoglycosides - Streptomycin	15	6	8	0
Aminoglycosides - Gentamicin	15	0	8	0
Fully sensitive	0	0	3	0
Resistant to 1 antimicrobial	0	0	1	0
Resistant to 2 antimicrobials	2	0	4	0
Resistant to 3 antimicrobials	6	0	0	0
Resistant to 4 antimicrobials	6	0	0	0
Resistant to >4 antimicrobials	1	0	0	0

Table Antimicrobial susceptibility testing of C. coli in Meat from broilers (Gallus gallus) - unspecified - Monitoring - quantitative data [Dilution method]

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

C. coli	Meat from broilers (Gallus gallus) - unspecified - Monitoring																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	81																								
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	81	50						28	3					50										
Fluoroquinolones - Ciprofloxacin	1	81	73				4	4					73												
Quinolones - Nalidixic acid		81	81										7	1			73								
Aminoglycosides - Streptomycin	4	81	39								3	38	1		39										
Aminoglycosides - Gentamicin	2	81	0						5	70	5	1													
Macrolides - Erythromycin	16	81	0							74	4	2	1												

Table Antimicrobial susceptibility testing of C. jejuni in Meat from broilers (Gallus gallus) - unspecified - Monitoring - quantitative data [Dilution method]

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

C. jejuni	Meat from broilers (Gallus gallus) - unspecified - Monitoring																							
Isolates out of a monitoring program (yes/no)	yes																							
Number of isolates available in the laboratory	46																							
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	46	21						23			2			21									
Fluoroquinolones - Ciprofloxacin	1	46	38				6	2				1	37											
Quinolones - Nalidixic acid		46	46									1	7	1		1	36							
Aminoglycosides - Streptomycin	2	46	9								36	1			9									
Aminoglycosides - Gentamicin	1	46	0					3	34	9														
Macrolides - Erythromycin	4	46	0							42	4													

Table Antimicrobial susceptibility testing of C. jejuni in Poultry, unspecified - unspecified - Survey (broilers) - quantitative data [Dilution method]

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

C. jejuni	Poultry, unspecified - unspecified - Survey (broilers)																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	257																								
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	255	88						134	21	9	3		1	87										
Fluoroquinolones - Ciprofloxacin	1	257	177				52	22	5	1		1	176												
Quinolones - Nalidixic acid		257	257									13	53	15		10	166								
Aminoglycosides - Streptomycin	2	257	23								204	30	2		21										
Aminoglycosides - Gentamicin	1	257	1					31	173	49	3			1											
Macrolides - Erythromycin	4	257	1							222	30	4				1									

Table Antimicrobial susceptibility testing of C. jejuni in Turkeys - unspecified - Survey - quantitative data [Dilution method]

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

C. jejuni	Turkeys - unspecified - Survey																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	8																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Tetracyclines - Tetracycline	2	8	0						8																
Fluoroquinolones - Ciprofloxacin	1	8	5				1	2					5												
Quinolones - Nalidixic acid		4	4									1	3												
Aminoglycosides - Streptomycin	2	8	0								7	1													
Aminoglycosides - Gentamicin	1	8	0							4	4														
Sulphonamides		8	8							8															

Table Antimicrobial susceptibility testing of C. coli in Poultry, unspecified - unspecified - Survey (broilers) - quantitative data [Dilution method]

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

C. coli	Poultry, unspecified - unspecified - Survey (broilers)																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	231																								
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	231	145						66	15	5				145										
Fluoroquinolones - Ciprofloxacin	1	231	194				25	11	1			2	192												
Quinolones - Nalidixic acid		231	231									1	30	5	1		194								
Aminoglycosides - Streptomycin	4	231	83								12	115	21	1	82										
Aminoglycosides - Gentamicin	2	231	5						15	176	32	3			5										
Macrolides - Erythromycin	16	231	5							179	34	10	2	1		5									

Table Antimicrobial susceptibility testing of C. coli in Pigs - unspecified - Survey - quantitative data [Dilution method]

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

C. coli	Pigs - unspecified - Survey																							
Isolates out of a monitoring program (yes/no)	no																							
Number of isolates available in the laboratory	22																							
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	22	16						6					2	14									
Fluoroquinolones - Ciprofloxacin	1	22	15				4	3					15											
Quinolones - Nalidixic acid		22	22										3	4			15							
Aminoglycosides - Streptomycin	4	22	18									2	2	1	17									
Aminoglycosides - Neomycin		22	22							14	8													
Macrolides - Erythromycin	16	22	2							14	6					2								

Table Antimicrobial susceptibility testing of C. jejuni in Pigs - unspecified - Survey - quantitative data [Dilution method]

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

C. jejuni	Pigs - unspecified - Survey																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	3																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Tetracyclines - Tetracycline	2	3	1						2						1										
Fluoroquinolones - Ciprofloxacin	1	3	3										3												
Quinolones - Nalidixic acid		3	3									1					2								
Aminoglycosides - Streptomycin	2	3	0								3														
Aminoglycosides - Gentamicin	1	3	0						3																
Macrolides - Erythromycin	4	3	0							3															

Table Antimicrobial susceptibility testing of C. coli in Cattle (bovine animals) - unspecified - Survey - quantitative data [Dilution method]

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

C. coli	Cattle (bovine animals) - unspecified - Survey																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	2																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Tetracyclines - Tetracycline	2	2	2												2										
Fluoroquinolones - Ciprofloxacin	1	2	2										2												
Quinolones - Nalidixic acid		1	1														1								
Aminoglycosides - Streptomycin	4	2	0							1	1														
Macrolides - Erythromycin	16	2	0								2														

Table Antimicrobial susceptibility testing of C. jejuni in Cattle (bovine animals) - unspecified - Survey - quantitative data [Dilution method]

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

C. jejuni	Cattle (bovine animals) - unspecified - Survey																								
Isolates out of a monitoring program (yes/no)	no																								
Number of isolates available in the laboratory	8																								
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Tetracyclines - Tetracycline	2	8	2						5		1				2										
Fluoroquinolones - Ciprofloxacin	1	8	4				1	1	2				4												
Quinolones - Nalidixic acid		8	8									1	2	2			3								
Aminoglycosides - Streptomycin	2	8	1								7				1										
Aminoglycosides - Gentamicin	1	8	0					2	6																
Macrolides - Erythromycin	4	8	0							8															

Table Antimicrobial susceptibility testing of C. coli in Turkeys - unspecified - Survey (N =15) - quantitative data [Dilution method]

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

C. coli	Turkeys - unspecified - Survey (N =15)																								
Isolates out of a monitoring program (yes/no)	no																								
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
Tetracyclines - Tetracycline	2	15	13						2						13										
Fluoroquinolones - Ciprofloxacin	1	15	15										15												
Quinolones - Nalidixic acid		15	15														15								
Aminoglycosides - Streptomycin	4	15	6									9			6										
Aminoglycosides - Gentamicin	2	15	0						1	13	1														
Macrolides - Erythromycin	16	15	2							10	2	1				2									

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

Test Method Used	Standard methods used for testing
Broth dilution	

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

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing
Broth dilution	

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

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

Test Method Used	Standard methods used for testing
Broth dilution	

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

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing
Broth dilution	

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

2.3 LISTERIOSIS

2.3.1 General evaluation of the national situation

A. Listeriosis general evaluation

History of the disease and/or infection in the country

Listeriosis is obligatory registrated disease as well as appears on the list zoonoses and zoonotic agents subject to monitoring according to the Act from 11 March 2004 on animal health protection and control of animal diseases.
The detailed scope of the method and date of the occurrence of information about listeriosis sets the regulation on the scope, method and timing ofto provide information on the occurrence of infectious diseases subject to control and registration , and the results of the monitoring of zoonoses and zoonotic agents and related antimicrobial resistance.

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

There is no monitoring programme for Listeria spp. realized in Poland. In previuos years 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.
In 2010 listeriosis were in cattle, goats, horse & fallow deer and chinchillas.

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 milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant [1)]	RVL	Batch	25g	1021	0	956		65		
Cheeses made from cows' milk - hard - made from raw or low heat-treated milk - at processing plant [2)]	RVL	Batch	25g	36	0	36				
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant [3)]	RVL	Batch	25g	400	0	347		74		
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant [4)]	RVL	Single	25g	163	2	83	2	80		
Cheeses made from goats' milk - hard - made from pasteurised milk - at processing plant [5)]	RVL	Batch	25g	3	0	3				
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant [6)]	RVL	Batch	25g	5	0	5		5		
Cheeses made from goats' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant [7)]	RVL	Batch	25g	5	0	5				
Dairy products (excluding cheeses) - butter - at processing plant	RVL	Single	25g	204	0	179		25		
Dairy products (excluding cheeses) - cream - at processing plant [8)]	RVL	Single	25g	437	0	420	0	17	0	0

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Milk, cows' [9)]	RVL	Single	25ml	1	0	1				
Milk, cows' - pasteurised milk - at processing plant	RVL	Batch	25ml	271	0	261		10		
Milk, cows' - raw - intended for direct human consumption [10)]	RVL	Single	25ml	6	0	6				
Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products [11)]	RVL	Single	25ml	4	1	4	1			
Milk, goats' - pasteurised - at retail [12)]	RVL	Single	25ml	1	0	1				
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - Surveillance - official controls	RVL	Single	25g	61	0	61				
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - Surveillance - official controls (batches)	RVL	Batch	25g	23	0	23				
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - Surveillance - official controls - objective sampling	RVL	Batch	25g	85	1	85	1			
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Single	25g	68	0	68				
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	25g	190	0	190				

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Cheeses made from cows' milk - hard - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	45	0	45				
Cheeses made from cows' milk - soft and semi-soft - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25g	206	0	162		44		
Cheeses made from cows' milk - soft and semi-soft - at processing plant - Surveillance - official controls	RVL	Batch	25g	119	0	92		27		
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls	RVL	Single	25g	69	0	62		7		
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls (1g)	RVL	Single	1g	40	0	35		5		
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	1g	61	0			61		
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - domestic production - Surveillance - HACCP and own checks (250g)	RVL	Batch	250g	28	0	20		8		
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - domestic production - Surveillance - official controls	RVL	Batch	25g	80	0	80				

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	75	0	75				
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - domestic production - Surveillance - official controls - objective sampling (250g)	RVL	Batch	250g	5	0	5				
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - unspecified - Surveillance - official controls	RVL	Single	25g	5	0			5		
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	43	0	43				
Cheeses made from cows' milk - soft and semi-soft - unspecified - Surveillance - official controls	RVL	Single	25g	34	0			34		
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	250g	1	0	1				
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	250g	10	0	10				

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Dairy products (excluding cheeses) - butter - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25g	391	0	381		10		
Dairy products (excluding cheeses) - butter - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Batch	25g	2	0	2				
Dairy products (excluding cheeses) - butter - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	50	0	50				
Dairy products (excluding cheeses) - cream - at processing plant - Monitoring - industry sampling	RVL &private laboratory	Single	25g/10g	38	0	38				
Dairy products (excluding cheeses) - cream - at processing plant - Surveillance (cream 30% official and industry sampling)	RVL	Single	25ml	20	0	20				
Dairy products (excluding cheeses) - cream - at processing plant - Surveillance - HACCP and own checks (creamer; single sample)	RVL	Single	25ml	6	0	6				
Dairy products (excluding cheeses) - cream - at processing plant - Surveillance - official controls (creamer; official objective sampling -5 batches)	RVL	Batch	25ml	10	0	10				
Dairy products (excluding cheeses) - cream - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	1g	45	0	10		35		
Dairy products (excluding cheeses) - cream - at processing plant - domestic production - Surveillance - official controls	RVL	Single	1g	45	0	25		20		

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Dairy products (excluding cheeses) - cream - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	33	0	33				
Dairy products (excluding cheeses) - cream - at processing plant - domestic production - Survey - national survey	RVL	Single	25g	34	0	34				
Dairy products (excluding cheeses) - cream - unspecified - Surveillance - official controls	RVL	Single	25g	38	0			38		
Dairy products (excluding cheeses) - dairy products, not specified - at processing plant - Surveillance - official controls (25g)	RVL	Batch	25g	15	0	15				
Dairy products (excluding cheeses) - dairy products, not specified - at processing plant - domestic production - Surveillance - HACCP and own checks (100g)	RVL	Batch	100ml	2	0			2		
Dairy products (excluding cheeses) - dairy products, not specified - at processing plant - domestic production - Surveillance - HACCP and own checks (powdered products; single sample)	RVL	Single	25g	447	0	425		22		
Dairy products (excluding cheeses) - dairy products, not specified - at processing plant - domestic production - Surveillance - HACCP and own checks (unfermented)	RVL	Single	25ml	10	0	10				
Dairy products (excluding cheeses) - dairy products, not specified - at processing plant - domestic production - Surveillance - official controls - objective sampling (powdered products)	RVL	Batch	25g	30	0	30				

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - Surveillance - official controls	RVL	Single	25g	78	0	44		34		
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Batch	25ml	236	0	194		42		
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - domestic production - Surveillance - HACCP and own checks (10g)	RVL	Single	10g	54	0	24		30		
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25ml	45	0	45				
Dairy products (excluding cheeses) - ice-cream - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Single	25g	3	0	3				
Dairy products (excluding cheeses) - ice-cream - at processing plant - domestic production - Surveillance (official and industry sampling)	RVL	Single	25g/1g	68	0	63		5		
Dairy products (excluding cheeses) - ice-cream - at processing plant - domestic production - Surveillance - official controls (65 batches tested in frame of objective sampling)	RVL	Batch	25g	185	4	85	4	100		
Milk from other animal species or unspecified - at processing plant - Surveillance (drinking milk single sample 1ml =15 industry sampling 20 samples)	RVL	Single	1ml/25ml	50	0	40		10		

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Milk, cows' - pasteurised milk - at processing plant - Surveillance - HACCP and own checks	RVL	Single	1ml	1	0			1		
Milk, cows' - pasteurised milk - at processing plant - domestic production - Monitoring - industry sampling	RVL	Single	25ml	22	0	22				
Milk, cows' - pasteurised milk - at processing plant - domestic production - Surveillance - official controls	RVL	Batch	25ml	56	0	46		10		
Milk, cows' - pasteurised milk - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25ml	45	0	45				
Milk, cows' - pasteurised milk - at processing plant - domestic production - Survey	RVL	Single	25ml	22	0	22				
Milk, cows' - raw - intended for direct human consumption - at processing plant - Surveillance - HACCP and own checks	RVL	Single	25ml	14	0	11		3		

Comments:

[1)] industry sampling

[2)] industry sampling

[3)] industry sampling

[4)] industry sampling

[5)] industry sampling

[6)] industry sampling

Table Listeria monocytogenes in milk and dairy products

Comments:

[7)] official sampling

[8)] 313 samples tested in frame of industry sampling

[9)] at farm

[10)] official sampling

[11)] industry sampling

[12)] industry sampling

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Crustaceans - unspecified - cooked - at processing plant	RVL	Batch	25g	5	1	5	1			
Fish - smoked - at processing plant	RVL	Single	25g/10g	169	21	139	21	30		
Infant formula		---								
Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant	RVL	Single	25g	145	3	105	3	40		
Meat from broilers (Gallus gallus) - fresh		---								
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant	RVl	Single	25g	731	2	370		361	2	
Meat from pig - meat products - cooked, ready-to-eat - at processing plant	RVL	Batch	25g	2383	34	1732	34	651		
Molluscan shellfish - cooked - at processing plant	RVL	Batch	25g	5	0	5				
Crustaceans - unspecified - Surveillance - official controls	RVL	Single	25g	2	0			2		
Eggs - at processing plant - Surveillance - official controls (eggs mass)	RVL	Batch	25g	5	0	5				
Eggs - table eggs - at processing plant - Survey	NRL	Single	25ml	5	0	5				
Fish - raw - at processing plant - Surveillance - HACCP and own checks	RVL	Single	25g	19	5	15	5	4		
Fish - raw - at processing plant - Surveillance - official controls	RVL	Batch	25g	5	0	5				

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Fish - raw - at processing plant - domestic production - Monitoring - industry sampling - objective sampling	private laboratory	Single	10g	40	1	8		32	1	
Fish - smoked - at processing plant - Surveillance - official controls	RVL	Single	25g	25	0	25				
Fish - smoked - at processing plant - Surveillance - official controls (1g)	RVL	Batch	1g	15	0			15		
Fish - smoked - at processing plant - Surveillance - official controls - objective sampling	RVI	Single	25g	60	6	60	6			
Fish - smoked - at processing plant - domestic production - Monitoring - industry sampling - objective sampling	private laboratory	Single	25g	154	8	154	5	154	1	2
Fish - smoked - at processing plant - domestic production - Surveillance - HACCP and own checks (250g)	RVL	Batch	250g	9	2	7	2	2		
Fish - smoked - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g/250g	30	0	30				
Fish - smoked - unspecified - Surveillance - official controls	RVL	Single	25g	16	0			16		
Fish - unspecified - frozen - at processing plant - domestic production - Monitoring - industry sampling - objective sampling	private laboratory	Single	10g	129	16	51	13	129	3	
Fishery products, unspecified - at processing plant - Surveillance (official and industry sampling)	RVL	Single	25g/1g	44	5	25	5	35		

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Fishery products, unspecified - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25g	20	5	5	5	20		
Fishery products, unspecified - at processing plant - domestic production - Monitoring - industry sampling - objective sampling	private laboratory	Single	25g	1827	338	1652	338	1186		
Meat from bovine animals - fresh - at cutting plant - Surveillance	RVL	Single	25g	10	5	10	5			
Meat from bovine animals - fresh - at processing plant - Monitoring - industry sampling	RVL	Single	25g	70	55	70	55			
Meat from bovine animals - fresh - at processing plant - Surveillance - official controls (25g)	RVL	Single	25g	10	3	10	3			
Meat from bovine animals - fresh - at slaughterhouse - animal sample - Surveillance - official controls - objective sampling	RVL	Single	25g	10	0	10				
Meat from bovine animals - meat products - raw and intended to be eaten raw - at processing plant - Surveillance - official controls - objective sampling	RVL	Batch	25g	40	0	40				
Meat from bovine animals and pig - meat products - at processing plant - domestic production - Surveillance (cooced; ready to eat; official and industry sampling)		Batch	250g	363	16	306	16	57		
Meat from broilers (Gallus gallus) - fresh - at cutting plant - Surveillance (official and industry sampling)	RVL	Single	25g/1g	43	1	30	1	13		
Meat from broilers (Gallus gallus) - fresh - at processing plant - Monitoring - industry sampling (batch)	private laboratory	Batch	25g	1	1	1	1			

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Meat from broilers (Gallus gallus) - fresh - at processing plant - Surveillance - HACCP and own checks	RVL	Single	25g	45	2	45	2			
Meat from broilers (Gallus gallus) - fresh - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Single	25g	2	0	2				
Meat from broilers (Gallus gallus) - fresh - at slaughterhouse - animal sample - meat - Surveillance - HACCP and own checks	RVL	Batch	25g	25	2	25	2			
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls	RVL	Single	25g	35	0	35				
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - HACCP and own checks	RVL	Single	1g	63	0	10		53		
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - HACCP and own checks (250g)	RVL	Batch	250g	10	0	6		4		
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	250g	306	0	306				
Meat from pig - fresh - at cutting plant - Surveillance (official (1 sample) and industry sampling)	RVL	Single	25g	3	0	1		2		
Meat from pig - fresh - at processing plant - Surveillance - HACCP and own checks	private laboratory	Single	200g/300g	22	14	22	14	12	7	5

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Meat from pig - fresh - at processing plant - Surveillance - HACCP and own checks (25g)	RVL	Single	25g	82	9	82	9			
Meat from pig - fresh - at processing plant - Surveillance - official controls	RVL	Single	25g	45	0	15	0	30		
Meat from pig - fresh - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Batch	10g/25g	82	5	14	3	68	2	
Meat from pig - fresh - at slaughterhouse - Surveillance - official controls - objective sampling	RVL	Single	10g/25g	46	10	44	10	2		
Meat from pig - fresh - at slaughterhouse - animal sample - Surveillance - HACCP and own checks	RVL	Single	25g	5	0	5				
Meat from pig - fresh - at slaughterhouse - animal sample - meat - Monitoring - industry sampling (25g)	private laboratory	Batch	25g	1	1	1	1			
Meat from pig - meat preparation - intended to be eaten cooked - at processing plant - domestic production - Surveillance (official and industry sampling)	RVL	Batch	25g/1g	18	5	18	5			
Meat from pig - meat preparation - intended to be eaten raw - at processing plant - domestic production - Surveillance (official & industry sampling)	RVL	Batch	25g	60	13	60	13			
Meat from pig - meat preparation - intended to be eaten raw - at processing plant - domestic production - Surveillance (official and industry sampling)	RVL	Batch	1g	70	0			70		

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Monitoring - industry sampling (25g)	private laboratory	Batch	25g	5	2	5	2			
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Surveillance (official and industry sampling)	RVL	Single	1g	1957	22	1205	17	752	1	5
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Surveillance - HACCP and own checks (single)	private laboratory	Single	180g/200g/250g	38	23	38	22	3	3	
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Surveillance - HACCP and own checks (single;10g)	RVL	Single	10g	1212	4	494	4	718		
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls (25g)	RVL	Single	25g	2175	44	1887	43	288	1	
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Survey	NRL	Single	25g	8	0	8				
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - domestic production - Monitoring - industry sampling	private laboratory	Single	25g/10g	91	2	59	2	32		
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - HACCP and own checks (1g)	RVL	Batch	1g	356	0	0	0	356	0	0
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - HACCP and own checks (250g)	RVL	Batch	250g	57	1	36	1	21		

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - official controls (45 batches tested in frame of official, objective sampling)	RVL	Batch	1g	155	5			155		5
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - official controls (batch)	RVL	Batch	25g	310	2	310	2			
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - official controls - objective sampling	RVL	Batch	25g	791	8	791	8			
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - domestic production - Surveillance - official controls - objective sampling (250g)	RVL	Batch	250g	65	17	65	17			
Meat from pig - meat products - cooked, ready-to-eat - unspecified - Surveillance - official controls	RVL	Single	25g	33	0			33		
Meat from pig - meat products - raw and intended to be eaten raw - at processing plant - Surveillance (official and industry sampling)	RVL	Batch	25g	55	23	55	23			
Meat from pig - meat products - unspecified, ready-to-eat - at processing plant - Surveillance - official controls - objective sampling (raw smoked)	RVL	Batch	25g	15	5	15	5			
Meat from turkey - meat products - cooked, ready-to-eat - at processing plant - Surveillance (official and industry sampling)	RVL	Batch	25g/1g	70	0	70				

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Other food - at processing plant - Surveillance (official & industry sampling; fish delikatessen products)	RVL	Single	25g	180	7	155	7	25		
Other food - at processing plant - Surveillance - HACCP and own checks (pork casing)	RVL	Single	25g	4	0	4				
Other food - at processing plant - Surveillance - official controls (lard)	RVL	Single	25g	10	0	10				
Other food - at processing plant - domestic production - Surveillance (fish delikatessen products)	RVL	Batch	25g/250g	85	2	61	2	24		
Other food - at processing plant - domestic production - Surveillance (meat delikatessen products; official & industry sampling)	RVL	Batch	25g/1g	154	0	96		58		
Other food - at processing plant - domestic production - Surveillance (meat delikatessen products; official and industry sampling)	RVL	Single	25g/1g	78	9	48	9	30		
Snails - at processing plant - Surveillance - HACCP and own checks	RVL	Batch	25g	10	0	10				

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)	RVL	Animal	1	1	1	
Gallus gallus (fowl)	RVL	Animal	28	0		
Goats	RVL	Animal	5	1	1	
Sheep	RVL	Animal	5	0		
Turkeys	RVL	Animal	5	0		
All animals - farmed - at farm - Survey [1)]	RVL	Animal	2	1		1
Chinchillas - farmed - at farm - Survey	RVL	Animal	7	2	1	1

Comments:

[1)] horse & fallow deer

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 [1)]	NRL	Single	25g	23	0			
Meat from pig - fresh	NRL	Single	25g	1	0			
Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant - Survey	NRL	Single	25g	18	1	1		
Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Survey	NRL	Single	25g	2	0			
Milk from other animal species or unspecified - at processing plant - Survey	NRL	Single	25ml	1	0			

Comments:

[1)] fresh at processing plant

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.

Methods of sampling (description of sampling techniques)

Animals at farm

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

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 2010 biochemical studies were perfomed in the direction of E. coli:
- in 60 dogs, including in 2 of them were found E. coli
- in 14 cats, including in 1 cases was found E. coli
- in 37 flocks of poultry, including in 30 of them were found E. coli.

In no case was found VT E. coli.

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
Poultry, unspecified	RVL	Flock	4	0				

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
According to Commission Decision of 23 April 2009 No 2009/342/EC amending Decision 2003/467/EC as regards the declaration that certain administrative regions of Italy are officially free of bovine tuberculosis, bovine brucellosis and enzootic-bovine-leukosis, that certain administrative regions of Poland are officially free of enzootic-bovine-leukosis and that Poland and Slovenia are officially free of bovine tuberculosis the whole territory of Poland is officialy tuberculosis free.

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%.

Additional information

It should be noted that according to the Decision of the Commission of 21 February 2006 amending the Decision 93/52/EEC in relation to declaration of Poland and some regions or provinces of Italy as

brucellosis-free (B.melitensis) and to the Decision 2003/467/EC in relation to declaration of some regions or provinces of Italy as free from bovine tuberculosis and enozootic bovine leucosis, Poland has been declared as a country officially free from ovine and caprine brucellosis caused by Brucella melitensis rod.

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

Tuberculosis monitoring involves annual pericutaneous tuberculin injections in 1/3 of cattle herds in the area of a district, in order to examine all cattle herds in the district within a period of three years. Tuberculin injections are performed in cattle aged over 6 weeks.

Frequency of the sampling

1x pericutaneus tuberculine injection in 1/3 of herd in one year period. Tuberculin injections are performed in cattle aged over 6 weeks.

Methods of sampling (description of sampling techniques)

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

Single and comparative tuberculin tests are performed using pericutaneus 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.IV.401/TBC-26/2006 of 28 July 2006. Screening for tuberculosis consists in pericutaneus tests (official tests are performed using PPD bovine and avian purified protein derivative of tuberculin, obtained from growth and analysis products of Mycobacterium bovis 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 monitoring for bovine tuberculosis.

Recent actions taken to control the zoonoses

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 (OJ 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 (OJ 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 (OJ 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.

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	RVI	Animal	1189	0			
Zoo animals, all	RVL	Animal	6	0			
Zoo animals, all - at zoo - Survey (antelopes & lemur)	NRL	Animal	9	9	8		1

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

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Routine tuberculin testing		Number of tuberculin tests carried out before the introduction into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/432/EEC)	Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological	Number of animals detected positive in bacteriological examination
	Herds	Animals	Number of herds	%	Number of herds	%	Interval between routine tuberculin tests	Number of animals tested			
Dolnośląskie	13324	124818	13323	99.99	1	.01	every three years	31513	0	7	5
Kujawsko-Pomorskie	32125	475374	32125	100	0	0	every three years	179306	60	17	0
Lubelskie	81480	433645	81480	100	0	0	every three years	120738	0	0	0
Lubuskie	4966	81730	4966	100	0	0	every three years	26636	0	0	0
Mazowieckie	119236	1150303	119230	99.99	6	.01	every three years	314320	47	53	13
Małopolskie	78000	246138	77993	99.99	7	.01	every three years	67355	12	27	16
Opolskie	9034	132434	9034	100	0	0	every three years	47739	0	0	0
Podkarpackie	52594	129187	52594	100	0	0	every three years	37632	0	0	0
Podlaskie	52592	900202	52591	100	1	0	every three years	272599	0	5	2
Pomorskie	17129	204623	17129	100	0	0	every three years	58233	0	0	0
Warmińsko-Mazurskie	25183	463621	25183	100	0	0	every three years	149584	0	2	0
Wielkopolskie	53449	873956	53447	100	2	0	every three years	265234	0	13	2

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

Zachodniopomorskie	7173	105678	7172	99.99	1	.01	every three years	44441	0	0	1
Łódzkie	63251	502169	63251	100	0	0	every three years	141143	52	1	0
Śląskie	21182	139232	21181	100	1	0	every three years	27425	0	0	1
Świętokrzyskie	51064	222101	51063	100	1	0	every three years	50497	0	1	1
Total : [1)]	681782	6185211	681762	100	20	0	N.A.	1834395	171	126	41

Comments:

[1)] N.A.

2.6 BRUCELLOSIS

2.6.1 General evaluation of the national situation

A. Brucellosis general evaluation

History of the disease and/or infection in the country

In 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.

According to Commission Decision of 5 August 2009 No 2009/600/EC amending Decision 2003/467/EC as regards the declaration that certain Member States and regions thereof are officially free of bovine brucellosis, the whole territory of Poland is officialy bovine brucellosis-free

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 2008 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 regulation of the Minister of Agriculture and Rural Development of 20 April 2005 on brucellosis eradication.

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

Status as officially free of bovine brucellosis during the reporting year

The entire country free

According to Commission Decision of 5 August 2009 No 2009/600/EC amending Decision 2003/467/EC as regards the declaration that certain Member States and regions thereof are officially free of bovine brucellosis, the whole territory of Poland is officialy bovine brucellosis-free

Free regions

The whole territory of Poland is officialy bovine brucellosis-free

Additional information

Poland have submitted to the Commission documentation demonstrating compliance with the appropriate conditions provided for in Directive 64/432/EEC as regards their whole territory.

Monitoring system

Sampling strategy

For bovine brucellosis – annual examination of blood samples collected from 1/3 cattle herds in the area of a district, in order to conduct examination of all herds in the district within a period of three years. This examination is performed for female cattle and bulls destined for reproduction, older than 12 months.

Frequency of the sampling

Each year samples are collected from 1/3 cattle herds in the area of a district so as to check all cattle herds within 3 years.

Type of specimen taken

Other: - blood
- milk
- swabs from the vagina, cervix or uterus
- discharge from the vagina, cervix or uterus
- clippings bearing in the case of miscarriage

Methods of sampling (description of sampling techniques)

And blood is collected from the animals, except for females:

1) pregnant cow in whom delivery should be made within two weeks;

2) in which the birth occurred within 2 weeks of sampling.

In the case of females who miscarry, for serological testing within 12 to 20 days after the miscarriage, the blood:

1) with the addition of a measure to prevent clotting (anticoagulant) for the detection of bacteria in the blood (bacteremia period);

2) without the addition of a measure to prevent clotting, for the detection of antibodies to brucellosis.

Blood samples collected for testing, using a single needle, into a sterile tube or Tubo-syringe. The tube is filled with in such a way that the blood flowed freely around the inner wall, until the filling tube 2 / 3 of its capacity. Blood donation is gradually cooled.
Freezing of blood.
Blood samples with anticoagulant should be mixed.

II milk samples collected after several strzyknięciach the jug, without additives, sterile tubes.
For serological testing milk from lactating cows, with milk collected from all quarters mentioned are mixed in equal amounts.
Not collected milk:

1) from among quarters of a clinical trial showing inflammatory changes;

2) from cows, in which birth occurred within 5-7 days of sampling.
Once downloaded, the milk is cooled.
Bacteriological tests in aseptically collected milk:

1) in the final phase of the milking - with each quadrant refers to a separate tube;

2) from among quarters of showing lesions.

III swabs from the vagina, cervix or uterus collected in sterile swab and transported in sterile test tubes.
Discharge from the vagina, cervix or uterus taken pipettes disposable or reusable sterile pipettes and then transported in sterile test tubes or other sterile glass containers.
Clippings bearings in the case of abortion is taken into sterile glass containers. Clippings from fresh membranes taken from 2 or 3 cotyledons showing lesions and borderline tissues showing such changes.

IV Fetuses collected in full, and then transports the wrapped and secured in such a way that they provide to the laboratory in the same state.

V The study can be downloaded ligated stomachs of aborted fetuses, and clippings of parenchymal organs.

VI Semen for research in order to isolate the bacteria are taken into sterile glass containers and then transported them in refrigerated.

VII The dead or killed animals collected clippings parenchymal organs, lymph nodes, in particular nadwymieniowe, stretch the uterine wall and other organs showin

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 regional veterinary 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 (OJ No. 69, item 625, as amended), vaccination of bovine animals is forbidden.

Control program/mechanisms

The control program/strategies in place

The regulation of the Minister of Agriculture and Rural Developmenton the eradication of brucellosis determine the principles of the State Veterinary Service on suspicion and then finding of brucellosis in cattle.
District Veterinary officer, after receiving notice of the suspicion of brucellosis, or for obtaining a positive or uncertain result, a study by the screening of animal infections, shall take immediate steps to confirm or rule out brucellosis, in particular:
1) shall:
a) an epidemiological investigation
b) a clinical examination of animals
c) an autopsy or post mortem inspection of animals, if necessary;
2) In any case, take samples for testing or laboratory tests

District veterinary officer at the time of waiting for test results or laboratory tests:
1) includes stock surveillance;
2) prohibits the movement of the herd and the herd, except for shipments for immediate slaughter;
3) requires the isolation of a herd of animals suspected of being infected with brucellosis;
4) inform the purchaser of milk to suspend recognition of the herd officially free of brucellosis.

Measures in case of the positive findings or single cases

District veterinary officer in case of brucellosis in cattle brucellosis outbreak sets and take steps to prevent further spread of this disease, in particular:
1) requires:
a) isolation of animals:
- suffer from brucellosis, until they are killed,
- suspected of being infected with brucellosis,
b) immediate killing of animals infected with brucellosis, no later than 30 days from the date on which the owner of the animal has been notified of the appointment of an outbreak of brucellosis,

c) removal and disposal of aborted fetuses and bearings, still-born animals and dead animals for brucellosis,
d) removal and decontamination of straw, bedding, furniture and other items that may carry brucellosis, which have been in contact with the animals sick or infectious materials derived from these animals,
e) the decontamination of manure and slurry
f) performance of laboratory tests for brucellosis;
2) prohibits:
a) the movement of animals to the herd and the herd, except for shipments for immediate slaughter,
b) re-use of pastures, which were housed animals infected with brucellosis, within 60 days from the date on which the animals were removed from the pasture;
3) immediately notify:
a) the state district sanitary inspector of the confirmation of brucellosis,
b) the purchaser of milk to withdraw recognition of herds officially free of brucellosis;
4) take samples from dead animals and send them to a reference laboratory.

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 (OJ 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

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

For ovine and caprine brucellosis – annual examination of blood samples collected from roe-bucks and rams older than 6 months and 25% of goats and sheep in reproductive age; in case of a herd of less than 50 goats and sheep in reproductive age blood samples collected from all animals in reproductive age are examined.
In a region recognised as officially free from ovine and caprine brucellosis, in the first year after recognition of the region as free from the disease, blood samples collected from at least 10% of goats and sheep aged over 6 months are examined. After that time the annual examination is conducted for at least 5% of goats and sheep aged over 6 months.

Frequency of the sampling

The annual examination is conducted for at least 5% of goats aged over 6 months.

Methods of sampling (description of sampling techniques)

Methods of sampling the same like in cattle.

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).

Control program/mechanisms

The control program/strategies in place

The regulation of the Minister of Agriculture and Rural Developmenton the eradication of brucellosis determine the principles of the State Veterinary Service on suspicion and then finding of brucellosis in goats.

District Veterinary officer, after receiving notice of the suspicion of brucellosis, or for obtaining a positive or uncertain result, a study by the screening of animal infections, shall take immediate steps to confirm or rule out brucellosis, in particular:

1) shall:

a) an epidemiological investigation

b) a clinical examination of animals

c) an autopsy or post mortem inspection of animals, if necessary;

2) In any case, take samples for testing or laboratory tests

District veterinary officer at the time of waiting for test results or laboratory tests:

1) includes stock surveillance;

2) prohibits the movement of the herd and the herd, except for shipments for immediate slaughter;

3) requires the isolation of a herd of animals suspected of being infected with brucellosis;

4) inform the purchaser of milk to suspend recognition of the herd officially free of brucellosis.

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) and in regulation of the Minister of Agriculture and Rural Development of 20 April 2005 on the eradication brucellosis.

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 2010 and 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

For ovine and caprine brucellosis – annual examination of blood samples collected from roe-bucks and rams older than 6 months and 25% of goats and sheep in reproductive age; in case of a herd of less than 50 goats and sheep in reproductive age blood samples collected from all animals in reproductive age are examined.
In a region recognised as officially free from ovine and caprine brucellosis, in the first year after recognition of the region as free from the disease, blood samples collected from at least 10% of goats and sheep aged over 6 months are examined. After that time the annual examination is conducted for at least 5% of goats and sheep aged over 6 months.

Frequency of the sampling

The annual examination is conducted for at least 5% of sheep aged over 6 months.

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).

Control program/mechanisms

The control program/strategies in place

The regulation of the Minister of Agriculture and Rural Developmenton the eradication of brucellosis determine the principles of the State Veterinary Service on suspicion and then finding of brucellosis in sheep.
District Veterinary officer, after receiving notice of the suspicion of brucellosis, or for obtaining a positive or uncertain result, a study by the screening of animal infections, shall take immediate steps to confirm or rule out brucellosis, in particular:
1) shall:
a) an epidemiological investigation
b) a clinical examination of animals
c) an autopsy or post mortem inspection of animals, if necessary;
2) In any case, take samples for testing or laboratory tests

District veterinary officer at the time of waiting for test results or laboratory tests:
1) includes stock surveillance;
2) prohibits the movement of the herd and the herd, except for shipments for immediate slaughter;
3) requires the isolation of a herd of animals suspected of being infected with brucellosis;
4) inform the purchaser of milk to suspend recognition of the herd officially free of brucellosis.

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 2010 and 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	RVL/NRL	Animal	7288	0				
Camels - zoo animals - at zoo - Control and eradication programmes - official and industry sampling	RVL	Animal	1	0				
Cattle (bovine animals) - unspecified - at farm - animal sample - Survey	RVL	Animal	66653	3	3			
Goats - at farm - Monitoring	RVL	Animal	730	0				
Other animals - unspecified - Survey (horse)	NRL	Animal	6	0				
Pigs - at farm - animal sample - blood - Survey [1)]	RVL	Animal	5	0				
Sheep - at farm - animal sample - Monitoring - official sampling	RVL	Animal	3969	0				
Zoo animals, all - at zoo - Control and eradication programmes - official and industry sampling	private laboratory/ NRL	Animal	28	0				

Comments:

[1)] survey in service center

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

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

Region	Total number of existing		Officially free herds		Infected herds		Surveillance			Investigations of suspect cases				
	Herds	Animals	Number of herds	%	Number of herds	%	Number of herds tested	Number of animals tested	Number of infected herds	Number of animals tested with serological blood tests	Number of animals positive serologically	Number of animals examined microbio logically	Number of animals positive microbio logically	Number of suspended herds
Polska	17678	268997	17678	100	0	0	4552	20501	0	0	0	0	0	0
Total : [1)]	17678	268997	17678	100	0	0	4552	20501	0	0	0	0	0	0

Comments:

[1)] N.A.

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

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Surveillance						Investigations of suspect cases								
							Serological tests			Examination of bulk milk			Information about			Epidemiological investigation					
	Herds	Animals	Number of herds	%	Number of herds	%	Number of bovine herds tested	Number of animals tested	Number of infected herds	Number of bovine herds tested	Number of animals or pools tested	Number of infected herds	Number of notified abortions whatever cause	Number of isolations of Brucella infection	Number of abortions due to Brucella abortus	Number of animals tested with serological blood tests	Number of suspended herds	Number of positive animals		Number of animals examined microbio logically	Number of animals positive microbio logically
																		Sero logically	BST		
Polska	681782	6185211	681745	99.99	0	0	165158	1197384	37	0	0	0	230	0	0	529	0	39	0	39	0
Total : [1)]	681782	6185211	681745	99.99	0	0	165158	1197384	37	0	0	0	230	0	0	529	0	39	0	39	0

Comments:

[1)] N.A.

2.7 YERSINIOSIS

2.7.1 General evaluation of the national situation

A. Yersinia enterocolitica general evaluation

History of the disease and/or infection in the country

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.

In 2010 the food has not be examinated in direction Yersinia.

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 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.

Table Yersinia in animals

	Source of information	Sampling unit	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
Zoo animals, all - at zoo - Control and eradication programmes - official and industry sampling	RVL	Animal	21	0						

Footnote:

Feaces samples and other clinical samples in the direction of the horizontal carrier were investigated a modified standard: BS EN ISO 10273:2005 "Microbiology of food and animal feeding stuffs - Horizontal method for detection of pathogenic Yersinia enterocolitica presumably.
From samples of organ cultures are performed directly on the appropriate medium for Yersinia.

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

Shall be sampled 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.
In 2010 there was no positive result for Trichinella in horses.

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 (OJ No. 213, item1342, 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 2010 and 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

Shall be tested 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.

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.
In 2010 from 19 730 521 carcasses tested only 12 were found to be positive.

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. In 2010 the number of positive results in pigs were smaller then in 2009. Also, in 2010, 1 positive results was found in badger and 3 in animals that are a combination of pig and wild boar.

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	100	5	2	3
Pigs	LVU	Animal	19730521	12		12
Pigs - breeding animals - unspecified - sows and boars		---				
Wild boars - wild	LVU	Animal	87614	565		565

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 echinococcus 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 213 item 1342 as amended),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 were found with echinoccocus.
According to information from NRL, we observed increase prevalence of Echinococcus.
In 2010, 157081 echinococcus were found in 19 730 521 pigs tested in slughterhouse.
Veterinarians have no obligation to send the samples from the slaughterhouse in order to check the Echinococcus species. From our own research carried out by the NRL that occurs mostly in swine E. granulosus.

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.
In 2010 samples from red foxes were taken from małopolskie, śląskie and opolskie voivodeships. type of samples was intestine.

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	Region	Units tested	Total units positive for Echinococcus	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Foxes	NRL	Animal	Polska	250	32		32	
Pigs	LVU	Animal	Polska	19730521	157081			157081

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

The information obtained from private veterinary laboratory and regional veterinary laboratory in 2010 in direction to toxoplsmosis only one cat was tested and the results was negative.
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
Cats	RVL	Animal	1	0	

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 1992, 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 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 1788 cases in wild animals (1506 cases in foxes).
- in 1995, 1973 cases of rabies in animals, including 1528 cases of wild animals (including 1280 in foxes).
-In 1996: 2527 cases in animals, including 2064 cases in wild animals (including 1779 cases in foxes).
- in 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 2224 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.
In 2010, the number of rabies cases increased again. In that year 151 cases of rabies were comfirmed, including 129 cases in wild animals (117 cases in foxes). In 2010, most rabies cases occurred in małopolskie region.

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 of 2008, No 213, item 1342 as amended), 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 (Journal of Laws 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. The vaccine can be administrated once a year in the territory of o voivodeship only if rabies has not been detected in the territory of the voivodeship and in the territory of adjacent voivodeships during two following years.
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 regulation of the Minister of Agriculture and Rural Development of 17 December 2004 determining certain diseases, manner for carrying out the control and scope of control tests of animals infections (Journal of Laws 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. To isolate and determine the strain of the rabies virus, brain tissue of the foxes living at large, in which rabies was confirmed by laboratory tests, is sent for tests.

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 (FAT),
- bone polishing of the mandible - test for the presence of tetracycline (TC),
- serum neutralisation test (RFFIT)- determination of the titre of rabies virus antibodies in the 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 laboratories as referred in article 25 of the Act of 29 January 2004 on Veterinary Inspection (Journal of Laws of 2010, No 112, item 744 as amended).
Applied tests:
- direct immunofluorescence (FAT test) of the brain imprints with monovalent anti-nucleocapside conyugate
- virus isolation on mice (MIT- mouse isolation test)
- virus isolation in the neuroblastoma cells cultures
- genotyping of isolates of rabies virus

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 foxes.

In 2009, 22 221 wild foxes were tested in monitoring framework.
In 2009, there were total 8 positive results of rabies including 6 cases in foxes and 2 cases in bats.
In 2010, 23 178 wild foxes were tested in monitoring framework.
In 2010, there were total 151 positive results of rabies, including 6 cases in dogs, 8 cases in cats, 4 cases in cattle, 1 case in horse, 2 cases in sheeps, 1 case in stray dog, 117 cases in foxes, 1 case in raccoon dog, 1 case in badger, 3 cases in martens, 1 case in roe deer and 6 cases in bats.

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 bitten 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 of 2008, No 213 item 1342 as amended), 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 (Journal of Laws of 2008, No 213 item 1342 as amended).
Detail procedure is described in the regulation of the Minister of Agriculture and Rural Development of 7 January 2005 on the eradication of rabies (Journal of Laws of 2005, No 13, item 103).

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 (Journal of Laws of 2008, No 213 item 1342 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, only 1 case in 2008 and no cases in 2009.
In 2010, 709 dogs were tested and 7 positive results were found (including 1 case in stray dog).

Table Rabies in animals

	Source of information	Sampling unit	Region	Units tested	Total units positive for Lyssavirus (rabies)	Lyssavirus, unspecified	Classical rabies virus (genotype 1)	European Bat Lyssavirus - unspecified	European Bat Lyssavirus 1 (EBL 1)
Badgers - wild	LVU	Animal	Polska	25	1	1			
Bats - wild	LVU	Animal	Polska	61	6	1			5
Cattle (bovine animals)	LVU	Animal	Polska	45	4	3	1		
Deer - wild - fallow deer	LVU	Animal	Polska	1	0				
Deer - wild - red deer	LVU	Animal	Polska	8	0				
Deer - wild - roe deer	LVU	Animal	Polska	248	1	1			
Dogs	LVU	Animal	Polska	518	6	4	2	0	
Dogs - stray dogs	LVU	Animal	Polska	191	1	1		0	
Foxes - wild	LVU	Animal	Polska	24158	117	117			
Marten - wild	LVU	Animal	Polska	113	3	1	2		
Pigs	LVU	Animal	Polska	2	0				
Raccoon dogs - wild	LVU	Animal	Polska	90	1	1			
Raccoons - wild	LVU	Animal	Lubuskie	1	0				
Sheep	LVU	Animal	Polska	4	2	2			
Solipeds, domestic	LVU	Animal	Polska	5	1	1			
Wild boars - wild	LVU	Animal	Polska	15	0				
Cats - unspecified - Survey (in case of suspicion)	LVU	Animal	Polska	973	8	4	4		

Table Rabies in animals

	Source of information	Sampling unit	Region	Units tested	Total units positive for Lyssavirus (rabies)	Lyssavirus, unspecified	Classical rabies virus (genotype 1)	European Bat Lyssavirus - unspecified	European Bat Lyssavirus 1 (EBL 1)
Other animals - unspecified - Control and eradication programmes - official sampling - suspect sampling (other domestic)	LVU	Animal	Polska	12	0				
Wild animals - unspecified - Control and eradication programmes - official sampling - suspect sampling (2 ferrets; 1 otter; 5 rats; 3 squirell; 2 moles; 1 hare ; 2 hedgehogs)	LVU	Animal	Polska	239	0				

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2011-12-21	Raccoon dogs - wild	Units tested	91	90
	Dogs	Units tested	537	518
2011-10-25	Dogs - stray dogs	European Bat Lyssavirus - unspecified	1	0
	Dogs - stray dogs	Lyssavirus, unspecified		1
	Dogs	Lyssavirus, unspecified		4
	Dogs	European Bat Lyssavirus - unspecified	4	0

2.12 STAPHYLOCOCCUS INFECTION

2.12.1 General evaluation of the national situation

2.13 Q-FEVER

2.13.1 General evaluation of the national situation

A. Coxiella burnetii (Q-fever) general evaluation

History of the disease and/or infection in the country

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 2010, in frame of monitoring, 5241 cattle were tested and in confirmatory tests 34 results were positive. However, 54 cases were generally positive.
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.

Recent actions taken to control the zoonoses

Accordance with the Minister of Agriculture and Rural Development of 17 December 2005 on determining the types of diseases, how to conduct monitoring and research of infection control animals, to control the incidence of Q fever annually examining blood samples are collected from cattle or sheep and goats in an area of the district, to be able to detect seroconversion from 95% probability, assuming that infection rates in the area of the district is 20%, to conduct tests may be used blood samples taken to control brucellosis in cattle, sheep and goats.
In the event of a miscarriage study includes all of the bovine, ovine and caprine animals in the herd if:
1. number of abortions in a herd numbering less than 100 animals was at least 2 or 3 a month each year,
2. number of abortions in a herd numbering at least 100 animals was over 4% of the population in a given year.
In the event referred to in point 2 in order to confirm the blood test is taken or a fragment bearing the female genital tract swabs, subjecting them to examination by culture or PCR.
Blood sampling is performed in cows and bulls for breeding over 12 months of age, as well as sheep and goats.

Additional information

Samples were tested using the complement fixation tests.

2.13.2 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)	RVU	Herd	5241	34	34
Sheep		---			

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 2010 no information from veterinary laboratory for research in direction of antimicrobial susceptibility E. coli. 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 2008 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 Cut-off values used for antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Animals

Test Method Used	Standard methods used for testing

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

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

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing

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

3.2 ENTEROCOCCUS, NON-PATHOGENIC

3.2.1 General evaluation of the national situation

3.2.2 Antimicrobial resistance in Enterococcus, non-pathogenic isolates

Table Cut-off values for antibiotic resistance of E. faecalis in Animals

Test Method Used	Standard methods used for testing

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

Table Cut-off values for antibiotic resistance of E. faecalis in Animals

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Oxazolidines	Linezolid		4	

Table Cut-off values for antibiotic resistance of E. faecalis in Feed

Test Method Used	Standard methods used for testing

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

Table Cut-off values for antibiotic resistance of E. faecalis in Food

Test Method Used	Standard methods used for testing

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

Table Cut-off values for antibiotic resistance of E. faecium in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Streptomycin		128	
	Gentamicin		32	
Amphenicols	Chloramphenicol		32	
Penicillins	Ampicillin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Streptogramins	Quinupristin/Dalfopristin		1	
Tetracyclines	Tetracycline		2	
Oxazolidines	Linezolid		4	

Table Cut-off values for antibiotic resistance of E. faecium in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Streptomycin		128	
	Gentamicin		32	
Amphenicols	Chloramphenicol		32	
Penicillins	Ampicillin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Streptogramins	Quinupristin/Dalfopristin		1	
Tetracyclines	Tetracycline		2	
Oxazolidines	Linezolid		4	

Table Cut-off values for antibiotic resistance of E. faecium in Food

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Streptomycin		128	
	Gentamicin		32	
Amphenicols	Chloramphenicol		32	
Penicillins	Ampicillin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Streptogramins	Quinupristin/Dalfopristin		1	
Tetracyclines	Tetracycline		2	
Oxazolidines	Linezolid		4	

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1 ENTEROBACTER SAKAZAKII

4.1.1 General evaluation of the national situation

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 2010, 57 samples were tested, all results were satisfactory.
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)]	RVL	Single	25g	56	0	56			
Fish - Fishery products which have undergone enzyme maturation treatment in brine		---							
Fish - Fishery products from fish species associated with a high amount of histidine - not enzyme maturated - at processing plant - Surveillance - HACCP and own checks [2)]	RVL	Single	25g	1	1		1		

Comments:

[1)] canned products

[2)] smoked products

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.
From 2007 to 2010 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 Staphylococcal enterotixins. However results of samples examined in Regional Veterinary Laboratories are available.

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

There was no positive results for Staphyloccocal.

Additional information

In 2010 in no case was found Stapylococcal enterotoxins in food.

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)]	RVL	Batch	25g	10	0
Cheeses made from cows' milk - hard - made from raw or low heat-treated milk		---			
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk	NRL	Single	25g	22	0
Dairy products (excluding cheeses) - milk powder and whey powder	NRL	Single	25g	3	0
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - domestic production - Survey	NRL	Single	25g	3	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - domestic production - Monitoring - industry sampling	NRL	Single	25g	6	0

Comments:

[1)] official 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 2010 a total of 454 foodborne outbreaks were notified, involving 6183 cases (1111 hospitalized) of which 121 were reported detailed dataset. Compared to 2009 the total number of outbreaks increased. In food-borne outbreak for which were reported detailed information, affected 1474 people resulting in 359 hospitalization.
The general outbreaks constituted 62% of outbreaks, while the household outbreaks - 38%. However, the general outbreaks included 89% of human cases, 67,4% of all admitted to hospitals.

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

In 2010, the causative agent was unknown in 30,8 % of all reported outbreaks. As in previous years the most frequent causative agent identified in the outbreaks was Salmonella species, the predominant serotype was S. Enteritidis (41,4 % of the all reported outbreaks and 80,2 % of the “strong evidence” outbreaks). The others Salmonella serotypes like S. Thypimurium and S. Infantis were associated with 3,5 % of the all reported outbreaks.
Viruses were the second most common group of causative agents. Noroviruses causes 10,8 % of all reported outbreaks and 21 % of cases. 8,4% of reported outbreaks caused by rotavirus.
Moreover four outbreaks of trichinellosis were registered (47 cases, 19hospitalize).
As in 2009, salmonellosis the “strong evidence” outbreaks were mainly related to the consumption of eggs (30 %). 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 place of problem was reported for 97,5 % of all “strong evidence” outbreaks.
The most commonly reported place of problem origin was farm (primary productions) - 40,5 % of the “strong evidence” outbreak and were mainly identified in Sallmonella outbreaks, involving 361 a total of cases, 42,7 % of this cases were admitted to hospital. The “household” were linked with 37,2 % of the “strong evidence” outbreaks.
Residential institution (nursing home, prison, boarding schools) only accounted for 8,3% of “strong evidence” outbreaks, however these were often large involving 459 cases.

Evaluation of the severity and clinical picture of the human cases

In 2010, about 24,4% % of persons ill in all detailed reported outbreaks needed hospitalization. In all outbreaks were affected 330 children under 14 years, 37,3 % of them were hospitalized. The acute diarrhea predominate in the clinical picture of human cases in outbreaks caused by Salmonella (89,8 % of cases). In outbreaks caused by Staphylococcus aureus vomiting occurred in 65,6% of affected people. In 2010, one fatal case was reported related to the food-borne outbreaks (in the results of mushroom toxin).

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

	Number of outbreaks	Human cases	Hospitalized	Deaths	Strong evidence Number of Outbreaks	Total number of outbreaks
Salmonella - S. Typhimurium	3	14	5	0	1	4
Salmonella - S. Enteritidis	81	526	162	0	91	172
Salmonella - Other serovars	7	33	20	0	5	12
Campylobacter	5	20	4	0	0	5
Listeria - Listeria monocytogenes	0	0	0	0	0	0
Listeria - Other Listeria	0	0	0	0	0	0
Yersinia	0	0	0	0	0	0
Escherichia coli, pathogenic -	0	0	0	0	0	0
Bacillus - B. cereus	0	0	0	0	0	0
Bacillus - Other Bacillus	0	0	0	0	0	0
Staphylococcal enterotoxins	0	0	0	0	7	7
Clostridium - Cl. botulinum	0	0	0	0	3	3
Clostridium - Cl. perfringens	0	0	0	0	0	0
Clostridium - Other Clostridia	2	16	2	0	0	2
Other Bacterial agents - Brucella	0	0	0	0	0	0

	Number of outbreaks	Human cases	Hospitalized	Deaths	Strong evidence Number of Outbreaks	Total number of outbreaks
Other Bacterial agents - Shigella	1	7	1	0	1	2
Other Bacterial agents - Other Bacterial	3	63	2	0	3	6
Parasites - Trichinella	0	0	0	0	4	4
Parasites - Giardia	0	0	0	0	0	0
Parasites - Cryptosporidium	0	0	0	0	0	0
Parasites - Anisakis	0	0	0	0	0	0
Parasites - Other Parasites	0	0	0	0	0	0
Viruses - Norovirus	47	1209	133	0	1	48
Viruses - Hepatitis viruses	0	0	0	0	0	0
Viruses - Other Viruses	38	133	82	0	0	38
Other agents - Histamine	0	0	0	0	0	0
Other agents - Marine biotoxins	0	0	0	0	0	0
Other agents - Other Agents	6	14	14	0	5	11
Unknown agent	140	2674	327	0	0	140

Table Foodborne Outbreaks: detailed data for Clostridium

Please use CTRL for multiple selection fields

C. botulinum

	Value
FBO Code	0330
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

C. botulinum

	Value
FBO Code	0097
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Pig meat and products thereof
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

C. botulinum

	Value
FBO Code	0314
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Pig meat and products thereof
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Other Bacterial agents

Please use CTRL for multiple selection fields

Other

	Value
FBO Code	0315
Number of outbreaks	1
Number of human cases	23
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Tap water, including well water
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Water distribution system
Origin of food vehicle	Unknown
Contributory factors	Water treatment failure
Mixed Outbreaks (Other Agent)	
Additional information	

Other

	Value
FBO Code	0209
Number of outbreaks	1
Number of human cases	33
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Tap water, including well water
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Water distribution system
Origin of food vehicle	Unknown
Contributory factors	Water treatment failure
Mixed Outbreaks (Other Agent)	
Additional information	

Other

	Value
FBO Code	0452
Number of outbreaks	1
Number of human cases	16
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Residential institution (nursing home, prison, boarding school)
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Shigella - S. flexneri

	Value
FBO Code	0108
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Fruit, berries and juices and other products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Travel abroad
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	cases imported from India

Table Foodborne Outbreaks: detailed data for Other agents

Please use CTRL for multiple selection fields

Mushroom toxins

	Value
FBO Code	0409
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	3
Number of deaths	1
Food vehicle	Other foods
More food vehicle information	Mushrooms
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Mushroom toxins

	Value
FBO Code	0411
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	Mushrooms
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Mushroom toxins

	Value
FBO Code	0429
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	Mushrooms
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Mushroom toxins

	Value
FBO Code	0470
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	Mushrooms
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Mushroom toxins

	Value
FBO Code	0191
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	Mushrooms
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Parasites

Please use CTRL for multiple selection fields

Trichinella - Trichinella spp., unspecified

	Value
FBO Code	0009
Number of outbreaks	1
Number of human cases	14
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	Meat from wild boar
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Trichinella - Trichinella spp., unspecified

	Value
FBO Code	0177
Number of outbreaks	1
Number of human cases	16
Number of hospitalisations	6
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	Meat from wild boar
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Trichinella - Trichinella spp., unspecified

	Value
FBO Code	0042
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	Meat from wild boar
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Trichinella - Trichinella spp., unspecified

	Value
FBO Code	0013
Number of outbreaks	1
Number of human cases	10
Number of hospitalisations	6
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	Meat from wild boar
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Salmonella

Please use CTRL for multiple selection fields

S. Enteritidis

	Value
FBO Code	0154
Number of outbreaks	1
Number of human cases	16
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0403
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0180
Number of outbreaks	1
Number of human cases	11
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0205
Number of outbreaks	1
Number of human cases	11
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Bovine meat and products thereof
More food vehicle information	Bovine meat and raw eggs "Tatar"
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0277
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0469
Number of outbreaks	1
Number of human cases	11
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Tap water, including well water
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Water source
Origin of food vehicle	Domestic market
Contributory factors	Water treatment failure
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0270
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0407
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Farm (primary production)
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0233
Number of outbreaks	1
Number of human cases	8
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Bovine meat and products thereof
More food vehicle information	Bovine meat and raw eggs "Tatar"
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0417
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Other
Origin of food vehicle	Unknown
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0412
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0239
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0125
Number of outbreaks	1
Number of human cases	40
Number of hospitalisations	13
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0462
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	7
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	Broiler meat and raw eggs
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Other
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0145
Number of outbreaks	1
Number of human cases	10
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0358
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0437
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	Broiler meat and raw eggs
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0495
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0367
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	Broiler meat and raw eggs
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Mbandaka

	Value
FBO Code	0021
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	Other processed food products and prepared dishes - dumplings
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0115
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Infantis

	Value
FBO Code	0488
Number of outbreaks	1
Number of human cases	23
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0548
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	Fish and fish products coating of egg and breadcrumbs
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0447
Number of outbreaks	1
Number of human cases	113
Number of hospitalisations	9
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	mixed or buffet meals
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Residential institution (nursing home, prison, boarding school)
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Saintpaul

	Value
FBO Code	0264
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	Broiler meat and raw eggs
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0327
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0230
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0017
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0261
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0354
Number of outbreaks	1
Number of human cases	20
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0386
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0385
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	7
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0292
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	5
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0120
Number of outbreaks	1
Number of human cases	10
Number of hospitalisations	6
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0049
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0496
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0283
Number of outbreaks	1
Number of human cases	15
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Unknown
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0453
Number of outbreaks	1
Number of human cases	15
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Other setting
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Salmonella spp.

	Value
FBO Code	0085
Number of outbreaks	1
Number of human cases	21
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0357
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0431
Number of outbreaks	1
Number of human cases	15
Number of hospitalisations	9
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0181
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0525
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0347
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0331
Number of outbreaks	1
Number of human cases	23
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	Broiler meat and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	School, kindergarten
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0250
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0136
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0375
Number of outbreaks	1
Number of human cases	18
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0377
Number of outbreaks	1
Number of human cases	34
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0228
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0390
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0321
Number of outbreaks	1
Number of human cases	14
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Bovine meat and products thereof
More food vehicle information	Bovine meat and raw eggs "Tatar"
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Other setting
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment;Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0294
Number of outbreaks	1
Number of human cases	12
Number of hospitalisations	6
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0226
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	Other or mixed red meat and products thereof and raw eggs "Tatar"
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0343
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0430
Number of outbreaks	1
Number of human cases	14
Number of hospitalisations	14
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0499
Number of outbreaks	1
Number of human cases	11
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0362
Number of outbreaks	1
Number of human cases	8
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0149
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0492
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0194
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	Broiler meat and raw eggs
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0490
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0384
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0257
Number of outbreaks	1
Number of human cases	8
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	School, kindergarten
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0376
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0282
Number of outbreaks	1
Number of human cases	11
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0408
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0254
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0278
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0238
Number of outbreaks	1
Number of human cases	23
Number of hospitalisations	5
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0342
Number of outbreaks	1
Number of human cases	11
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0454
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0501
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	Other or mixed red meat and products thereof and raw eggs "Tatar"
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0235
Number of outbreaks	1
Number of human cases	8
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0299
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0276
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0382
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0334
Number of outbreaks	1
Number of human cases	8
Number of hospitalisations	5
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	Broiler meat and raw eggs
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0160
Number of outbreaks	1
Number of human cases	54
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Pig meat and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Residential institution (nursing home, prison, boarding school)
Origin of food vehicle	Unknown
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0173
Number of outbreaks	1
Number of human cases	27
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Residential institution (nursing home, prison, boarding school)
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Infantis

	Value
FBO Code	0393
Number of outbreaks	1
Number of human cases	64
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0450
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0507
Number of outbreaks	1
Number of human cases	14
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	Broiler meat and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0481
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0114
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	5
Number of deaths	0
Food vehicle	Bovine meat and products thereof
More food vehicle information	Bovine meat and raw eggs "Tatar"
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment;Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0356
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0326
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0328
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0380
Number of outbreaks	1
Number of human cases	17
Number of hospitalisations	5
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0401
Number of outbreaks	1
Number of human cases	27
Number of hospitalisations	9
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0366
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	5
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0263
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0472
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Typhimurium

	Value
FBO Code	0339
Number of outbreaks	1
Number of human cases	40
Number of hospitalisations	5
Number of deaths	0
Food vehicle	Bovine meat and products thereof
More food vehicle information	Bovine meat and raw eggs "Tatar"
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0560
Number of outbreaks	1
Number of human cases	22
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Fine bakery product containig pasteurised dairy products and raw eggs
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0252
Number of outbreaks	1
Number of human cases	18
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment;Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	0466
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Staphylococcal enterotoxins

Please use CTRL for multiple selection fields

Enterotoxin, unspecified

	Value
FBO Code	0199
Number of outbreaks	1
Number of human cases	8
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence;Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

Enterotoxin, unspecified

	Value
FBO Code	0410
Number of outbreaks	1
Number of human cases	75
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Residential institution (nursing home, prison, boarding school)
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	Norovirus
Additional information	

Enterotoxin, unspecified

	Value
FBO Code	0198
Number of outbreaks	1
Number of human cases	81
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Residential institution (nursing home, prison, boarding school)
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Enterotoxin, unspecified

	Value
FBO Code	0253
Number of outbreaks	1
Number of human cases	22
Number of hospitalisations	11
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Residential institution (nursing home, prison, boarding school)
Origin of food vehicle	Unknown
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

Enterotoxin, unspecified

	Value
FBO Code	0285
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent ;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

Enterotoxin, unspecified

	Value
FBO Code	0224
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence;Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Enterotoxin, unspecified

	Value
FBO Code	0143
Number of outbreaks	1
Number of human cases	40
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans;Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	School, kindergarten
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	Norovirus
Additional information	

Table Foodborne Outbreaks: detailed data for Viruses

Please use CTRL for multiple selection fields

Calicivirus - norovirus (Norwalk-like virus)

	Value
FBO Code	0175
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	