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 2007

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: **Poland**
Reporting Year: **2007**
Institutions and laboratories involved in reporting and monitoring:

Laboratory name	Description	Contribution
National Research Institute, Pulawy - Departament of Microbiology		16 regional veterinary laboratories reported to NRL-Salmonella results on Salmonella prevalence in foodstuffs, animals and feedstuffs
National Institute of Hygiene	National Center for Disease Prevention and Control	
RVL - Regional Veterinary Laboratories		

PREFACE

This report is submitted to the European Commission in accordance with Article 9 of Council Directive 2003/ 99/ EC[1]. The information has also been forwarded to the European Food Safety Authority (EFSA).
The report contains information on trends and sources of zoonoses and zoonotic agents in Poland during the year 2007. The information covers the occurrence of these diseases and agents in humans, animals, foodstuffs and in some cases also in feedingstuffs. In addition the report includes data on antimicrobial resistance in some zoonotic agents and commensal bacteria as well as information on epidemiological investigations of foodborne outbreaks. Complementary data on susceptible animal populations in the country is also given.
The information given covers both zoonoses that are important for the public health in the whole European Community as well as zoonoses, which are relevant on the basis of the national epidemiological situation.
The report describes the monitoring systems in place and the prevention and control strategies applied in the country. For some zoonoses this monitoring is based on legal requirements laid down by the Community Legislation, while for the other zoonoses national approaches are applied.
The report presents the results of the examinations carried out in the reporting year. A national evaluation of the epidemiological situation, with special reference to trends and sources of zoonotic infections, is given. Whenever possible, the relevance of findings in foodstuffs and animals to zoonoses cases in humans is evaluated.
The information covered by this report is used in the annual Community Summary Report on zoonoses that is published each year by EFSA.

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

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1. ANIMAL POPULATIONS

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

A. Information on susceptible animal population

Sources of information:

Data on the number of herds, with reference to cattle was obtained from the Agency for Restructuring and Modernisation of Agriculture (ARMA); whereas, data on the herds of other animal species were obtained in the District Veterinary Inspectorates.
Data on the number of headage of susceptible animals, with reference to cattle 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 2007 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:

In some cases data sent by the District Veterinary Inspectorates refer to all year 2007 (e.g. number of flocks of broilers and number of animals during the year).

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 2007, total number of bovine animals increased by 9% compared to 2006. Also total number of cattle herds and holdings increased in 2007.
From the last year there is a significant decrease in total number of farmed deer herds by 40%.
There was a slight increase in number of flocks of sheeps as well as number of animals in these flocks.
In 2007 there was a significant increase in number of goats, probably due to lack of comprehensive information in prevoius years.
In 2007 there was significant decrease in number of flocks and holdings, while total number of live birds of Gallus gallus species increased by 25%. Decrease in number of flocks and holdings can be explained by the fact that for 2007 many District Veterinary Inspectorates did not provide data on very small flocks and holdings (with less than 10 birds kept for private domestic use). Total number of slaughtered fowl of Gallus gallus slightly decrease compared to 2006.
The number of geese kept and slaughtered in 2007 increased, whereas number of turkeys kept and slaughtered maintened approximately at steady level.
The number of horses as well as number of herds and holdings significantly increased in 2007 comparing to 2006.

Total number of live pigs as well as pigs slaughtered decreased in 2007 comparing to 2006.
Data on other animal species (partriges, quails, ostriches and pheasants) were not provided last year.

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

Cattle
Almost 45% of livestock was located in 3 voivodships: mazowieckie, podlaskie and wielkopolskie.
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 95% of goats are bred in malopolskie voivodship.
Pigs
More than 25% of all pigs are bred in wielkopolskie voivodship, which is well known for location of big commercial holdings belonged to American company.
Gallus gallus
High density of fowl of Gallus gallus was noted in swietokrzyskie, wielkopolskie, mazowieckie and kujawsko - pomorskie voividships.
Ducks and geese
57% of all ducks and 25% of geese were bred in wielkopolskie voivodship.
Turkeys
Over 40% of turkey production was located on warminsko - mazurskie voivodship.

Additional information

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

Table Susceptible animal populations

* Only if different than current reporting year

Animal species	Category of animals	Number of herds or flocks	Year*	Number of slaughtered animals	Year*	Livestock numbers (live animals)	Year*	Number of holdings	Year*
Cattle (bovine animals)	dairy cows and heifers	194741		206830		1558093		193741	
	mixed herds	564178		654337		3177685		556934	
	meat production animals	10998		51249		184071		10965	
	calves (under 1 year)	47238		65011		377885		47164	
	in total	858492		1423814		5746279		850106	
Deer	farmed - in total	88		5383		7200		86	
	farmed - fallow deer - at farm	93		569		8002		93	
Ducks	mixed flocks/ holdings	12519				155079		12519	
	grandparent breeding flocks	5				8660		3	
	parent breeding flocks	19		5400		30930		18	
	meat production flocks	9397		2868924		2675823		9352	
	breeding flocks, unspecified - in total	24				27890		22	
	in total	21959		3453012		1567282		21911	
Foxes	farmed	2				885		2	
Gallus gallus (fowl)	parent breeding flocks for egg production line	57				409121		39	
	grandparent breeding flocks for egg production line	0				0		0	
	breeding flocks, unspecified - in total	908		215111		10711109		603	
	elite breeding flocks, unspecified - in total	4				33300		3	
	parent breeding flocks, unspecified - in total	263				2686401		125	
	mixed flocks/ holdings	126342		8062950		5895598		126304	
	elite breeding flocks for egg production line	1				12000		1	
	grandparent breeding flocks for meat production line	48				441724		15	
	parent breeding flocks for meat production line	227				2320549		100	
	breeding flocks for meat production line - in total	508		54200		5074177		317	
	laying hens	5792		25565198		44484369		5458	
	elite breeding flocks for meat production line	3				21300		2	

	grandparent breeding flocks, unspecified - in total	48				441724		15	
	broilers	7596		493985990		230086669		4088	
	breeding flocks for egg production line - in total	122				2505275		91	
	in total	151956		519767450		393029602		147719	
Geese	grandparent breeding flocks	3				7000		1	
	mixed flocks/ holdings	7823		1110250		659461		7823	
	parent breeding flocks	146				168578		98	
	meat production flocks	4423		3396867		2638371		4234	
	breeding flocks, unspecified - in total	243				209201		187	
	in total	12693		6205796		4370974		12441	
Goats	milk goats	687				3429		686	
	animals under 1 year	113		7		509		113	
	meat production animals	42				151		42	
	animals over 1 year	230				1466		230	
	mixed herds	4584		118		578980		4491	
	in total	6348		211		593382		6258	
Pigs	breeding animals	1693		3803		227017		1691	
	fattening pigs	39955		5110847		2574183		39939	
	mixed herds	326205		8207667		14371445		321034	
	breeding animals - unspecified - sows and gilts	20374		114614		360997		20371	
	in total	407334		23015105		20302913		402140	
Rabbits	farmed	1				200		1	
Reindeers	farmed - in total	0		0		0		0	
Sheep	meat production animals	1283		109		59058		1277	
	mixed herds	4711		16016		206392		4647	
	milk ewes	209		142		9194		209	
	animals over 1 year	249		114		19728		249	
	animals under 1 year (lambs)	133		138		9363		133	
	in total	7014		20596		293547		6957	
Solipeds, domestic	horses - in total	108856		37521		271545		101868	
Turkeys	meat production flocks	7509		18445828		15827776		7102	
	breeding flocks, unspecified - in total	24				127495		24	
	parent breeding flocks	8				24765		8	
	mixed flocks/ holdings	1757				376385		1738	
	in total	9398		3006852		16508256		8973	
Wild boars	farmed - in total	19				630		19	
Partridges	at farm	3				2140		2	
Quails	at farm	2				10890		2	
Chinchillas	at farm	2				637		2	
Minks	at farm	1				200000		1	
Ostriches	at farm	56		6369		2381		56	

Pheasants	at farm	26				258000		23	

Footnote

Data provided in the table refers more to the capacity of the country, than to the number of herds/ flocks and animals existing at some determined date.
Moreover, not all Voivodships provided detailed data on animals - some of them provided only total number of requested species.

2. INFORMATION ON SPECIFIC ZOONOSES AND ZOONOTIC AGENTS

Zoonoses are diseases or infections, which are naturally transmissible directly or indirectly between animals and humans. Foodstuffs serve often as vehicles of zoonotic infections. Zoonotic agents cover viruses, bacteria, fungi, parasites or other biological entities that are likely to cause zoonoses.

2.1. SALMONELLOSIS

2.1.1. General evaluation of the national situation

A. General evaluation

History of the disease and/ or infection in the country

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

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

Poultry is the main reservoir of Salmonella in Poland, although epidemiological situation in other species, except slauhgter pigs, is not well recognized.
S. Enteritidis predominates in Gallus gallus, as well as in slaughter pigs, whereas S.Saintpaul is main serowar isolated from turkeys. Species specific S. Choleraesuis occurs in pigs, mostly in clinical cases.
The most frequent serovars in poultry are: S. Enteritidis, S. Typhimurium, S. Infantis, S. Virchow, S. Mbandaka, S. Hadar, and in slaughter pigs (according to results of baseline survey) - S. Enteritidis, S.Typhimurium and S. Derby.
Higher Salmonella prevalence is observed in poultry commercial flocks than in breeders. There are differences in Salmonella infection rates in different poultry species. Infection rate did not differ significantly between ducks, geese and turkey flocks.
Poultry products are the most frequently contaminated by Salmonella. High Salmonella contamination rate was found in raw broiler meat preparation intended to be eaten cooked (21.4%) and in minced meat (10.8%). 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.

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

Salmonella monitoring program in poultry, based on Directive 92/ 117/ EEC, was introduced in July 1999. For the purpose of the reducing the prevalence of Salmonella in laying hens sector, on 21

September 2006, Chief Veterinary Officer issued the instruction (No.GIWz.400.D-20/ 06) laying down a procedure of the control and eradication of salmonelloses in laying flocks for the District Veterinary Officers.
In 2007 voluntary programme covered production flocks for consumption eggs and meat of Gallus gallus, turkey, geese and ducks. Enviroment sampling on farm was voluntary prior settlement and obligatory in laying flocks during rearing and production period as well as before slaughter in broilers. Sampling was conducted by owners or veterinarians. The tests were performed in regional veterinary laboratories, with status of official laboratories. When S. Enteritidis or S. Typhimurium had been detected in samples taken by the operator, then official samples were taken by competent authority. The eggs were kept on holding and no birds could leave the flock until confirmation or exclusion of Salmonella. If the initial positive result was confirmed, official authorities supervised slaughtering of broilers. Eggs from S. Enteritidis and/ or S. Typhimurium positive flocks were destroyed or sent to the egg-processing plants. In 2007 antibiotic treatment was allowed, therefore infected bird were often treated with antimicrobials.
After depopulation of the flock the farm was cleaned and disinfected, including safe disposal of manure or litter.
In 2007 voluntary programme was realised in 62% of farms with more than 350 layers. 18,8% of flocks were positive, in most cases infected flocks were treated by antibiotics.
From 2007 National control programme was introduced in breeding flocks of Gallus gallus. Programme is obligatory, and is based on Community legislation - Regulation 2160/ 2003, Regulation 1003/ 2005 and Regulation 1177/ 2006.
In 2007, 2 baseline studies were conducted for presence of Salmonella spp. - in slaugter pigs and in turkeys. Results were sent to the European Commission.
There are no official control programmes in place in other animal species. Other species are examined mainly in the case of clinical problems.
Salmonella reporting system was launched in 2003 and modified in 2004 according to EU recommendations. Since 2004 all 16 regional veterinary laboratories have reported results on Salmonella prevalence in foodstuffs, animals and feedstuffs to the NRL-Salmonella.
The results presented in the present report were gathered on the basis of the laboratory based surveillance system.

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

2.1.3. Salmonella in foodstuffs

A. Salmonella spp. in eggs and egg products

Monitoring system

Diagnostic/ analytical methods used

Eggs at egg packing centres (foodstuff based approach)

Bacteriological method: ISO 6579:2002

Eggs at retail

Bacteriological method: ISO 6579:2002

Raw material for egg products (at production plant)

Bacteriological method: ISO 6579:2002

Egg products (at production plant and at retail)

Bacteriological method: ISO 6579:2002

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.

B. Salmonella spp. in broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

According to meat hygiene regulations.

At meat processing plant

According to meat hygiene regulations.

Diagnostic/ analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

Bacteriological method: ISO 6579:2002

At retail

Bacteriological method: ISO 6579:2002

Control program/ mechanisms

The control program/ strategies in place

There is no official control programme in place.

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

In 2007 most contaminated from broiler meat and products thereof were: meat preparations intended to be eaten cooked (21.4%), fresh meat (12%) and minced meat intended to be eaten cooked (10.7%).

C. Salmonella spp. in turkey meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

According to meat hygiene regulations.

At meat processing plant

According to meat hygiene regulations.

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

In 2007, the highest contamination of trurkey 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).

D. Salmonella spp. in pig meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

According to meat hygiene regulations.

At meat processing plant

According to meat hygiene regulations.

Diagnostic/ analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

Bacteriological method: ISO 6579:2002

At retail

Bacteriological method: ISO 6579:2002

Control program/ mechanisms

The control program/ strategies in place

There is nor national control programme existing. Operators must obey EU hygiene legislation and prepare internal control programmes and sampling strategies.

Measures in case of the positive findings or single cases

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

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

In 2007, Salmonella was found in fresh meat (0.38%) as well as in products derived from pigs. The highest prevalence was observed in meat products ready to eat (8.9%) and in minced meat intended to be eaten raw (8.1%).
Results of baseline survey in slaughter pigs revealed that prevalence of Salmonella in slaughter pigs is quite low, therefore presence of Salmonella in pig meat products can be explained by futher contamination during processing.

E. Salmonella spp. in bovine meat and products thereof

Control program/ mechanisms

The control program/ strategies in place

Samples are taken by operators or within official control.

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

Salmonella spp. is very rare found in bovine meat and products thereof. For instance only 1% meat products and 0.67 meat preparations intended to be eaten cooked were positive for Salmonella.

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Meat from broilers (Gallus gallus)								
minced meat								
intended to be eaten cooked								
- at processing plant	RVL	batch	25g	241	26			26
meat preparation								
intended to be eaten cooked								
- at processing plant	NRL, RVL	batch	10g,25g,1000g	781	167			167
meat products								
raw but intended to be eaten cooked								
- at processing plant	NRL, RVL	batch	10g,25g,500g	2367	157			157
cooked, ready-to-eat								
- at processing plant	NRL, RVL	batch	10g,25g,1000g	573	5			5
mechanically separated meat (MSM)	RVL	batch	10g, 25 g,	983	44			44
fresh	NRL, RVL	batch	10g, 25g, 300g	4421	532	15	24	493
carcass								
- at slaughterhouse - animal sample - neck skin	RVL	batch	25g	1340	101	9	1	91
Meat from turkey								
fresh	NRL, RVL	batch	25g	1784	126		1	125
minced meat								
intended to be eaten cooked								
- at processing plant	RVL	batch	25g	558	80		1	79
meat preparation								
intended to be eaten cooked								
- at processing plant	NRL, RVL		10g,25g	748	54			54
meat products								
raw but intended to be eaten cooked								
- at processing plant	NRL, RVL	batch	25g	476	27			27

cooked, ready-to-eat								
- at processing plant	NRL, RVL	batch	10g, 25g, 200g	698	2			2
mechanically separated meat (MSM)	RVL	batch	25g	799	30			30
carcass								
- at slaughterhouse - animal sample - neck skin	RVL	batch	25g	1135	129			129
Meat from duck								
- at slaughterhouse	RVL	batch	10g, 25g	34	0			
Meat from geese								
- at slaughterhouse	RVL	batch	10g, 25g	194	18		10	8
carcass								
- at slaughterhouse - animal sample - neck skin	RVL	batch	25g	5	0			
Meat from poultry, unspecified	NRL	batch	10g, 25g	1111	76			76
offal	RVL	batch	10g	15	0			
- at slaughterhouse (skin - broilers, turkeys, geese)	RVL	batch	25g, 100cm	2480	230	9	1	220
Meat from other poultry species								
fresh								
(ostriches)	RVL	batch	25g	40	0			

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Milk, cows'								
raw	RVL	batch	25ml	20	0			
intended for direct human consumption	NRL	batch	25ml	165	0			
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products	NRL, RVL	batch	25ml	54	0			
intended for manufacture of pasteurised/ UHT products	RVL	batch	25ml	12	0			
pasteurised milk								
- at processing plant	RVL	batch	25ml, 100ml	278	0			
(condensed)	RVL	batch	25ml	136	0			
Milk, goats'								
pasteurised								
- at processing plant		batch	25ml	1	0			
Cheeses made from cows' milk								
- at processing plant	RVL	batch	25g	75	0			
soft and semi-soft								
- at processing plant	NRL, RVL	batch	25g, 100g	919	0			
made from raw or low heat-treated milk								
- at processing plant	RVL	batch	25g	110	0			
made from pasteurised milk								
- at processing plant	RVL	batch	25g, 100g	1544	0			
(cottage cheese, cream cheese)	RVL	batch	25g, 200g	19	0			
Cheeses made from goats' milk								
soft and semi-soft								
made from pasteurised milk								
- at processing plant	RVL	batch	25g	12	0			

Cheeses made from sheep's milk								
soft and semi-soft								
- at processing plant	RVL	batch	25g	10	0			
made from raw or low heat-treated milk								
- at processing plant	RVL	batch	25g	10	0			
Dairy products (excluding cheeses)								
butter								
made from raw or low heat-treated milk								
- at processing plant	NRL, RVL	batch	25g, 100g	403	0			
made from pasteurised milk	RVL	batch	25g	164	0			
cream	RVL	batch	25g	86	0			
made from raw or low heat-treated milk								
- at processing plant	NRL, RVL	batch	25g, 100g	121	0			
made from pasteurised milk	RVL	batch	25g	42	0			
milk powder and whey powder								
- at processing plant	NRL, RVL	batch	25g	1135	1			1
ice-cream								
- at processing plant	RVL	batch	25g, 100g	368	0			
yoghurt	RVL	batch	25g, 100g	49	0			
dairy desserts	RVL	batch	25g	45	0			
fermented dairy products	RVL	batch	25ml	269	0			
Fats and oils (excluding butter)								
fats	RVL	batch	25g	10	0			
Other products of animal origin								
(technical casein)	RVL	batch	25g	10	2			2

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Meat from pig								
fresh	NRL, RVL	batch		9715	37			37
minced meat								
intended to be eaten raw								
- at processing plant	RVL	batch		49	4			4
intended to be eaten cooked								
- at processing plant	RVL	batch		8219	13			13
meat preparation								
intended to be eaten raw								
- at processing plant	RVL	batch		710	6			6
intended to be eaten cooked								
- at processing plant	RVL	batch		5165	26			26
meat products								
raw but intended to be eaten cooked								
- at processing plant	NRL,RVL	batch		5429	29	3		26
cooked, ready-to-eat	NRL,RVL	batch		10476	937	15	1	921
mechanically separated meat (MSM)	RVL	batch		464	3			3
offal	RVL	batch	25g	30	0			
Meat from bovine animals								
fresh	NRL, RVL	batch	10g,25g,100g	3002	15			15
minced meat								
intended to be eaten raw	RVL	batch		410	0			
intended to be eaten cooked	RVL	batch		1693	0			
meat preparation								
intended to be eaten raw								
- at processing plant	RVL	batch		117	0			
intended to be eaten cooked								
- at processing plant	NRL, RVL	batch		1334	9			9
meat products								

raw but intended to be eaten cooked								
- at processing plant	NRL, RVL	batch		199	2			2
cooked, ready-to-eat								
- at processing plant	NRL, RVL	batch		365	0			
Meat from sheep								
fresh								
- at slaughterhouse	RVL	batch		1	0			
carcass								
- at slaughterhouse - animal sample - carcass swabs	RVL	slaughter batch		20	0			
Meat from horse								
fresh								
- at slaughterhouse	RVL	batch		115	0			
Other products of animal origin								
gelatin and collagen	RVL	batch		131	0			
Meat from bovine animals and pig								
minced meat	RVL	batch		2474	0			
fresh								
- at slaughterhouse - animal sample - carcass swabs	RVL	slaughter batch		5395	6			6
Meat from wild boar	RVL	batch		37	0			
Other processed food products and prepared dishes	RVL	batch	10g, 25g	747	5			5
Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos)	NRL, RVL	batch		2939	22			22

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Eggs								
table eggs								
- at packing centre	NRL, RVL	batch		605	7			7
- at retail	NRL, RVL	batch		277	5	3		2
raw material (liquid egg) for egg products	NRL	batch		15	0			
Egg products								
- at processing plant	NRL, RVL	batch	25g	5841	0			
Fishery products, unspecified								
- at processing plant	NRL,RVL	batch	25g	1320	0			
Crustaceans								
unspecified								
cooked								
- at processing plant	RVL	batch	25g	38	0			
Molluscan shellfish								
cooked								
- at processing plant	RVL	batch	25g	21	0			
Seeds, sprouted								
ready-to-eat	RVL	batch		84	0			
non-ready-to-eat	RVL	batch		65	0			
Fruits and vegetables								
precut								
ready-to-eat	RVL	batch		81	0			
Fish								
raw								
chilled	RVL	batch	25g	217	0			
frozen	RVL	batch	25g	7	0			
smoked	RVL	batch	25g	28	0			
Snails								
(frozen)	RVL	batch	25g	18	0			
Spices and herbs	RVL	batch	25g	5	0			

Bakery products								
cakes	RVL	batch		8	0			
pastry								
(for pizza)	RVL	batch		2	0			
Ready-to-eat salads	RVL	batch	25g	31	0			
Vegetables								
(mixed, frozen)	RVL	batch	25g	10	0			
products								
cooked	RVL	batch	25g	4	0			
Other processed food products and prepared dishes								
(e.g. dumplings, spring rolls, croquettes)	RVL	batch	25g	276	0			

2.1.4. Salmonella in animals

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

Monitoring system

Sampling strategy

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

From 2007 sampling is a part of national control program and is performed by operators or by official veterinarians at the holdings, in accordance with requirements set out in Regulation 2160/ 2003 and Regulation 1003/ 2005.

Laying hens flocks

In 2007 sampling was a part of voluntary control programme, performed in accordance with Instruction of Chief Veterinary Officer from 21 September 2006, prepared on the basis of EU legislation. and was performed by operators or by veterinarians at the holdings, in accordance with requirements set out in Regulation 2160/ 2003 and Regulation 1168/ 2006

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

Other: at age of 4 weeks; 2 weeks prior to moving;

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

Every 2 weeks

Laying hens: Day-old chicks

Every flock is sampled

Laying hens: Rearing period

Other: 2 weeks prior to moving

Laying hens: Production period

Every 15 weeks

Laying hens: Before slaughter at farm

1-2 weeks prior to slaughter

Laying hens: At slaughter

Other:

Type of specimen taken

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

Other: meconium; internal linings of delivery boxes, swabs of delivery boxes

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

Other: feaces; or socks/ boot swabs

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

Other: feaces; or socks/ boot swabs

Laying hens: Day-old chicks

Other: meconium; internal linings of delivery boxes, swabs of delivery boxes

Laying hens: Rearing period

Other: feaces; or socks/ boot swabs

Laying hens: Production period

Other: feaces; or socks/ boot swabs

Laying hens: Before slaughter at farm

Other: feaces; or socks/ boot swabs

Methods of sampling (description of sampling techniques)

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

sampled by operator at the holding

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

Sampled by operator in accordance with Regulation 1003/ 2005

Breeding flocks: Production period

In accordance with Regulation 1003/ 2005

Laying hens: Day-old chicks

By operator in accordance with Regulation 1168/ 2006

Laying hens: Rearing period

By operator in accordance with Regulation 1168/ 2006

Laying hens: Production period

By operator in accordance with Regulation 1168/ 2006

Laying hens: Before slaughter at farm

In accordance with hygiene legislation

Laying hens: At slaughter

In accordance with hygiene legislation

Case definition

Breeding flocks (separate elite, grand parent and parent flocks when necessary): 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 by official sampling.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): 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 by official sampling.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): 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 by official sampling.

Laying hens: 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 by official sampling.

Laying hens: 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 by official sampling.

Laying hens: 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 by official sampling.

Diagnostic/ analytical methods used

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

Bacteriological method: ISO 6579:2002

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

Bacteriological method: ISO 6579:2002

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

Bacteriological method: ISO 6579:2002

Laying hens: Day-old chicks

Bacteriological method: ISO 6579:2002

Laying hens: Rearing period

Bacteriological method: ISO 6579:2002

Laying hens: Production period

Bacteriological method: ISO 6579:2002

Laying hens: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Laying hens: At slaughter

Bacteriological method: ISO 6579:2002

Eggs at packing centre (flock based approach)

Bacteriological method: ISO 6579:2002

Vaccination policy

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

Vaccination is performed in accordance with Regulation 1177/ 2006 - differentation test are available to distinguish vaccine strains used in live vaccines from field strains of Salmonella.

Laying hens flocks

Vaccination is performed in accordance with Regulation 1177/ 2006 - differentation test are available to distinguish vaccine strains used in live vaccines from field strains of Salmonella.

Control program/ mechanisms

The control program/ strategies in place

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

From 2007 obligatory National control programme for Salmonella is in place, according to Regulation 2160/ 2003 and Regulation 1003/ 2005.

Laying hens flocks

In Poland commercial flocks of laying hens were monitored for detection of species-specific and species non-specific Salmonella on the basis of the Instruction of Chief Veterinary Officer from 21 September 2006, based on the Regulation 2160/ 2003 and 1168/ 2006.

Recent actions taken to control the zoonoses

National control programme for 5 serotypes of Salmonella, which cover whole territory of Poland.
For the purpose to reduce prevalence of Salmonella in laying hens sector 21 September 2006 was issued instructions of Chief Veterinary Officer (No.GIWz.400.D-20/ 06) laying down procedure for District Veterinary Officers of control and eradication of salmonelloses in laying flocks. Additionaly, eggs employed by all catering facilities are compulsorily submitted to either pasteurisation or ultra violet treatment and -at national level -awareness campaigns for consumers and Food Business Operators (FBOs) have regularly been carried out for more than 10 years.

Measures in case of the positive findings or single cases

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

If sample taken by operator is positive, than official sampling is performed to confirm or

exclude initial results.
In case of positive result flock is destroyed (slaugtered or killed) as well as hatching eggs (destroyed or processed), litter, and feed which can't be processed.
Compensation to the owners is paid.

Laying hens flocks

In 2007 after positive findings in samples taken by operator, official confirmatory sampling was performed. In case of positive result, in most cases flock was treated by antibiotics. Eggs could not be put on the market during withdarwal period and after results of sampling performed after finishing of treatment.

Notification system in place

Salmonella is obligatory registered pathogen.
On the basis of national cotrol programme 5 serotypes in breeding flocks are under control.

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

In 2005, Salmonella was found in 4.6% and 8.8% of, respectively, breeding and lying flocks. S. Enteritidis was noted in 43.4% of positive breeding flocks and 47.6% of layers. Group C1-C2 (including S. Virchow, S. Hadar, and S. Infantis) was found in 31.7% of positive laying flocks and more frequent in breeding flocks (38.2%). S. Typhimurium and other O:4 serovars were rarely found in egg production line (6.6% – 7.8%).
In 2006, Salmonella Enteritidis was found in 42% of the positive samplings. This is the most frequently isolated serovar in breeding and laying flocks.
In 2007 voluntary programme was realised in 62% of farms with more than 350 layers. 18,8% of flocks were positive for S.Enteritidis and/ or S.Typhimurium, in most cases infected flocks were treated by antibiotics.
In 2007, only 3.1% of adult breeding flocks (for egg or for meat production) were positive for 1 or more from 5 serotypes of Salmonella covered by the National control programme.

B. Salmonella spp. in Gallus gallus - breeding flocks for meat production and broiler flocks

Monitoring system

Sampling strategy

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

Sampling is the part of a National cotrol programme and it is performed by the farmers. The samples are taken at the farms.

Broiler flocks

Obligatory sampling is performed by the official veterinarians or the farmers. The samples are taken at the farms.

Frequency of the sampling

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

Other: at the first day in the farm

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

Other: at the age of 4 weeks; 2 weeks prior to moving

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

Every 2 weeks

Broiler flocks: Day-old chicks

Other: at the first day in the farm

Broiler flocks: Before slaughter at farm

1-2 weeks prior to slaughter

Type of specimen taken

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

Other: meconium or internal linings of delivery boxes or swabs of delivery boxes

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

Other: feaces or socks/ boot swabs

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

Other: feaces or socks/ boot swabs

Broiler flocks: Day-old chicks

Other: meconium or internal linings of delivery boxes or swabs of delivery boxes

Broiler flocks: Before slaughter at farm

Other: feaces or socks/ boot swabs

Methods of sampling (description of sampling techniques)

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

necessary): Day-old chicks

In accordance with Regulation 1003/ 2005

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

In accordance with Regulation 1003/ 2005

Breeding flocks: Production period

In accordance with Regulation 1003/ 2005

Case definition

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

A positive case is a flock, where positive result in laboratory tests for detection of Salmonella was confirmed in samples taken by comptenet authority.

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

A positive case is a flock, where positive result in laboratory tests for detection of Salmonella was confirmed in samples taken by comptenet authority.

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

A positive case is a flock, where positive result in laboratory tests for detection of Salmonella was confirmed in samples taken by comptenet authority.

Broiler flocks: Day-old chicks

A positive case is a flock, where positive result in laboratory tests for detection of Salmonella was confirmed in samples taken by comptenet authority.

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

Broiler flocks: Day-old chicks

Bacteriological method: ISO 6579:2002

Broiler flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Vaccination policy

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

Vaccination is performed in accordance with Regulation 1177/ 2006 - differentation test are available to distinguish vaccine strains used in live vaccines from field strains of Salmonella.

Control program/ mechanisms

The control program/ strategies in place

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

From 2007 obligatory National control programme for Salmonella is in place, according to Regulation 2160/ 2003 and Regulation 1003/ 2005.
National control programme for 5 serotypes of Salmonella, which cover whole territory of Poland.

Broiler flocks

Voluntary control programme. Furthermore, in according with hygiene legislation, samples are taken for Salmonella before slaughter.

Recent actions taken to control the zoonoses

From 2007 obligatory National control programme for Salmonella is in place, according to Regulation 2160/ 2003 and Regulation 1003/ 2005.
National control programme for 5 serotypes of Salmonella, which cover whole territory of Poland.

Measures in case of the positive findings or single cases

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

If sample taken by operator is positive, than official sampling is performed to confirm or exclude initial results.
In case of positive result flock is destroyed (slaugtered or killed) as well as hatching eggs (destroyed or processed), litter, and feed which can't be processed.
Compensation to the owners is paid.

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

Rearing period

If sample taken by operator is positive, than official sampling is performed to confirm or exclude initial results.
In case of positive result flock is destroyed (slaugtered or killed) as well as hatching eggs (destroyed or processed), litter, and feed which can't be processed.
Compensation to the owners is paid.

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

If sample takern by operator is positive, than official sampling is performed to confirm or exclude initial results.
In case of positive result flock is destroyed (slaugtered or killed) as well as hatching eggs (destroyed or processed), litter, and feed which can't be processed.
Compensation to the owners is paid.

Notification system in place

Salmonella is obligatory registered pathogen.
On the basis of national cotrol programme 5 serotypes in breeding flocks are under control.

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

Monitoring system

Sampling strategy

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

Sampling is performed by official veterinarian or farmers, based on EU legislation. Also in 2007, major part of baseline study in turkey was performed. Survey was performed in accordance with Decision 2006/ 662/ EC.

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): Day-old chicks

Other: At the first day in the farm

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

Other: based on Reg.2160/ 2003

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

Other: based on Reg.2160/ 2004

Meat production flocks: Day-old chicks

Other: based on Reg.2160/ 2003

Meat production flocks: Rearing period

Other: based on Reg.2160/ 2003

Meat production flocks: Before slaughter at farm

1-2 weeks prior to slaughter

Type of specimen taken

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

Other:

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

Other:

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

Other:

Meat production flocks: Day-old chicks

Other:

Meat production flocks: Before slaughter at farm

Other:

Diagnostic/ analytical methods used

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

Bacteriological method: ISO 6579:2002

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

Bacteriological method: ISO 6579:2002

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

Bacteriological method: ISO 6579:2002

Meat production flocks: Day-old chicks

Bacteriological method: ISO 6579:2002

Meat production flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

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

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

D. 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

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

Other: at the first day in the farm

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

Other: dir.92/ 117

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

Other: dir.92/ 117

Meat production flocks: Day-old chicks

Other: dir.92/ 117

Meat production flocks: Before slaughter at farm

Other: dir.92/ 117

Type of specimen taken

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

Other: dir.92/ 117

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

Other: dir.92/ 117

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

Other: dir.92/ 117

Meat production flocks: Day-old chicks

Other: dir.92/ 117

Meat production flocks: Before slaughter at farm

Other: dir.92/ 117

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 (Regulations: 2160/ 2003 and 1003/ 2005)

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

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

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

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

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

Diagnostic/ analytical methods used

Breeding flocks: Day-old chicks

Bacteriological method: ISO 6579:2002

Breeding flocks: Rearing period

Bacteriological method: ISO 6579:2002

Breeding flocks: Production period

Bacteriological method: ISO 6579:2002

Meat production flocks: Day-old chicks

Bacteriological method: ISO 6579:2002

Meat production flocks: Rearing period

Bacteriological method: ISO 6579:2002

Meat production flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Meat production flocks: At slaughter (flock based approach)

Bacteriological method: ISO 6579:2002

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.

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

Frequency of the sampling

Breeding flocks: Day-old chicks

Other: at the first day in the farm

Breeding flocks: Rearing period

Other: Reg.1003/ 2005

Breeding flocks: Production period

Other: Reg.1003/ 2005

Meat production flocks: Day-old chicks

Other: Reg.1003/ 2005

Meat production flocks: Before slaughter at farm

2 weeks prior to slaugter weeks prior to slaughter

Type of specimen taken

Breeding flocks: Day-old chicks

Other: Reg.1003/ 2005

Breeding flocks: Rearing period

Other: Reg.1003/ 2005

Meat production flocks: Day-old chicks

Other: Reg.1003/ 2005

Meat production flocks: Before slaughter at farm

Other: dir.92/ 117

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.

Diagnostic/ analytical methods used

Breeding flocks: Day-old chicks

Bacteriological method: ISO 6579:2002

Breeding flocks: Rearing period

Bacteriological method: ISO 6579:2002

Breeding flocks: Production period

Bacteriological method: ISO 6579:2002

Meat production flocks: Day-old chicks

Bacteriological method: ISO 6579:2002

Meat production flocks: Rearing period

Bacteriological method: ISO 6579:2002

Meat production flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

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 1003/ 2005

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.

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 Salmonrlla was found in 5.3% of breeding flocks tested and 14% of meat production flocks tested.

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.

F. Salmonella spp. in pigs

Monitoring system

Sampling strategy

Breeding herds

There is no Salmonella monitoring programme in pigs.

Multiplying herds

There is no Salmonella monitoring programme in pigs.

Fattening herds

There is no Salmonella monitoring programme in pigs. In first nine months of 2007 baseline study in slaughter pigs was performed.

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

In previous years collected data are not representative for the population.
In 2005, Salmonella was found in 9,9% of tested herds (N=372). Twelve serovars,including S. Choleresuis were found in pig isolates in NRL-Salmonella. The most prevalent was S.Typhimurium.
In 2006, Salmonella was found in 3.4% of tested animals (N=317)
In 2007 laso results of sampling performed in breeding pigs was not representative - from 60 samples collected, 2 were positive (3.3%).
From 184 samples collected in slaughter pigs herds, 7 were positive (3.8%).
But in 2007 also major part of baseline survey in slaughter pigs was performed. Out of 1191 samples collected, 82 were positive for presence of Salmonella (6.4%).

G. Salmonella spp. in bovine animals

Monitoring system

Sampling strategy

There is no Salmonella monitoring programme in cattle. The collected data are not representative for the population.

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

There is no monitoring or control programme in place, therefore it is not possible to evaluate the sitaution.
In 2005, Salmonella was found in 4.2% of tested animals (N=238)
In 2006, Salmonella was found in 1.2% of tested animals (N=252)
In 2007, 10 out of 102 caves tested were positive for Salmonella.

Table Salmonella in breeding flocks of Gallus gallus

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	S. Hadar	S. Infantis	S. Virchow	Salmonella spp., unspecified
Gallus gallus (fowl)										
breeding flocks, unspecified										
- at farm - Control or eradication programmes (during rearing and production period)	RVL	flock	965	45	31	7	2	3	2	

Footnote

Number of positive flocks refers also to flocks during rearing period which are not counted as positive with regard to Community target set out in Commission Regulation 1003/ 2005

Table Salmonella in other poultry

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Virchow	S. Agona	Other serotypes	S. Saintpaul	S. Newport	S. Hadar	S. Infantis
Gallus gallus (fowl)														
laying hens														
day-old chicks	RVL	flock	294	15	10		5							
during rearing period	NRL, RVL	flock	2188	116	78	6	32							
during production period	NRL, RVL	flock	3814	390	268	7	113							2
broilers														
day-old chicks	NRL, RVL	flock	4691	648	292	8	348							
during rearing period	NRL, RVL	flock	22527	1717	888	59	748	7					4	11
unspecified														
day-old chicks	NRL, RVL	flock	126	10	9	1								
during rearing period	NRL, RVL	flock	123	12	9		3							
during production period	NRL, RVL	flock	128	41	31		10							
Ducks														
breeding flocks	NRL, RVL	flock	295	19	1		18							

meat production flocks	NRL, RVL	flock	690	71	16	4	51							
Geese														
breeding flocks	NRL, RVL	flock	1484	40	10	13	15		1			1		
meat production flocks	NRL, RVL	flock	2726	249	49	63	136						1	
Turkeys														
breeding flocks	NRL, RVL	flock	1039	36	2	9	25							
meat production flocks	NRL, RVL	flock	7150	473	29	102	339						1	2
- at farm - Survey (within the framework of baseline study)	NRL, RVL	flock	367	94	11	13			4	18	29	7	6	6

Footnote

Some flocks could have been tested several times (e.g. as a day-old chicks and then during rearind and production period). Therefore in some cases units tested mean the number of tests performed.

Positive results can overlap due to confirmatory sampling after initial positive results samples taken by the operator.

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Agona
Pigeons	NRL, RVL	animal	471	30	1	14	15	
Guinea fowl	NRL, RVL	animal	7	0				
Quails	NRL, RVL	animal	29	7	7			
Pheasants	NRL, RVL	animal	115	3			2	1
Partridges	RVL	animal	6	0				
Ostriches	NRL, RVL	animal	331	5	3		2	
Birds								
wild	NRL	animal	23	0				
pet animals	NRL	animal	15	0				

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	Other serotypes
Cattle (bovine animals)	RVL	animal	5	0				
calves (under 1 year)	NRL, RVL	animal	102	10	5	2	3	
adult cattle over 2 years	NRL, RVL	animal	73	0				
Sheep	NRL, RVL	animal	20	0				
Goats	NRL, RVL	animal	11	0				
Pigs	RVL	animal	23	5		3	2	
breeding animals	NRL, RVL	animal	60	2		2		
fattening pigs	NRL, RVL	animal	184	7	1	3	3	
- at farm (samplinf in the framework of baseline study)	NRL	flock	1191	82	30	17		35
unspecified	NRL, RVL	animal						
Solipeds, domestic	NRL	animal	18	2			2	
Cats								
pet animals	NRL, RVL	animal	52	0				
Dogs								
pet animals	NRL, RVL	animal	179	2	1	1		
Chinchillas	NRL, RVL	animal	36	3	1		2	
Zoo animals, all	NRL, RVL	animal	105	3		1	2	
Minks	NRL	animal	72	18	3	1	14	
Snakes								
pet animals	NRL, RVL	animal	11	8			8	
zoo animal	NRL	animal	3	1			1	
Foxes	NRL	animal	35	8	3	2	3	
Reptiles								
pet animals	NRL, RVL	animal	13	1		1		
Birds								
pet animals	NRL	animal	23	0				
All animals								
unspecified	NRL	animal	391	6	4		2	

2.1.5. Salmonella in feedingstuffs

Table Salmonella in feed material of animal origin

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of land animal origin								
dairy products	NRL, RVL	batch	25g	601	4			4
meat meal	NRL, RVL	batch	25g, 500g	54	0			
meat and bone meal	NRL, RVL	batch	25g, 500g	446	14			14
bone meal	RVL	batch	25g,	1	0			
poultry offal meal	NRL, RVL	batch	25g	55	3			3
feather meal	NRL, RVL	batch	25g	65	0			
blood meal	NRL, RVL	batch	25g	87	6			6
animal fat	NRL, RVL	batch	25g	63	0			
Feed material of marine animal origin								
fish meal	NRL, RVL	batch	25g, 500g	441	14			14
fish oil	NRL, RVL	batch	25g	18	0			
other fish products	NRL, RVL	batch	25g	35	0			
Other feed material	NRL. RVL	batch	25g, 500g	6	1	1		

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Agona	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of cereal grain origin									
barley derived	NRL, RVL	batch	25g, 500g	117	0				
wheat derived	NRL, RVL	batch	25g, 500g	334	3				3
maize	NRL, RVL	batch	25g, 500g	56	0				
derived	NRL, RVL	batch	25g, 500g	25	0				
other cereal grain derived	NRL, RVL	batch	25g, 500g	77	4				4
Feed material of oil seed or fruit origin									
rape seed derived	NRL, RVL	batch	25g	535	35	2			33
palm kernel derived	NRL, RVL	batch	25g, 500g	1	0				
soya (bean) derived	NRL, RVL	batch	25g, 500g	619	49				49
cotton seed derived	NRL, RVL	batch	25g, 500g	11	1				1
sunflower seed derived	NRL, RVL	batch	25g, 500g	3265	33				33
linseed derived	NRL, RVL	batch	25g, 500g	30	0				
other oil seeds derived	NRL, RVL	batch	25g, 500g	5	0				
Other feed material	RVL	batch	25g, 500g	7	0				
legume seeds and similar products	NRL, RVL	batch	25g, 500g	4	0				
tubers, roots and similar products	NRL, RVL	batch	25g, 500g	15	0				
other seeds and fruits	NRL, RVL	batch	25g, 500g	3	0				
other plants	NRL, RVL	batch	25g, 500g	24	2				2
yeast	RVL	batch	500g	11	2				2

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Tennessee	S. Agona	S. Typhimurium	S. Enteritidis	Salmonella spp., unspecified	S. Livingstone
Compound feedingstuffs for cattle											
process control	RVL	batch	25g	113	4					4	
final product	RVL	batch	25g, 500g	898	6					6	
Compound feedingstuffs for pigs											
process control	RVL	batch	25g	112	0						
final product	RVL	batch	25g, 500g	1741	29	1		1		26	1
Compound feedingstuffs for poultry (non specified)											
process control	RVL	batch	25g	41	0						
final product	RVL	batch	25g, 500g	1144	28		4			24	
Compound feedingstuffs for poultry -breeders											
process control	RVL	batch	25g	3	0						
final product	RVL	batch	25g	189	1					1	
Compound feedingstuffs for poultry - laying hens											
process control	RVL	batch	25g	64	0						
final product	RVL	batch	25g	885	7					7	
Compund feedingstuffs for poultry - broilers											
process control	RVL	batch	25g	81	7					7	
final product	RVL	batch	25g	152	13					13	
Pet food											
dog snacks (pig ears, chewing bones)	RVL	batch	25g, 500g	1085	25					25	
(for dogs, cats, rodents and birds)	RVL	batch	25g, 500g	65	0						
Compound feedingstuffs for horses	RVL	batch	25g, 500g	15	0						
Compound feedingstuffs for rabbits	RVL	batch	25g, 500g	17	0						
Compound feedingstuffs for fish	RVL	batch	25g	145	0						

Compound feedingstuffs for fur animal	RVL	batch	25g	26	2					2	
Premixtures	RVL	batch	25g	790	2					2	
Compound feedingstuffs, not specified	RVL	batch	25g, 500g	47	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

Serovars		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		All animals - unspecified	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=		4	82	16	1432	1296			383	616
Number of isolates serotyped	N=	1	3	83	11	1464	182	0	0	198	53
Number of isolates per type											
S. Agona				1		26	2			4	
S. Anatum				2		6	1			1	
S. Braenderup						5					
S. Bredeney				2	2						1
S. Chester						10	5				
S. Choleraesuis				3	5						1
S. Derby				10		2				2	1
S. Enteritidis			1	29	1	782	124			16	12
S. Hadar				4		35	2			6	4
S. Heidelberg						4	2				
S. Indiana						7	2				2
S. Infantis			1	3	1	74	4				
S. Mbandaka				3		36	2			4	1
S. Newport				3		18	2			7	3
S. Oranienburg						10	0				
S. Saintpaul						3	0			29	

S. Senftenberg			1		20	2			2	3
S. Typhimurium	1	1	18	2	124	5			122	23
S. Virchow			2		68	6				
Salmonella spp.					104	14				
S. group O:4					13					
S. group O:7					78					
S. Gallinarum					1	6				
Other serotypes (1)			2		38	3			5	2

(1) : Dublin, Agama, Manchester, Kottbus, Berta, Westhampton, Indiana, Derby, Montevideo, Anatum, Albany, Braenderup, Seftenberg, Essen, Isangi, Sandiego, Schwarzengrund, Zanzibar

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella serovars in food

Serovars		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=	33		71		1092		15			
Number of isolates serotyped	N=	0	0	3	0	283	0	15	0	0	0
Number of isolates per type											
S. Agona						7					
S. Enteritidis						39					
S. Hadar						15					
S. Infantis						39					
S. Mbandaka						6					
S. Newport						7					
S. Sandiego						3					
S. Typhimurium						51					
S. Virchow						24					
Salmonella spp.								2			
S. group C						7					
S. group O:4				3		23		2			
S. group O:7						26		2			
S. group O:8								9			

Other serotypes					15					
S. 9 (DO)					21					

Footnote

(*) M : Monitoring, C : Clinical
Data in this table are put in column concerning monitoring, but they can also apply to clinical cases, because data provided by RVL and NRL did not divide into monitoring and clinical cases.

2.1.7. Antimicrobial resistance in Salmonella isolates

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

A. Antimicrobial resistance in Salmonella in cattle

Sampling strategy used in monitoring

Frequency of the sampling

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

Control program/ mechanisms

The control program/ strategies in place

Additional information

In 2007 no isolate of Salmonella from bovine animal was examined for antimicrobial resistance.

B. Antimicrobial resistance in Salmonella in pigs

Sampling strategy used in monitoring

Frequency of the sampling

Within the framweork of baseline study

Methods of sampling (description of sampling techniques)

Quantitative data with dillution method.

Additional information

Quantitative data shows antimicrobial resistance in S.Enteritidis (29 isolates), S.Typhimurium (17 isolates), S.Derby (10 isolates) and other serotypes (40 isolates).
Qualitative data shows antimicrobial resistance in S.Enteritidis (29 isolates), S.Typhimurium (17 isolates), S.Derby (10 isolates) and other serotypes (32 isolates).

C. Antimicrobial resistance in Salmonella in poultry

Sampling strategy used in monitoring

Frequency of the sampling

Isolates were collected from samples taken within National control programme in breeding flocks of Gallus gallus, baseline survey in turkeys and from geese.

Type of specimen taken

Samples were taken in accordance with requirements set out in Community legistation: Regulation 1003/ 2005 for breeders nad Decision 2006/ 662 for turkeys.

Methods of sampling (description of sampling techniques)

Methods are described in Regulation 1003/ 2005 and Decision 2006/ 662 and 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.

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

D. 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

194 isolates of S.Enteritidis, 194 isolates of S.Typhimurium and 296 isolates of other Salmonella serovars isolated from food of anima origin were tested.

E. Antimicrobial resistance in Salmonella in foodstuff derived from pigs

Sampling strategy used in monitoring

Frequency of the sampling

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

Type of specimen taken

Food of animal origin

Laboratory methodology used for identification of the microbial isolates

Dillution method.

Additional information

194 isolates of S.Enteritidis, 194 isolates of S.Typhimurium and 296 isolates of other Salmonella serovars isolated from food of animal origin were tested.

F. 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 not tested for antimicrobial resistance separately with quantitative method. Antimicrobial resistance strains of S.Enteritidis, S.Typhimurium and other serotypes isolated from poultry meat was tested with qualitative method.

Laboratory methodology used for identification of the microbial isolates

Quantitative with dillution method.

Additional information

194 isolates of S.Enteritidis, 194 isolates of S.Typhimurium and 296 isolates of other Salmonella serovars isolated from food of animal origin (qualitative) as well as from poultry (qualitative) were tested.

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

	S. Derby
	Pigs
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	10

Antimicrobials:	Break point	N	n	<=0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
				Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																			
Aminoglycosides																							
Gentamicin	2	10	0						10													1	32
Streptomycin	32	10	0									5	4	1								4	64
Amphenicols																							
Chloramphenicol	16	10	0								2	7	1									2	64
Florfenicol	32	10	0								5	5										2	64
Fluoroquinolones																							
Enrofloxacin	2	10	0	9	1																	0.016	2
Penicillins																							
Ampicillin	4	10	2						7	1					2							1	32
Quinolones																							
Nalidixic acid	16	10	0									10										8	128
Sulfonamides																							
Sulfonamide	256	10	0												10							64	1024
Tetracyclines																							
Tetracyclin	8	10	0							9	1											1	32
Trimethoprim	4	10	0								10											4	128

Table Antimicrobial susceptibility testing in S. Derby

n = Number of resistant isolates	S. Derby	
	Pigs	
Isolates out of a monitoring programme	yes	
Number of isolates available in the laboratory	10	
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	10	0
Streptomycin	10	0
Amphenicols		
Chloramphenicol	10	0
Fluoroquinolones		
Enrofloxacin	10	0
Fully sensitive	8	
Penicillins		
Ampicillin	10	2
Quinolones		
Nalidixic acid	10	0
Resistant to 1 antimicrobial	2	
Resistant to 2 antimicrobials	0	
Resistant to 3 antimicrobials	0	
Resistant to 4 antimicrobials	0	
Resistant to >4 antimicrobials	0	
Sulfonamides		
Sulfonamide	10	0
Tetracyclines		
Tetracyclin	10	0
Trimethoprim	10	0

Table Antimicrobial susceptibility testing of S.Enteritidis in animals

n = Number of resistant isolates														
	S. Enteritidis													
	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers		Gallus gallus (fowl) - breeding flocks, unspecified	
Isolates out of a monitoring programme			yes				yes						yes	
Number of isolates available in the laboratory			29				21						44	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides														
Gentamicin			29	1			11	0					44	0
Streptomycin			29	2			11	0					44	2
Amphenicols														
Chloramphenicol			29	2			11	0					44	0
Fluoroquinolones														
Enrofloxacin			29	0			11	0					44	0
Fully sensitive			18				11						26	
Penicillins														
Ampicillin			29	3			11	0					44	4
Quinolones														
Nalidixic acid			29	10			11	0					44	13
Resistant to 1 antimicrobial			5				0						5	
Resistant to 2 antimicrobials			3				0						12	
Resistant to 3 antimicrobials			0				0						0	
Resistant to 4 antimicrobials			0				0						0	
Resistant to >4 antimicrobials			3				0							
Sulfonamides														
Sulfonamide			29	4			11	0					44	1
Tetracyclines														
Tetracyclin			29	3			11	0					44	1
Trimethoprim			29	0			11	0					44	1

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

	S. Enteritidis
	Pigs
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	29

Antimicrobials:	**Break point**	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
Aminoglycosides																							
Gentamicin	2	29	1						28				1									1	32
Streptomycin	32	29	2								25			2		2						4	64
Amphenicols																							
Chloramphenicol	16	29	2								23	4				2						2	64
Florfenicol	32	29	0								26	1	1	1								2	64
Fluoroquinolones																							
Enrofloxacin	2	29	0	10	9		6	3	1													0.016	2
Penicillins																							
Ampicillin	4	29	3						17	9					3							1	32
Quinolones																							
Nalidixic acid	16	29	10									19					10					8	128
Sulfonamides																							
Sulfonamide	256	29	4												25					4		64	1024
Tetracyclines																							
Tetracyclin	8	29	3							25	1			1	2							1	32
Trimethoprim	4																					4	128

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

	S. Enteritidis
	Gallus gallus (fowl)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	44

Antimicrobials:	Break point	N	n	<=0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
Aminoglycosides																							
Gentamicin	2	44	0						42	2												1	32
Streptomycin	32	44	2								41	1				2						4	64
Amphenicols																							
Chloramphenicol	16	44	0							3	30	11										2	64
Florfenicol	32	44	0							6	35	3										2	64
Fluoroquinolones																							
Enrofloxacin	2	44	0	14	14	3	1	11	1													0.016	2
Penicillins																							
Ampicillin	4	44	4						11	25	4	2			2							1	32
Quinolones																							
Nalidixic acid	16	44	13									31					13					8	128
Sulfonamides																							
Sulfonamide	256	44	1												43					1		64	1024
Tetracyclines																							
Tetracyclin	8	44	1							40	3				1							1	32
Trimethoprim	4	44	1								43				1							4	128

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

	S. Enteritidis
	Turkeys
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	21

Antimicrobials:	Break point	N	n	<=0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
Aminoglycosides																							
Gentamicin	2	11	0						11													1	32
Streptomycin	32	11	0								11											4	64
Amphenicols																							
Chloramphenicol	16	11	0								10	1										2	64
Florfenicol	32	11	0							1	10											2	64
Fluoroquinolones																							
Enrofloxacin	2	11	0	6	5																	0.016	2
Penicillins																							
Ampicillin	4	11	0						6	5												1	32
Quinolones																							
Nalidixic acid	16	11	0									11										8	128
Sulfonamides																							
Sulfonamide	256	11	0												11							64	1024
Tetracyclines																							
Tetracyclin	8	11	0							11												1	32
Trimethoprim	4	11	0								11											4	128

Table Antimicrobial susceptibility testing in S. Enteritidis

n = Number of resistant isolates	S. Enteritidis	
	Meat from broilers (Gallus gallus)	
Isolates out of a monitoring programme	no	
Number of isolates available in the laboratory	194	
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	13	0
Streptomycin	13	0
Amphenicols		
Chloramphenicol	13	0
Fluoroquinolones		
Enrofloxacin	13	0
Fully sensitive	7	
Penicillins		
Ampicillin	13	0
Quinolones		
Nalidixic acid	13	6
Resistant to 1 antimicrobial	4	
Resistant to 2 antimicrobials	2	
Resistant to 3 antimicrobials	0	
Resistant to 4 antimicrobials	0	
Resistant to >4 antimicrobials	0	
Sulfonamides		
Sulfonamide	13	0
Tetracyclines		
Tetracyclin	13	0
Trimethoprim	13	0

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

	S. Enteritidis
	All foodstuffs
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	194

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	N	n	<=0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
Aminoglycosides																							
Gentamicin	2	13	0						13													1	32
Streptomycin	32	13	0								12	1										4	64
Amphenicols																							
Chloramphenicol	16	13	0								12	1											
Florfenicol	32																					2	64
Fluoroquinolones																							
Enrofloxacin	2	13	0	4	3		4	2														0.016	2
Penicillins																							
Ampicillin	4	13	0						9	4												1	32
Quinolones																							
Nalidixic acid	16	13	6									7					6					8	128
Sulfonamides																							
Sulfonamide	256	13	0												13							64	1024
Tetracyclines																							
Tetracyclin	8	13	0							13												1	32
Trimethoprim	4	13	0								13											4	128

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

	S. Infantis
	Gallus gallus (fowl)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	13

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2																					1	32
Neomycin	16	13	0						13														
Streptomycin	32	13	1								2	8	2		1							4	64
Amphenicols																							
Chloramphenicol	16	13	1									12				1						2	64
Florfenicol	32	13	0								10	2		1								2	64
Fluoroquinolones																							
Enrofloxacin	2	13	0	1	11		1															0.016	2
Penicillins																							
Ampicillin	4	13	1						1	11					1							1	32
Quinolones																							
Nalidixic acid	16	13	1									12					1					8	128
Sulfonamides																							
Sulfonamide	256	13	2												9	1	1			2		64	1024
Tetracyclines																							
Tetracyclin	8	13	1							12				1								1	32
Trimethoprim	4	13	0								13											4	128

Table Antimicrobial susceptibility testing in S. Infantis

n = Number of resistant isolates		
	S. Infantis	
	Gallus gallus (fowl) - breeding flocks, unspecified	
Isolates out of a monitoring programme	yes	
Number of isolates available in the laboratory	13	
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	13	0
Streptomycin	13	1
Amphenicols		
Chloramphenicol	13	1
Fluoroquinolones		
Enrofloxacin	13	0
Fully sensitive	11	
Penicillins		
Ampicillin	13	1
Quinolones		
Nalidixic acid	13	1
Resistant to 1 antimicrobial	1	
Resistant to 3 antimicrobials	0	
Resistant to 4 antimicrobials	0	
Sulfonamides		
Sulfonamide	13	2
Tetracyclines		
Tetracyclin	13	1
Trimethoprim	13	0

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

	S. Saintpaul
	Turkeys
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	109

Antimicrobials:	**Break point**	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
				Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																			
Aminoglycosides																							
Gentamicin	2																					1	32
Neomycin	16	29	0						20			7	2										
Streptomycin	32	29	15									5	2	7	5	10						4	64
Amphenicols																							
Chloramphenicol	16	29	4								11	9	5			4						2	64
Florfenicol	32	29	4							2	13	10				4						2	64
Fluoroquinolones																							
Enrofloxacin	2	29	1		6		6	4	7	5	1											0.016	2
Penicillins																							
Ampicillin	4	29	18						6	5		1			17							1	32
Quinolones																							
Nalidixic acid	16	29	20									7	2				20					8	128
Sulfonamides																							
Sulfonamide	256	29	18												11					18		64	1024
Tetracyclines																							
Tetracyclin	8	29	13							7	9				13							1	32
Trimethoprim	4	29	0								29											4	128

Table Antimicrobial susceptibility testing in S. Saintpaul

n = Number of resistant isolates	S. Saintpaul	
	Turkeys	
Isolates out of a monitoring programme	yes	
Number of isolates available in the laboratory	109	
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	29	9
Streptomycin	29	15
Amphenicols		
Chloramphenicol	29	4
Fluoroquinolones		
Enrofloxacin	29	6
Fully sensitive	1	
Penicillins		
Ampicillin	29	18
Quinolones		
Nalidixic acid	29	20
Resistant to 1 antimicrobial	2	
Resistant to 2 antimicrobials	6	
Resistant to 3 antimicrobials	3	
Resistant to 4 antimicrobials	4	
Resistant to >4 antimicrobials	13	
Sulfonamides		
Sulfonamide	29	18
Tetracyclines		
Tetracyclin	29	13
Trimethoprim	29	0

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

	S. Typhimurium
	Gallus gallus (fowl)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	12

Antimicrobials:	Break point	N	n	<=0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
Aminoglycosides																							
Gentamicin	2	12	0						12													1	32
Streptomycin	32	12	6									1	3	2	5	1						4	64
Amphenicols																							
Chloramphenicol	16	12	8								3	1				8						2	64
Florfenicol	32	12	2							1	3			6	2							2	64
Fluoroquinolones																							
Enrofloxacin	2	12	0		4			7	1													0.016	2
Penicillins																							
Ampicillin	4	12	8						2	2					8							1	32
Quinolones																							
Nalidixic acid	16	12	8									4					8					8	128
Sulfonamides																							
Sulfonamide	256	12	11												1					11		64	1024
Tetracyclines																							
Tetracyclin	8	12	11							1			2	5	4							1	32
Trimethoprim	4	12	0							12												4	128

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

	S. Typhimurium
	Geese
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	10

Antimicrobials:	Break point	N	n	<=0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
				Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																			
Aminoglycosides																							
Gentamicin	2	1	0						1													1	32
Streptomycin	32	10	3									2	5		3							4	64
Amphenicols																							
Chloramphenicol	16	10	2								5	3				2						2	64
Florfenicol	32	10	0							2	6			2								2	64
Fluoroquinolones																							
Enrofloxacin	2	10	0	1	7		1	1														0.016	2
Penicillins																							
Ampicillin	4	10	2						2	2	4				2							1	32
Quinolones																							
Nalidixic acid	16	10	2									8					2					8	128
Sulfonamides																							
Sulfonamide	256	10	3												6		1			3		64	1024
Tetracyclines																							
Tetracyclin	8	10	3							7				1	2							1	32
Trimethoprim	4	10	0								10											4	128

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

	S. Typhimurium
	Turkeys
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	50

Antimicrobials:	**Break point**	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
Aminoglycosides																							
Gentamicin	2	14	0						14													1	32
Streptomycin	32	14	13									1			6	7						4	64
Amphenicols																							
Chloramphenicol	16	14	13									1				13						2	64
Florfenicol	32	14	5								1			8	3	2						2	64
Fluoroquinolones																							
Enrofloxacin	2	14	0	1			3	7	3													0.016	2
Penicillins																							
Ampicillin	4	14	14												14							1	32
Quinolones																							
Nalidixic acid	16	14	13									1					13					8	128
Sulfonamides																							
Sulfonamide	256	14	14																1	13		64	1024
Tetracyclines																							
Tetracyclin	8	14	13						1				8	5								1	32
Trimethoprim	4	14	0								14											4	128

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

	S. Typhimurium
	Pigs
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	17

Antimicrobials:	Break point	N	n	<=0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
				Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																			
Aminoglycosides																							
Gentamicin	2	17	0						17													1	32
Streptomycin	32	17	11								1	2	2	1	7	4						4	64
Amphenicols																							
Chloramphenicol	16	17	11								5	1				11						2	64
Florfenicol	32	17	5							2	3	1	1	5	2	3						2	64
Fluoroquinolones																							
Enrofloxacin	2	17	0	1	6		4	4	2													0.016	2
Penicillins																							
Ampicillin	4	17	13						1	2	1				13							1	32
Quinolones																							
Nalidixic acid	16	17	10								7						10					8	128
Sulfonamides																							
Sulfonamide	256	17	13												4					13		64	1024
Tetracyclines																							
Tetracyclin	8	17	14							3				9	5							1	32
Trimethoprim	4	17	0								17											4	128

Table Antimicrobial susceptibility testing of S.Typhimurium in animals

n = Number of resistant isolates	S. Typhimurium													
	Cattle (bovine animals)		**Pigs**		**Gallus gallus (fowl)**		**Turkeys**		**Gallus gallus (fowl) - laying hens**		**Gallus gallus (fowl) - broilers**		**Gallus gallus (fowl) - breeding flocks, unspecified**	
Isolates out of a monitoring programme			yes				yes						yes	
Number of isolates available in the laboratory			17				50						12	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides														
Gentamicin			17	0			14	0					12	0
Streptomycin			17	11			14	13					12	6
Amphenicols														
Chloramphenicol			17	11			14	13					12	8
Fluoroquinolones														
Enrofloxacin			17	0			14	0					12	0
Fully sensitive			2				0						1	
Penicillins														
Ampicillin			17	13			14	14					12	8
Quinolones														
Nalidixic acid			17	10			14	13					12	8
Resistant to 1 antimicrobial			2				0						0	
Resistant to 2 antimicrobials			1				2						3	
Resistant to 3 antimicrobials			0				0						0	
Resistant to 4 antimicrobials			1				0						0	
Resistant to >4 antimicrobials			11				12							
Sulfonamides														
Sulfonamide			17	13			14	14					12	11
Tetracyclines														
Tetracyclin			17	14			14	13					12	11
Trimethoprim			17	0			14	0					12	0

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

	S. Typhimurium
	All foodstuffs
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	194

Antimicrobials:	Break point	N	n	<=0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
Aminoglycosides																							
Gentamicin	2	21	1						19	1		1										1	32
Streptomycin	32	21	11								3	3	4		8	3						4	64
Amphenicols																							
Chloramphenicol	16	21	10								9	2				10						2	64
Fluoroquinolones																							
Enrofloxacin	2	21	0	1	6		5	8	1													0.016	2
Penicillins																							
Ampicillin	4	21	11						9	1					11							1	32
Quinolones																							
Nalidixic acid	16	21	14									7				1	13					8	128
Sulfonamides																							
Sulfonamide	256	21	12												9					12		64	1024
Tetracyclines																							
Tetracyclin	8	21	12							9				8	4							1	32
Trimethoprim	4	21	0								21											4	128

Table Antimicrobial susceptibility testing in S. Typhimurium

n = Number of resistant isolates		
	S. Typhimurium	
	Meat from broilers (Gallus gallus)	
Isolates out of a monitoring programme	no	
Number of isolates available in the laboratory	194	
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	21	1
Streptomycin	21	11
Amphenicols		
Chloramphenicol	21	10
Fluoroquinolones		
Enrofloxacin	21	0
Fully sensitive	7	
Penicillins		
Ampicillin	21	11
Quinolones		
Nalidixic acid	21	14
Resistant to 1 antimicrobial	1	
Resistant to 2 antimicrobials	1	
Resistant to 3 antimicrobials	0	
Resistant to 4 antimicrobials	1	
Resistant to >4 antimicrobials	11	
Sulfonamides		
Sulfonamide	21	12
Tetracyclines		
Tetracyclin	21	12
Trimethoprim	21	0

Table Antimicrobial susceptibility testing in Other serotypes

n = Number of resistant isolates						
	Other serotypes					
	Gallus gallus (fowl) - breeding flocks, unspecified		Turkeys		Pigs	
Isolates out of a monitoring programme	no		yes		yes	
Number of isolates available in the laboratory	1279		405		32	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides						
Gentamicin	22	0	42	3	32	3
Streptomycin	22	4	42	16	32	6
Amphenicols						
Chloramphenicol	22	0	42	1	32	2
Fluoroquinolones						
Enrofloxacin	22	1	42	2	32	0
Fully sensitive	9		18		15	
Penicillins						
Ampicillin	22	2	42	5	32	7
Quinolones						
Nalidixic acid	22	11	42	15	32	14
Resistant to 1 antimicrobial	3		4		4	
Resistant to 2 antimicrobials	2		3		4	
Resistant to 3 antimicrobials	3		6		3	
Resistant to 4 antimicrobials	4		7		1	
Resistant to >4 antimicrobials			4		5	
Sulfonamides						
Sulfonamide	22	2	42	9	32	6
Tetracyclines						
Tetracyclin	22	0	42	18	32	8
Trimethoprim	22	1	42	0	32	0

Footnote

Breeding flocks:Mbandaka, Hadar, Virchow, Senftenberg, Saintpaul, Newport, Anatum Turkeys: Newport, Hadar, Infantis, Agona, Mbandaka, Blockley, Kottbus, Derby, Senftenberg, Anatum, Albany, Sandiego, Bredeney, Zanzibar Pigs: Agona, Senftenberg, Isangi, Essen, Anatum, Virchow, Newport, Mbandaka, Hadar, Infantis, Bredeney, Choleraesuis

Table Antimicrobial susceptibility testing of Other serotypes in Pigs (Agona (1), Senftenberg (1), Isangi (1), Essen (1), Anatum (2), Virchow (2), Newport (3), Mbandaka (3), Hadar (4), Infantis (4), Bredeney (4), Choleraesuis (6)) - quantitative data [Dilution method]

	Other serotypes
	Pigs (Agona (1), Senftenberg (1), Isangi (1), Essen (1), Anatum (2), Virchow (2), Newport (3), Mbandaka (3), Hadar (4), Infantis (4), Bredeney (4), Choleraesuis (6))
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	40

Antimicrobials:	Break point	N	n	<=0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
				Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																			
Aminoglycosides																							
Gentamicin	2	32	3						29			1	1	1								1	32
Streptomycin	32	32	6								4	16	2	4	3	3						4	64
Amphenicols																							
Chloramphenicol	16	32	2								13	16	1			2						2	64
Florfenicol	32	32	0							7	15	9	1									2	64
Fluoroquinolones																							
Enrofloxacin	2	32	0	6	11		5	8	2													0.016	2
Penicillins																							
Ampicillin	4	32	7						9	16					7							1	32
Quinolones																							
Nalidixic acid	16	32	14									18					14					8	128
Sulfonamides																							
Sulfonamide	256	32	6												24	2			1	5		64	1024
Tetracyclines																							
Tetracyclin	8	32	8							24					8							1	32
Trimethoprim	4	32	1								31	1										4	128

Table Antimicrobial susceptibility testing of Other serotypes in Turkeys (Newport (7), Hadar (6), Infantis (6), Agona (4), Mbandaka (4), Blockley (4), Kottbus (2), Derby (2), Senftenberg (2), Anatum (1), Albany (1), Sandiego (1), Bredeney (1), Zanzibar (1)) - quantitative data [Dilution method]

	Other serotypes
	Turkeys (Newport (7), Hadar (6), Infantis (6), Agona (4), Mbandaka (4), Blockley (4), Kottbus (2), Derby (2), Senftenberg (2), Anatum (1), Albany (1), Sandiego (1), Bredeney (1), Zanzibar (1))
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	405

Antimicrobials:	**Break point**	**N**	**n**	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																				
				<=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**
Aminoglycosides																							
Gentamicin	2	42	3						39				1	1	1							1	32
Streptomycin	32	42	16								7	14	1	4	8	8						4	64
Amphenicols																							
Chloramphenicol	16	42	1								16	22	3			1						2	64
Florfenicol	32	42	0							4	28	7	3									2	64
Fluoroquinolones																							
Enrofloxacin	2	42	0	14	13		2	6	5	2												0.016	2
Penicillins																							
Ampicillin	4	42	5						27	8	2				5							1	32
Quinolones																							
Nalidixic acid	16	42	15									27				1	14					8	128
Sulfonamides																							
Sulfonamide	256	42	9												29	4				9		64	1024
Tetracyclines																							
Tetracyclin	8	42	18							23	1			1	17							1	32
Trimethoprim	4	42	0								42											4	128

Table Antimicrobial susceptibility testing of Other serotypes in Gallus gallus (fowl) (Mbandaka (8), Hadar (6), Virchow (1), Senftenberg (1), Saintpaul (1), Newport (1), Anatum (1), rough (3)) - quantitative data [Dilution method]

	Other serotypes Gallus gallus (fowl) (Mbandaka (8), Hadar (6), Virchow (1), Senftenberg (1), Saintpaul (1), Newport (1), Anatum (1), rough (3))
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	1279

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

Antimicrobials:	**Break point**	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	22	0						21	1												1	32
Streptomycin	32	22	4								5	8	2	3	2	2						4	64
Amphenicols																							
Chloramphenicol	16	22	0								11	10	1									2	64
Florfenicol	32	22	0							5	14	2	1									2	64
Fluoroquinolones																							
Enrofloxacin	2	22	0	5	6		2	7	1	1												0.016	2
Penicillins																							
Ampicillin	4	22	2						12	8		1			1							1	32
Quinolones																							
Nalidixic acid	16	22	11									11					11					8	128
Sulfonamides																							
Sulfonamide	256	22	2													19	1			2		64	1024
Tetracyclines																							
Tetracyclin	8	22	7							14		1		1	6							1	32
Trimethoprim	4																					4	128

Table Antimicrobial susceptibility testing of Other serotypes in Geese (Enteritidis (6), Hadar (3), Newport (2)) - quantitative data [Dilution method]

	Other serotypes
	Geese (Enteritidis (6), Hadar (3), Newport (2))
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	146

Antimicrobials:	Break point	N	n	<=0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
				Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																			
Aminoglycosides																							
Gentamicin	2	11	0						11													1	32
Streptomycin	32	11	0								7	3	1									4	64
Amphenicols																							
Chloramphenicol	16	11	0								10	1										2	64
Florfenicol	32	11	0							3	8											2	64
Fluoroquinolones																							
Enrofloxacin	2	11	0	4	4			3														0.016	2
Penicillins																							
Ampicillin	4	11	1						4	2	4				1							1	32
Quinolones																							
Nalidixic acid	16	11	3									8					3					8	128
Sulfonamides																							
Sulfonamide	256	11	0												11							64	1024
Tetracyclines																							
Tetracyclin	8	11	0							11												1	32
Trimethoprim	4	11	0								11											4	128

Table Antimicrobial susceptibility testing of Other serotypes in All foodstuffs (S.Infantis (9), S.Virchow(7), S.Hadar (4), S.Agona (2), S.Albany (2), S.Mbandaka (2), S.Newport(2), S.Indiana (1), S.Sandiego (1)) - quantitative data [Dilution method]

	Other serotypes
	All foodstuffs (S.Infantis (9), S.Virchow(7), S.Hadar (4), S.Agona (2), S.Albany (2), S.Mbandaka (2), S.Newport(2), S.Indiana (1), S.Sandiego (1))
Isolates out of a monitoring programme	no
Number of isolates available in the laboratory	296

Antimicrobials:	**Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to**																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	30	0						30													1	32
Streptomycin	32	30	4								3	16	4	3	1	3						4	64
Amphenicols																							
Chloramphenicol	16	30	1							2	8	19				1						2	64
Fluoroquinolones																							
Enrofloxacin	2	30	0	6	10		6	7	1													0.016	2
Penicillins																							
Ampicillin	4	30	2						25	3					2							1	32
Quinolones																							
Nalidixic acid	16	30	13									16	1			1	12					8	128
Sulfonamides																							
Sulfonamide	256	30	5												23	2				5		64	1024
Tetracyclines																							
Tetracyclin	8	30	7							23					7							1	32
Trimethoprim	4	30	0								30											4	128

Table Antimicrobial susceptibility testing in Other serotypes

n = Number of resistant isolates		
	Other serotypes	
	Meat from broilers (Gallus gallus)	
Isolates out of a monitoring programme	no	
Number of isolates available in the laboratory	296	
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	30	0
Streptomycin	30	4
Amphenicols		
Chloramphenicol	30	1
Fluoroquinolones		
Enrofloxacin	30	0
Fully sensitive	14	
Penicillins		
Ampicillin	30	2
Quinolones		
Nalidixic acid	30	13
Resistant to 1 antimicrobial	7	
Resistant to 2 antimicrobials	2	
Resistant to 3 antimicrobials	1	
Resistant to 4 antimicrobials	5	
Resistant to >4 antimicrobials	1	
Sulfonamides		
Sulfonamide	30	5
Tetracyclines		
Tetracyclin	30	7
Trimethoprim	30	0

Footnote

Infantis (9), Virchow (7), Hadar (4), Agona (2), Albany (2), Newport (2), Indiana (1), Sandiego (1)

Table Breakpoints for antibiotic resistance testing in Animals

Test Method Used
Broth dilution

Standards used for testing
NCCLS
EUCAST/ Com_Decision_2007/ 407/ EC

Salmonella	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Amphenicols										
Chloramphenicol	EUCAST cut-off value			16	2	64				
Florfenicol	CLSI	8		32	2	64				
Tetracyclines										
Tetracyclin	EUCAST cut-off value			8	1	32				
Cephalosporins										
Cephalothin	CLSI	8		32	2	64				
Ceftiofur	CLSI	2		4	0.5	8				
Cefuroxim	CLSI	8		32	1	32				
3rd generation cephalosporins										
Fluoroquinolones										
Ciprofloxacin										
Enrofloxacin	CLSI	0.25		2	0.016	2				
Quinolones										
Nalidixic acid	EUCAST cut-off value			16	8	128				
Trimethoprim	EUCAST cut-off value			4	4	128				
Sulfonamides										
Sulfonamide	EUCAST cut-off value			256	64	1024				
Aminoglycosides										
Streptomycin	EUCAST cut-off value			32	4	64				
Gentamicin	EUCAST cut-off value			2	1	32				
Neomycin	CLSI	4		16	2	32				
Kanamycin										
Trimethoprim + sulfonamides										
Penicillins										
Ampicillin	EUCAST cut-off value			4	1	32				

Footnote

The sama data are put in the table concerning breakpoints for antibiotic resistance testing in food and in animals, because NRL provided overall data without dividing into food and animals.

Table Breakpoints for antibiotic resistance testing in Food

Test Method Used

Broth dilution

Standards used for testing

NCCLS

EUCAST/ _Commission_Decision_2007/ 407/ EC

Salmonella	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Amphenicols										
Chloramphenicol	EUCAST cut-off value			16	2	64				
Florfenicol	CLSI	8		32	2	64				
Tetracyclines										
Tetracyclin	EUCAST cut-off value			8	1	32				
Cephalosporins										
Cephalothin	CLSI	8		32	2	64				
Ceftiofur	CLSI	2		4	0.5	8				
Cefuroxim	CLSI	8		32	1	32				
3rd generation cephalosporins										
Fluoroquinolones										
Ciprofloxacin										
Enrofloxacin	CLSI	0.25		2	0.016	2				
Quinolones										
Nalidixic acid	EUCAST cut-off value			16	8	128				
Trimethoprim	EUCAST cut-off value			4	4	128				
Sulfonamides										
Sulfonamide	EUCAST cut-off value			256	65	1024				
Aminoglycosides										
Streptomycin	EUCAST cut-off value			32	4	64				
Gentamicin	EUCAST cut-off value			2	1	32				
Neomycin	CLSI	4		16	2	32				
Kanamycin										
Trimethoprim + sulfonamides										
Penicillins										
Ampicillin	EUCAST cut-off value			4	1	32				

Footnote

The sama data are put in the table concerning breakpoints for antibiotic resistance testing in food and in animals, because NRL provided overall data without dividing into food and animals.

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

There was no monitoring programme for Campylobacter realized in Poland.
In 2007, 77 bovine animals (bulls) were tested in the semen collection centre with negative results for Campylobacter.
Regional Veterinary Laboratories did not conducted tests for presence of Campylobacter in food in 2007.

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

2.2.3. Campylobacter in foodstuffs

A. Thermophilic Campylobacter in Broiler meat and products thereof

Additional information

No results of samples examined for the presence of Campylobacter in broiler meat and products thereof were provided in 2007.

2.2.4. Campylobacter in animals

A. Thermophilic Campylobacter in Gallus gallus

Additional information

No results of samples examined for the presence of Campylobacter in Gallus gallus were provided in 2007.

Table Campylobacter in animals

	Source of information	Sampling unit	Units tested	Total units positive for thermophilic Campylobacter spp.	C. jejuni	C. coli	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Cattle (bovine animals)									
(breeding bulls)	RVL	animal	77	0					

2.2.5. Antimicrobial resistance in Campylobacter isolates

2.3. LISTERIOSIS

2.3.1. General evaluation of the national situation

A. Listeriosis general evaluation

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

Listeriosis is obligatory registrated disease, according to the Act from 11 March 204 on animal health protection and control of animal diseases.
There is no monitoring programme for Listeria spp. realized in Poland. In 2007 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 2005, 3066 samples of milk and dairy products were tested, and L. monocytogenes were detected in 10. 397 samples of poultry meat and poultry meat products were also tested-12 positive samples, 1558 fresh meat from pig and meat products-9 positive samples,23 beef-5 positive samples, 627 other products of animal origin-11 positive samples.
In 2006, among the 7170 samples of milk and dairy products, 9 were positive for Listeria monocytogenes, whilst among the 12018 samples of meat and fish and products thereof, 171 were positive.
In 2007, 7945 samples of milk and dairy products were taken, out of 7 were positive (<0.09%). From 17107 samples taken from other products, 608 were positive (>3.5%). Listeria was found mostly in smoked fish (<14.4% positive samples), as well as pig meat.
10 animals were sampled in 2007, 5 sheep and 5 goats - 2 goats were positive for Listeria spp.

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

Data from previous years shows that situation in number of positive food samples in stable, but in human inceasing tendency in number can be observed

2.3.2. Listeriosis in humans

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
Milk, cows'										
raw	RVL	single	25ml	19	2	19	2	0	0	0
pasteurised milk	RVL	single	1ml, 25ml	1004	0	798	0	206	0	0
(condensed)	RVL	single	1ml, 25ml	15	0	6	0	9	0	0
UHT milk	RVL	single	25ml	22	0	22	0	0	0	0
Milk, goats'										
pasteurised	RVL	single	25ml	5	0	5	0	0	0	0
Cheeses made from cows' milk	RVL	single	1g, 25g	76	0	74	0	2	0	0
soft and semi-soft										
made from raw or low heat-treated milk										
- at processing plant	RVL	single	25g	123	0	123	0	0	0	0
made from pasteurised milk										
- at processing plant	RVL	single	1g, 25g	2368	0	1799	0	569	0	0
(cottage cheese)	RVL	single	1g, 25g	153	0	89	0	64	0	0
hard										
made from raw or low heat-treated milk										
- at processing plant	RVL	single	25g	150	0	150	0	0	0	0
made from pasteurised milk										
- at processing plant	RVL	single	1g, 25g	935	0	809	0	126	0	0
Cheeses made from goats' milk										
soft and semi-soft										
made from raw or low heat-treated milk										
- at processing plant	RVL	single	1g	2	0	0	0	2	0	0

made from pasteurised milk										
- at processing plant	RVL	single	25g	15	0	15	0	0	0	0
Cheeses made from sheep's milk										
soft and semi-soft										
made from raw or low heat-treated milk										
- at processing plant	RVL	single	25g	1	0	1	0	0	0	0
hard										
made from pasteurised milk										
- at processing plant	RVL	single	1g, 25g	8	0	1	0	7	0	0
Dairy products (excluding cheeses)										
butter										
- at processing plant	RVL	single	1g, 25g	709	0	567	0	142	0	0
cream										
- at processing plant	RVL	single	1g, 25g	912	5	804	5	108	0	0
(sweet)	RVL	single	1g, 25g	68	0	67	0	1	0	0
yoghurt	RVL	single	1g, 25g	222	0	178	0	44	0	0
fermented dairy products	RVL	single	1g, 25g	564	0	413	0	151	0	0
dairy desserts										
chilled	RVL	single	1g, 25g	114	0	58	0	56	0	0
milk powder and whey powder	RVL	single	1g, 25g	229	0	207	0	22	0	0
ice-cream	RVL	single	1g, 25g	199	0	155	0	44	0	0
Fats and oils (excluding butter)										
fats	RVL	single	1g, 25g	25	0	15	0	10	0	0
Goats										
milk goats										
UHT	RVL	single	25ml	5	0	5	0	0	0	0

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Meat from broilers (Gallus gallus)										
fresh	RVL	single	25g	76	0	76	0	0	0	0
meat products										
cooked, ready-to-eat	RVL	single	1g, 25g	1116	11	536	10	580	1	0
raw but intended to be eaten cooked	RVL	single	1g, 25g	32	4	12	4	20	0	0
Meat from pig										
fresh	RVL	single	1g, 25g	49	7	42	5	7	2	0
meat products										
cooked, ready-to-eat	RVL	single	1g, 25g	11765	201	5373	151	6417	41	9
meat preparation										
intended to be eaten raw	RVL	single	1g, 25g	122	61	97	61	25	0	0
intended to be eaten cooked	RVL	single	1g, 25g	32	11	22	11	10	0	0
Meat from bovine animals										
fresh	RVL	single	25g	13	0	13	0	0	0	0
meat products										
cooked, ready-to-eat	RVL	single	1g, 25g	55	0	5	0	50	0	0
meat preparation										
intended to be eaten raw	RVL	single	25g	19	0	19	0	0	0	0
Fish										
smoked	RVL	single	1g, 25g	1774	255	676	200	1098	50	5
raw										
frozen	RVL	single	1g, 25g	436	15	341	15	136	0	0
marinated	RVL	single	1g, 25g	61	0	51	0	10	0	0
Molluscan shellfish										
cooked	RVL	single	25g	21	0	21	0	0	0	0
Other processed food products and prepared dishes	RVL	single	1g, 10g, 25g	682	25	146	2	536	12	11
Vegetables										
products										
(frozen)	RVL	single	1g, 25g	20	1	15	1	5	0	0

Spices and herbs	RVL	single	1g, 25g	6	0	1	0	5	0	0
Fishery products, unspecified										
ready-to-eat	RVL	single	94	0	94	0	0	0	0	0
Meat, mixed meat										
(ready-to-eat)	RVL	single	1g, 25g	682	382	16	300	0	0	0

2.3.4. Listeria in animals

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria spp.	L. monocytogenes	Listeria spp., unspecified
Sheep	RVL	single	5	0		
Goats	RVL	single	5	2		2

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 humans or animalswas 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.

Additional information

The data concerning Verocytotoxic E. coli were obtained from Regional Veterinary Laboratories.
In 2007, only 7 samples were taken from animals (poultry) - all samples were positive.
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

2.4.3. Escherichia coli, pathogenic in foodstuffs

Table VT E. coli in food

	Source of information	Sampling unit	Sample weight	Units tested	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 pig								
fresh	RVL, operator	single	swab, 1g, 1kg	19	0			
minced meat	RVL	batch	100g	10	0			
intended to be eaten raw		batch		72	0			
(minced meat intended to be eaten cooked)	RVL	batch	200g	10	0			
(raw sausage intended to be eaten cooked)	RVL	batch		5	4			4
Meat from bovine animals	RVL	single	swab, 200g	12	2			2
fresh								
- at slaughterhouse	RVL	single	swab, 200g	10	0			
Cheeses made from cows' milk	RVL	batch	100g	5	0			

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. The scarce results concerning samples taken from sick animals are not available.

Table VT E. coli in animals

	Source of information	Sampling unit	Sample weight	Units tested	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	animal		7	7			7

2.5. TUBERCULOSIS, MYCOBACTERIAL DISEASES

2.5.1. General evaluation of the national situation

A. Tuberculosis general evaluation

History of the disease and/ or infection in the country

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

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

Currently in Poland the control examinations and eradication of bovine tuberculosis are conducted on the basis the Act of 11 March 2004 on protection of animal health and control of infectious animal diseases, the Ordinance of the Minister of Agriculture and Rural Development of 23 November 2004 on the eradication of bovine tuberculosis and the instruction of the Chief Veterinary Officer of 28 July 2006 on the procedures related to the eradication of animal tuberculosis, draftedon the basis of the Council Directive 64/ 432/ EEC.
Since December 2004 the matter of monitoring tests for bovine tuberculosis is regulated by the Ordinance of the Minister of Agriculture and Rural Development of 17 December 2004 defining the disease entities, the control procedure and the scope of monitoring tests for animal infections (Dz. U. No. 282, item 2813, as amended). The Ordinance provides that the monitoring tests for bovine tuberculosis using intradermal tuberculination are carried out every year on 1/ 3 of the bovine herds in the area of a district in such a way as to examine all herds of cattle in the area of this district in the period of three years. The monitoring tests are carried out on animals older than 6 weeks of age. As compared to the previous regulation, the modification consists in that the tests cover 1/ 3 of the bovine herds, instead of 1/ 3 of the bovine population, in each district.
The percentage of infected herds in Poland in the last 9 years (1999 – 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% and in 2007 - 0.038%.

2.5.2. Tuberculosis, Mycobacterial Diseases in humans

A. Tuberculosis due to Mycobacterium bovis in humans

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

2.5.3. Mycobacterium in animals

A. Mycobacterium bovis in bovine animals

Monitoring system

Sampling strategy

In accordance with the calculations of the Bovine Tuberculosis Control Programme for 2007, samplig should have covered 2 032 806 animals over 6 weeks of age in 268 949 herds. Considering the possibility of empty herds, testing of 1 949 636 animals was envisaged.
In case of bovine tuberculosis intraderm tuberculin tests are performed:
- single tuberculin tests,
- comparative tuberculin tests.
Single and comparative tuberculin tests are performed using intrederm injection of bovine or bovine and avian tuberculin in accordance with the testing methodology and standards for tuberculin laid down in Annex B to the Council Directive 64/ 432/ EEC.
In addition detailed description of the mode of testing is included in the Ordinance of the Minister of Agriculture and Rural Development of 23 November 2004 on the control of bovine tuberculosis (Dz. U. No. 258, item 2585).

Frequency of the sampling

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

Methods of sampling (description of sampling techniques)

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

Case definition

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

Diagnostic/ analytical methods used

The method of conducting official allergic test and the interpretation of the reaction is conducted on the basis of the Instruction of the Chief Veterinary Officer No GIWz. VIII 401/ Gr-1/ a/ 2003 of 14 August 2003 replaced by the Instruction of the Chief Veterinary Officer No GIWz.IV.401/ TBC-26/ 2006 of 28 July 2006.
Screening for tuberculosis consists in intradermal tests (official tests are performed using PPD

bovine and avian purified protein derivative of tuberculin, obtained from growth and analysis products of Mycobacterium bovis AN5 or M. avium D4ER) with the simultaneous clinical examination and additional laboratory examination of samples taken after slaughter or in post mortem examination. The examination consists in microscopic, breeding and biological assay on laboratory animals.

Vaccination policy

The vaccinations against tuberculosis are not used for animals

Control program/ mechanisms

The control program/ strategies in place

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

Recent actions taken to control the zoonoses

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

Measures in case of the positive findings or single cases

In case of suspicion or detection of bovine tuberculosis the procedure is set out in the Ordinance of the Minister of Agriculture and Rural Development of 23 November 2004 on the control of bovine tuberculosis (Dz. U. No. 258, item 2585).
In case of disease suspicion the District Veterinary Officer takes immediate measures in order to confirm or exclude the disease. This authority performs epizootic investigation, clinical examination of animals, a post-mortem examination or an autopsy, performs a diagnostic test or takes samples for diagnostic tests. The authority puts the herd under supervision and imposes restrictions in the form of a ban on movement of bovine animals to/ from a herd, excluding any movement in order carry out immediate slaughter. Animals suspected of a disease are isolated from the rest of the herd. District Veterinary Officer also undertakes other necessary measures to prevent the spread of bovine tuberculosis.
If tuberculosis is detected (pursuant to Article 2 Subparagraph 23 of the Act on animal health protection and eradication of infectious animal diseases and Article 5 of the Ordinance on control of bovine tuberculosis) the District Veterinary Officer notifies the State Sanitary Inspector and the milk purchaser.
The District Veterinary Officer establishes the place of disease outbreak and imposes the ban on bovine animals movement to/ from the sick herd (movement with the aim of immediate slaughter is permitted only). Milk of sick animals may be used to feed animals in a given holding only after suitable heat treatment . The District Veterinary Officer shall order marking and isolation of sick animals in a herd until they are killed.
The District Veterinary Officer shall also take other measures in accordance with the provisions of the Ordinance of the Minister of Agriculture and Rural Development on the control of bovine tuberculosis.
The outbreak of the disease shall be deemed eradicated if all sick animals have fallen or been killed, cleaning and disinfection operations have been performed, and the results of two subsequent

comparative tuberculin tests on other animals of the herd performed in a determined time are negative. The first test is carried out no earlier than after 60 days, the second one no earlier than in the fourth and no later than in the twelfth month from the day of elimination of the last sick animal from the disease outbreak place.

Notification system in place

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

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

The long-term objective for the whole territory of the Republic of Poland is to be recognised officially free from this disease.
In 2007 there was 0.038% of positive herds, which is very slight increase in comparition to 2006. In 2007 there was 0.016% of positive animals, which shows decrease in comparition to 2006 (0.025%).

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 spp.	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified
Pigs	RVL	animal	42	0			
Zoo animals, all	ZOO	animal	16	0			

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

Region	Total number of herds	Total number of herds under the programme	Number of herds checked	Number of positive herds	Number of new positive herds	Number of herds depopulated	% positive herds depopulated	Indicators		
								% herd coverage	% positive herds - period herd prevalence	% new positive herds - herd incidence
Dolnoslaskie	18693	5708	4396	5	5	0	0	77.015	0.114	0.114
Kujawsko-Pomorskie	35279	11909	10895	5	3	0	0	91.485	0.046	0.028
Lubelskie	107960	34919	27517	0	5	1	0	78.802	0	0.018
Lubuskie	6149	1989	1538	1	1	0	0	77.325	0.065	0.065
Lodzkie	67962	27115	22312	5	5	3	60	82.287	0.022	0.022
Malopolskie	107097	35224	28120	2	2	2	100	79.832	0.007	0.007
Mazowieckie	127675	40417	35345	32	29	8	25	87.451	0.091	0.082
Opolskie	12352	3499	2964	0	0	0	0	84.71	0	0
Podkarpackie	91170	29823	23075	1	1	1	100	77.373	0.004	0.004
Podlaskie	68766	18699	15846	5	4	0	0	84.742	0.032	0.025
Pomorskie	20213	6955	6120	3	3	0	0	87.994	0.049	0.049
Slaskie	28492	9293	6317	1	1	0	0	67.976	0.016	0.016
Swietokrzyskie	61320	18664	13473	3	3	1	33.333	72.187	0.022	0.022
Warminsko-Mazurskie	26834	8918	7718	8	7	0	0	86.544	0.104	0.091
Wielkopolskie	61292	19573	18539	7	6	1	14.286	94.717	0.038	0.032
Zachodniopomorskie	11628	3481	2939	8	6	2	25	84.43	0.272	0.204
Total	852882	276186	227114	86	81	19	22.093	82.232	0.038	0.036
Total - 1	869144	298563	298563	102	76	15	14.706	100	0.034	0.025

Footnote

In 3 cases (malopolskie and slaskie region) animals had reacted positively in comparative tuberculin test, but in further tests M.bovis was not isolated.

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

Region	Total number of animals	Number of animals to be tested under the programme	Number of animals tested	Number of animals tested individually	Number of positive animals	Slaughtering		Indicators	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered	% coverage at animal level	% positive animals - animal prevalence
Dolnoslaskie	130293	44031	43284	43284	11	11	13	98.303	0.025
Kujawsko-Pomorskie	445419	154421	169545	169545	7	7	7	109.794	0.004
Lubelskie	457974	144647	118289	118289	5	5	5	81.778	0.004
Lubuskie	82600	26714	27055	27055	1	1	1	101.276	0.004
Lodzkie	414759	128571	141919	141919	17	17	17	110.382	0.012
Malopolskie	281281	92508	72859	72859	2	2	2	78.76	0.003
Mazowieckie	963450	317782	296123	296123	135	129	135	93.184	0.046
Opolskie	118122	43841	47169	47169	0	0	0	107.591	0
Podkarpackie	191807	54730	48152	48152	1	1	1	87.981	0.002
Podlaskie	861157	252994	235123	235123	20	20	20	92.936	0.009
Pomorskie	184894	72455	66459	66459	3	3	4	91.725	0.005
Slaskie	144388	44951	45258	45258	1	1	1	100.683	0.002
Swietokrzyskie	226121	66491	49586	49586	21	21	21	74.576	0.042
Warminsko-Mazurskie	441792	278674	149434	149434	19	19	19	53.623	0.013
Wielkopolskie	790889	264308	261194	261194	8	8	8	98.822	0.003
Zachodniopomorskie	117077	47065	54487	54487	40	40	40	115.77	0.073
Total	5852023	2034183	1825936	1825936	291	285	294	89.763	0.016
Total - 1	5821666	1876678	1796726	1680664	456	304	485	95.74	0.025

Footnote In 3 cases (malopolskie and slaskie region) animals had reacted positively in comparative tuberculin test, but in further tests M.bovis was not isolated.

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

Region	Status of herds and animals under the programme													
	Total number of herds and animals under the programme		Unknown		Not free or not officially free				Free or officially free suspended		Free		Officially free	
					Last check positive		Last check negative							
	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals
Dolnoslaskie	5708	44031	0	0	1	3	0	0	0	0	0	0	5703	44018
Kujawsko-Pomorskie	11909	154421	0	0	1	1	0	0	1	10	0	0	11907	154410
Lubelskie	34919	144647	0	0	0	0	0	0	0	0	0	0	34918	144642
Lubuskie	1989	26714	0	0	0	0	0	0	1	198	0	0	1987	26515
Lodzkie	27115	128571	0	0	0	0	2	35	3	45	0	0	27107	128509
Malopolskie	35224	92508	0	0	0	0	0	0	0	0	0	0	35222	92506
Mazowieckie	40417	317782	0	0	13	217	3	120	3	4	0	0	40385	317643
Opolskie	3499	43841	0	0	0	0	0	0	0	0	0	0	3499	43841
Podkarpackie	29823	54730	0	0	0	0	0	0	0	0	0	0	29822	54729
Podlaskie	18699	252994	0	0	0	0	0	0	0	0	0	0	18695	252974
Pomorskie	6955	72455	0	0	1	1	0	0	0	0	0	0	6520	69459
Slaskie	9293	44951	0	0	0	0	0	0	1	2	0	0	9292	44449
Swietokrzyskie	18664	66491	0	0	0	0	0	0	3	44	0	0	18610	49016
Warminsko-Mazurskie	8918	278674	0	0	0	0	0	0	1	120	0	0	8917	278554
Wielkopolskie	19573	264308	0	0	0	0	0	0	1	2	0	0	19566	264289
Zachodniopomorskie	3481	47065	0	0	2	8	0	0	2	63	0	0	2937	46198
Total	276186	2034183	0	0	18	230	5	155	16	488	0	0	275087	2011752
Total - 1	320701	2012023	0	0	21	447	8	182	33	923	0	0	310440	1800508

Footnote

Pursuant to Polish and EU law, 1/ 3 of all herds are checked in one year period. Therefore table shows officially free herds within herds which were under the programme in 2007.

Table Tuberculosis in farmed deer

Region	Total number of existing farmed deer		Free herds		Infected herds		Routine tuberculin testing		Number of tuberculin tests carried out before the introduction into the herds	Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological examinations	Number of animals detected positive in bacteriological examination
	Herds	Animals	Number of herds	%	Number of herds	%	Interval between routine tuberculin tests (*)	Number of animals tested			
Lubuskie	4	580	1	25	0	0	0				
Swietokrzyskie	1	3	1	100	0	0	0				
Malopolskie	7	139	1	14.286		0					
Podkarpackie	8	423	2	25	0	0	0				
Warminsko-Mazurskie	10	3350	9	90	0	0	0	78	1		
Zachodniopomorskie	9	553	9	100	0	0	0				
Total	39	5048	23	58.974	0	0		78	1	0	0

Footnote

Only 6 Voivodships, which provided data on status of herds are shown in the table .

(*) Legend:

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

2.6. BRUCELLOSIS

2.6.1. General evaluation of the national situation

A. Brucellosis general evaluation

History of the disease and/ or infection in the country

In Poland, after the war, the largest percentage of infected farms was observed in Western and Northern regions. Between 1948 and 1956 the tests for brucellosis covered only the nationalized large-scale holdings. Serological reactions were observed in 7.2-22.8% animals.
Between 1956 and 1966, around 350,000 to 1,000,000 cattle were tested annually and brucellosis was detected on average in 2.3% to 5.7% of nationalized holdings and in 0.32-1.7% of individual holdings. At the end of 1966 almost 12% of cattle in nationalized holdings were infected with bovine brucellosis and Brucella was detected bacteriologically in 24.4% of aborted embryos .
Between 1953 and 1956, due to the high percentage of herds where brucellosis was detected, it was decided to conduct vaccinations with S-19 vaccine. The bovine animals in selected state-owned and cooperative holdings were vaccinated. Within that period 266,000 bovine animals were vaccinated. The vaccinations were continued until 1966 when the Veterinary Department prohibited to use them in the regions of Eastern and central Poland. The planned bovine brucellosis control began on those regions in 1969, on the basis of the act of 13 November 1963 on infectious disease control. The infected cattle from individual holdings were slaughtered with the full compensation provided.
Between 1965 and 1967 the serological tests of cattle were conducted in Gdanskie, Lubelskie and Olsztynskie regions and in all districts bordering with Czechoslovakia in order to determine the epizootic situation in individual holdings . The conducted tests indicated that the percentage of cattle with positive reactions did not exceed 0.5%. From 1975 the control of brucellosis was conducted on the basis of the Ordinance of the Minister of Agriculture of 16 April on the obligation to report and control animal brucellosis. Bovine, sheep, goat and swine brucellosis is a compulsorily notifiable disease.
Animals recognized as infected or suspected of being infected, both in individual and in cooperative holdings, were depopulated with the compensation provided. The cattle infected with brucellosis in nationalized holdings were either depopulated or until 1975 transferred to the isolators.
Between 1975 and 1978 the serological tests covered from 5 to 7 million cattle. In total brucellosis was detected in 31,720 cattle which were subsequently slaughtered. It amounted to 0.06% of cattle in the country and 0.5% in nationalized holdings.
In 1978 the territory of the whole country, except for Gorzowskie and Zielonogorskie regions, was declared free of bovine brucellosis.
Only 10% of depopulated cattle came from the territory of 42 regions and 90% from the territory of the following 7 regions: Gorzowskie, Olsztynskie, Poznanskie, Szczecinskie and Zielonogorskie.
In 1980 by decision of the Minister of Agriculture the whole country was declared free of bovine brucellosis. The percentage of infected animals was lower than 0.5% and the percentage of infected holdings amounted to less than 0.2%.
In order to maintain the state achieved in 1980 periodical diagnostic tests and depopulation of animals recognized as infected was introduced as well as the concurrent ban on performing protective vaccinations in the areas covered by the tests.
The tests covered annually one third of bovine population aged over 12 months on the territory of a region.

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

The obligation to test aborted embryos was introduced in accordance with Article 42 (1) of the Act of 11 March 2004 on protection of animal health and control of infectious animal diseases (Journal of Laws of 2004 No 69, item 625).
From 1 May 2004, in relation to the European Union requirements, Poland has tested blood samples in one third of cattle herds on the territory of a district so that within 3 years all cattle herds in the district were tested. On the territory of one of the regions (Opolskie) the collective milk samples coming from the cows from one herd are tested.
For many years Brucella spp. have not been isolated from blood and milk samples.
The percentage of infected herds in particular years (it was assumed that there is one herd in one holding) amounted to, respectively:
0.006 % in 1999; 0.009 % in 2000; 0.005 % in 2001; 0.006 % in 2002; 0.002 % in 2003; 0.004% in 2004; 0.005% in 2005, 0.008% in 2006 and 0.0045% in 2007 (0.002% of new infected herds in 2007).
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 2003-2007, no Brucella was isolated.
In 2007, there were 454 notifications of abortions. Every of them was investigated by an official veterinarian.
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 2007 was 99,994% for herds which were tested in 2007.

Recent actions taken to control the zoonoses

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

Additional information

Additional information concerning other animal species:
If the swine brucellosis is suspected, the animals aged over 4 months are subject to serological tests.
In the case of males of pigs (boars) for reproduction, tests for brucellosis are compulsory during quarantine and each 12 months in the case of boars
Those tests are conducted according to the Directive 90/ 429 and the Ordinance of the Minister of Agriculture and Rural Development of 27 April 2004 on detailed veterinary requirements applicable to pig semen (Journal of Laws of 2004 No 100, item 1017).
Serological tests of sows for reproduction and the repopulation of herds on commercial pig fattening farms have a voluntary character.
In 2004, 3938 pigs were tested with a negative result.

In 2005,there is lack of data concerning pigs.
In 2006, 4683 pigs were tested with a negative result.
In 2007, 37775 pigs were tested with negative results.

2.6.2. Brucellosis in humans

2.6.3. Brucella in foodstuffs

2.6.4. Brucella in animals

A. Brucella abortus in bovine animals

Monitoring system

Sampling strategy

The tests are carried out across the entire territory of the Republic of Poland. The tests are carried out on bovine females and breeding bulls which are over 12 months old.
According to assumptions set out in The National Control Programme fo Bovine Brucellosis in 2007 sampling should have covered 1 632 806 animals in 268 949 herds (one third of the total number of herds). Considering the possibility of empty herds, testing of 1 583 822 animals was foreseen.

Frequency of the sampling

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

Methods of sampling (description of sampling techniques)

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

Case definition

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

Diagnostic/ analytical methods used

In brucellosis diagnosis the following serological tests are used:
-tube agglutination tests (OA)
-buffered plate agglutination tests
-complement fixation test
-microagglutination test
-ELISA (enzyme-linked immunosorbent assay) with a single serum sample
and ring test or ELISA test for milk samples.
Official tests are performed by the state laboratories controlled by the National Reference

Laboratory.
They are three-stage tests. At first the screening tests are performed - buffered plate agglutination tests, then the basic tests - tube agglutination and complement fixation tests and subsequently the additional tests – antiglobulin and microaglutination.

Vaccination policy

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

Control program/ mechanisms

The control program/ strategies in place

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

Measures in case of the positive findings or single cases

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

Notification system in place

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

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

At present, situation is stable, with decreasing tendency. In 2006 12 new positive herds were notified, whereas in 2007 - 9 infected herds.

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

There is a lack of the results of the examination of milk in retail for presence of Brucella spp.

Additional information

According to Commission Decision 2006/ 875/ EC, Polish bovine brucellosis eradicaation programme for 2007 did not receive Community co-financing.

B. Brucella melitensis in sheep

Status as officially free of ovine brucellosis during the reporting year

The entire country free

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

Free regions

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

Monitoring system

Sampling strategy

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

Frequency of the sampling

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

Type of specimen taken

Blood

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 samples' tests.These tests are carried out by complement fixation test as a confirmation of a prior positive result which was obtained by buffered plate agglutination test.

Diagnostic/ analytical methods used

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

Vaccination policy

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

Measures in case of the positive findings or single cases

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.

C. Brucella melitensis in goats

Status as officially free of caprine brucellosis during the reporting year

The entire country free

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

Free regions

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

Monitoring system

Sampling strategy

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

Frequency of the sampling

Annual sampling of 10% of goats.

Type of specimen taken

Blood

Methods of sampling (description of sampling techniques)

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

Case definition

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

Diagnostic/ analytical methods used

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

Vaccination policy

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

Measures in case of the positive findings or single cases

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

Notification system in place

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

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

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

Table Brucellosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Brucella spp.	B. abortus	B. suis	Brucella spp., unspecified	B. melitensis
Pigs	RVL	animal	985	0				
Bison								
(Polish bison (Bison bonasus))	RVL	animal	1	0				

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Surveillance						Investigations of suspect cases									
							Serological tests			Examination of bulk milk samples			Information about abortions			Epidemiological investigation						
																		Number of positive animals			
	Herds	Animals	Number of herds	%	Number of herds	%	Number of bovine herds tested	Number of animals tested	Number of infected herds tested	Number of bovine herds tested	Number of animals or pools tested	Number of infected herds	Number of notified abortions whatever cause	Number of isolations of Brucella infection	Number of abortions due to Brucella abortus	Number of animals tested with serological blood tests	Number of suspended herds	Serologically	BST	Number of animals examined microbio logically	Number of animals positive microbio logically
Lodzkie	74583	484385	37884	50.794	0	0	19904	102050	0	0	0	0	7	0	0	7	0	7	0	7	0
Mazowieckie	127675	963450	127673	99.998	2	0.002	35698	226854	2	0	0	0	20	0	0	15	0	21	3	9	0
Malopolskie	107097	281281	107097	100	0	0	27324	60834	0	0	0	0	17	0	0	0	0	24	0	0	0
Slaskie	28492	144388	28492	100	0	0	5834	29132	0	188	506	0	17	0	0	0	0	0	0	0	0
Lubelskie	107960	457974	33307	30.851	0	0	26834	88355	0	322	832	0	5	0	0	5	0	0	0	5	0
Podkarpackie	91170	195936	91170	100	0	0	22811	41643	0	0	0	0	13	0	0	19	0	7	0	12	0
Swietokrzyskie	61320	151078	61320	100	0	0	13233	34536	0	86	128	0	1	0	0	0	0	0	0	0	0
Podlaskie	68766	861157	18518	26.929	1	0.001	15691	185529	2	0	0	0	36	0	0	21	0	1	0	2	0
Wielkopolskie	61292	790889	61292	100	2	0.003	17187	150805	2	0	0	0	91	0	0	19	0	48	0	23	0
Zachodniopomorskie	11628	117077	11628	100	0	0	2846	38115	0	0	0	0	27	0	0	22	1	3	0	13	0
Lubuskie	6149	82600	6149	100	0	0	1486	17956	0	0	0	0	4	0	0	4	0	2	0	4	0
Dolnoslaskie	18693	130293	5599	29.952	0	0	4218	26933	0	0	0	0	39	0	0	0	0	0	0	0	0
Opolskie	12352	118122	11178	90.495	0	0	2251	22400	0	2341	10736	0	130	0	0	109	0	9	3	79	0
Kujawsko-Pomorskie	35279	445419	35278	99.997	3	0.009	10360	98700	3	0	0	0	8	0	0	39	1	15	0	3	0
Pomorskie	19202	162687	19202	100	0	0	7167	47363	0	0	0	0	36	0	0	0	0	1	0	0	0
Warminsko-Mazurskie	26834	441792	26833	99.996	1	0.004	7503	11737	1	0	0	0	22	0	0	19	0	32	0	13	0
Total	858492	5828528	682620	79.514	9	0.001	220347	1182942	10	2937	12202	0	473	0	0	279	2	170	6	170	0

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

Region	Total number of existing ovine / caprine		Officially free herds		Infected herds		Surveillance			Investigations of suspect cases				
	Herds	Animals	Number of herds	%	Number of herds	%	Number of herds tested	Number of animals tested	Number of infected herds	Number of animals tested with serological blood tests	Number of animals positive serologically	Number of animals examined microbio logically	Number of animals positive microbio logically	Number of suspended herds
Lodzkie	642	17848	642	100	0	0	227	2070	0	0	0	0	0	0
Mazowieckie	536	10243	536	100	0	0	19	433	0	1	0	0	0	0
Malopolskie	2265	89813	2265	100	0	0	1581	4278	0	0	0	0	0	0
Slaskie	505	8773	505	100	0	0	127	889	0	0	0	0	0	0
Lubelskie	690	21033	690	100	0	0	247	2033	0	0	0	0	0	0
Podkarpackie	889	17172	889	100	0	0	129	918	0	0	0	0	0	0
Swietokrzyskie	592	2643	592	100	0	0	48	1346	0	0	0	0	0	0
Podlaskie	951	18516	951	100	0	0	161	1515	0	0	0	0	0	0
Wielkopolskie	975	40258	975	100	0	0	210	4522	0	0	0	0	0	0
Zachodniopomorskie	245	8404	245	100	0	0	75	531	0	0	0	0	0	0
Lubuskie	350	5148	350	100	0	0	64	298	0	0	0	0	0	0
Dolnoslaskie	930	13066	930	100	0	0	159	1335	0	0	0	0	0	0
Opolskie	369	3027	369	100	0	0	99	292	0	1	0	1	0	0
Kujawsko-Pomorskie	840	26429	840	100	0	0	108	1685	0	0	0	0	0	0
Warminsko-Mazurskie	486	11111	486	100	0	0	286	1806	0	0	0	0	0	0
Pomorskie	1483	20326	1483	100	0	0	376	4250	0	0	0	0	0	0
Total	12748	313810	12748	100	0	0	3916	28201	0	2	0	1	0	0

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 2007 16 samples taken from animals were examined: 10 samples from chinchillas4 from hares, 1 from antelope and 1 from dog.
9 samples (>56%)were positive: 4 samples taken from hares (100%), 3 samples from chinchillas (>30%), 1 from antelope (100%) and 1 from dog (100%). Only 1 sample taken from was determined as Y.enterocolitica, others were unspecified.

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 2007, 5 samples were taken by the operator from bovine meat products - none of them were positive.

2.7.2. Yersiniosis in humans

2.7.3. Yersinia in foodstuffs

Table Yersinia in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Yersinia spp.	Y. enterocolitica	Yersinia spp., unspecified	Y. enterocolitica - O:3	Y. enterocolitica - O:9	Y. enterocolitica - unspecified
Meat from bovine animals										
meat products	operator	single	200g	5	0					

2.7.4. Yersinia in animals

A. Yersinia enterocolitica in pigs

Monitoring system

Sampling strategy

Animals at farm

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

Animals at slaughter (herd based approach)

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

Control program/ mechanisms

The control program/ strategies in place

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

Table Yersinia in animals

	Source of information	Sampling unit	Units tested	Total units positive for Yersinia spp.	Y. enterocolitica	Yersinia spp., unspecified	Y. enterocolitica - O:9	Y. enterocolitica - O:3	Y. enterocolitica - unspecified
Dogs		animal	1	1	1				
Antelopes									
- at zoo		animal	1	1					1
Hares		animal	4	4					4
Chinchillas		animal	10	3					3

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.
Human cases are notified due to consumption of pig or wild boar meat which was not subjected to the inspection, mainly during weddings.
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.

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

Almost twofold increase in number of trichinellosis in pigs in 2007 comparedto 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 hunte 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

2.8.3. Trichinella in animals

A. 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).

Frequency of the sampling

General

Each pig carcass.

Type of specimen taken

General

According to EU legislation (Regulation 2075/ 2005).

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

Digestive method

Preventive measures in place

All carcasses must be sampled and can not enter the food chain before obtaining the results.

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

From 23 015 105 of pigs' carcasses tested, 52 were positive for Trichinella spp., 33 were defined as T.spiralis.

Breeding sows and boars

There was no positive case in breeding pigs.

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

In 2007, 23 015 105 pig carcases were tested, among which 52 were positive for Trichinella spp. Im comparision to 2006 almost tqofold increase in positive cases of trichinellosis was observed.

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

Apart from almost twofold increase in positive cases in pigs , also considerabely incrrease in number of human trichinellosis was observed in 2007, in comparision to 2006.

B. Trichinella in horses

Monitoring system

Sampling strategy

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

Frequency of the sampling

Each carcase.

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 2007 from 34740 carcases examined.

Measures in case of the positive findings or single cases

Carcass is destroyed.

Notification system in place

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

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

No cases of trichinellosis in horses was notified in prevoius years.

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total units positive for Trichinella spp.	T. spiralis	Trichinella spp., unspecified
Pigs	slaughterhouse, RVL	animal	23015105	52	33	19
fattening pigs						
raised under controlled housing conditions in integrated production system	slaughterhouse, RVL	animal	12235034	44	26	18
not raised under controlled housing conditions in integrated production system	slaughterhouse, RVL	animal	1333823	1	1	
breeding animals						
unspecified						
sows and boars	slaughterhouse, RVL	animal	337345	0		
Solipeds, domestic	slaughterhouse, RVL	animal	37521	0		
horses	slaughterhouse, RVL	animal	34740	0		
Wild boars						
wild	RVL	animal	86146	235	183	52
Deer						
wild	RVL	animal	16	0		
Moose						
wild	RVL	animal	1	0		

2.9. ECHINOCOCCOSIS

2.9.1. General evaluation of the national situation

A. Echinococcus spp. general evaluation

History of the disease and/ or infection in the country

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

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

In 2002 there were 867 105 cases found, and in 2003 there were 974 429 cases, which indicated that there was a rising trend in the cases found in the slaughter animals.
In 2004 from 1 280 960 cattle slaughtered there were 140 cases of echincoccus, in 29 862 sheep–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 echonococcus 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%).

2.9.2. Echinococcosis in humans

2.9.3. Echinococcus in animals

Table Echinococcus in animals

	Source of information	Sampling unit	Units tested	Total units positive for Echinococcus spp.	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Cattle (bovine animals)	RVL, slaughterhouse	animal	908806	58			58
Sheep	RVL, slaughterhouse	animal	17729	1570			1570
Goats	RVL, slaughterhouse	animal	40	0			
Pigs	RVL, slaughterhouse	animal	18633686	366588		553	366035
Wild boars	RVL	animal	11476	0			
Minks	RVL	animal	40356	26			26

2.10. TOXOPLASMOSIS

2.10.1. General evaluation of the national situation

A. Toxoplasmosis general evaluation

History of the disease and/ or infection in the country

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

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

In 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.

2.10.2. Toxoplasmosis in humans

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	94	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 1992r, in Poland the biggest number of 3084 cases of rabies was stated, including 2549 cases among wild animals (2079 cases in foxes). Due to this fact, in 1993, on the whole territory of Poland, an action of oral vaccination of living foxes against rabies was initiated.

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

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

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

Recent actions taken to control the zoonoses

Pursuant to the Act of 11 March 2004 on animal health protection and eradication of infectious animal diseases (Journal of Laws, No 69, item 625), rabies is an infectious animal disease subject to obligatory eradication.
Since 2002 vaccination campaigns cover whole territory of Poland.
Pursuant to the regulation of the Ministry of Agriculture and Rural Development of June 2, 2004 on detailed rules and manner of conducting preventive vaccinations of wild foxes against rabies (Dz.U. of 2004 No. 142, item 1509), the vaccinations of wild foxes are conducted by the voivodship veterinary officers. According to the abovementioned regulation preventive vaccinations are realized twice a year in spring and autumn campains by plane or manual distribution of the vaccine at the forest areas and everywhere, where the wild foxes live.
As a result of conducting the vaccination campaigns the continuous increase of cases has been observed.
To check the result of performed vaccination campaigns the monitoring tests (RFFIT, TC) for the determination of effectiveness of oral vaccination of wild foxes, are carried out based on the Ordinance of the Minister of Agriculture and Rural Rural Development of December 17, 2004 determining certain diseases, manner for carrying out the control and scope of control tests of animals' infections (Dz. U. of 2004 No. 282 item 2813 as amended). According to the regulation in order to control rabies samples of cerebral tissue, serum, and mandibles shall be taken for tests per year from 8 foxes shot at each 100 km2 of the premisses of wild foxes' habitat covered by preventive vaccination.
Monitoring test of the efficiency of oral immunization of foxes is carried out while using the following methods:
- immunofluorescence of brain imprints–test for rabies,
- bone grinding from mandible–test for the presence of tetracycline (TC),
- RFFIT test–defining the name for the virus of rabies in blood serum (clot from the heart or liquid from the thoracic cavity),
- collection, preparation and analysis of epidemiologic data on cases of rabies diagnosed in the territory where the vaccination was placed,
- differentiation of strains in the aspect of wild-type strain: vaccination strain
- genotyping of strains.

Additional information

Routine diagnosis of rabies in animals of all species is carried out in 16 regional diagnostic laboratories (Veterinary Hygiene Laboratories) and in the reference laboratory (Department of Virology of the National Veterinary Institute in Pulawy).
Applied tests:
- direct immunofluorescence (FAT test) of mind imprints with monovalent antiantinucleocapsid conugate
- virus isolation on mice (MIT mouse isolation test)
- virus isolation in neuroblastoma cell farming
- genotyping of isolates of rabies virus (only reference laboratory)
- serological test–RFFIT test

In 2007, there were 42 cases of rabies in foxes, 7 in raccoon dogs, 6 in cattle, 3 in cats, 3 in dogs, 3 in bats,1 in badger, 1 in weasel and 1 case in marten.

2.11.2. Lyssavirus (rabies) in animals

A. Rabies in dogs

Monitoring system

Sampling strategy

Samples are taken only post mortem after suspicion of rabies or after biting by a dog.

Case definition

Positive IF test.

Vaccination policy

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

Measures in case of the positive findings or single cases

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

Notification system in place

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

Results of the investigation

Investigations of the human contacts with positive cases

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

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

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

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

No human cases of rabies were reported in reporting year.

Table Rabies in animals

	Source of information	Sampling unit	Units tested	Total units positive for Lyssavirus (rabies)	Unspecified Lyssavirus	European Bat Lyssavirus - unspecified	Classical rabies virus (genotype 1)
Cattle (bovine animals)	RVL	animal	74	6			6
Sheep	RVL	animal	2	0			
Goats	RVL	animal	4	0			
Pigs	RVL	animal	1	0			
Solipeds, domestic	RVL	animal	7	0			
Dogs	RVL	animal	540	3			3
stray dogs	RVL	animal	171	0			
Cats	RVL	animal	673	3			3
stray cats	RVL	animal	325	3			3
Bats							
wild	RVL	animal	104	3		3	
Foxes							
wild	RVL	animal	16044	42	13		29
Raccoon dogs							
wild	RVL	animal	94	7	2		5
Raccoons							
wild	RVL	animal	3	0			
Badgers							
wild	RVL	animal	37	1			1
Marten							
wild	RVL	animal	164	1			1
Wild boars							
wild	RVL	animal	15	0			
Deer	RVL	animal	7	0			
wild							
roe deer	RVL	animal	116	0			
red deer	RVL	animal	4	0			
fallow deer	RVL	animal	2	0			
Squirrels							
wild	RVL	animal	39	0			

Rats	RVL	animal	23	0			
Ferrets	RVL	animal	27	0			
Mice	RVL	animal	13	0			
Weasel	RVL	animal	36	1	1		
Hedgehogs	RVL	animal	19	0			
Hamsters	RVL	animal	14	0			
Hares	RVL	animal	7	0			
Wild animals							
(others)	RVL	animal	62	0			

2.12. Q-FEVER

2.12.1. General evaluation of the national situation

2.12.2. Coxiella (Q-fever) in animals

A. Coxiella spp., unspecified in animal

Monitoring system

Sampling strategy

There is no monitoring system in place in Poland.

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)	RVL	animal	91	2	2
Sheep	RVL	animal	1		

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1. ENTEROCOCCUS, NON-PATHOGENIC

3.1.1. General evaluation of the national situation

3.1.2. Antimicrobial resistance in Enterococcus, non-pathogenic isolates

3.2. ESCHERICHIA COLI, NON-PATHOGENIC

3.2.1. General evaluation of the national situation

A. Escherichia coli general evaluation

History of the disease and/ or infection in the country

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

Sampling was performed as a part of the official controls and by the operators.In 2007, only isolates originated from animals were examined.

Additional information

Data on this subject included in the report are the results of the tests carried out within the frame of multiannual programme 2003-2008 “Protection of animal and public health”(National Veterinary Research Institute).

3.2.2. Escherichia coli, non-pathogenic in animals

A. E.coli in animal

Monitoring system

Sampling strategy

Samples were taken from healthy animals at slaughterhouses.
Pigs were sampled at 8 slaughterhouses, whereas cattle, broilers,
turkeys and geese at, respectively, 10, 5, 5, and 4 slaughterhouses. Rectal swabs (cattle and pigs) or a caecum contents (poultry) were taken and subjected to the laboratory by district veterinary officers.

Frequency of the sampling

Samples were taken randomly to keep representative nature of survey.

Type of specimen taken

Other: Rectal swabs (cattle and pigs) or a caecum contents (poultry)

Methods of sampling (description of sampling techniques)

Rectal swabs (cattle and pigs) or a caecum contents (poultry)

Diagnostic/ analytical methods used

E coli was isolated using a direct streak on MacConkey agar. The plates were incubated in 37°C for 18±2h and a single lactose-fermenting colony was selected for biochemical identification. Agar diffusion method according to CLSI recommendation was used for antimicrobial resistance tests. Growth inhibition zone diameters were automatically read.

Measures in case of the positive findings or single cases

Antimicrobial treatment

Notification system in place

E.coli is not obligatory registered pathogen.

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

Certain year-to-year variations in the occurrence of antimicrobial
resistance in / E. coli/ were noted . An increasing trend in / E. coli/ resistance was observed in the strains originating from all animals but broilers. Resistance to ampicillin, streptomycin, sulphonamides and tetracycline were the most common in / E. coli / and cephalosporins were the most active antimicrobial. Host animal species and animal production system highly influences the level of resistance. Cattle are usually extensively reared whereas pigs and chicken are mostly housed under intensive conditions resulting in a higher proportion of resistance.
E.coli isolated from poultry showed higher resistance than those from swine.

Quinolone resistance in broilers and other poultry species was higher than in swine isolates.

Additional information

The need for data on antimicrobial resistance was recognised in Poland in early 2000s. The five-year (2003-2008) resistance monitoring project
lunched at the National Veterinary Research Institute covers not only E. coli, but also Salmonella, Staphylococcus, and Streptococcus. The study was designed to collect yearly up to 1000 samples from healthy animals sampled at slaughter in selected slaughterhouses located in 21 districts.

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

Table Antimicrobial susceptibility testing of E. coli in Pigs - fattening pigs - at slaughterhouse - quantitative data [Diffusion method]

	E. coli
	Pigs - fattening pigs - at slaughterhouse
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	162

Antimicrobials:	Break point	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	>=35
	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																																
Aminoglycosides																																	
Gentamicin	12	159	0															10	10	31	44	29	18	13	2	2							
Streptomycin	11	156	21	6			9	2	4	7	7	6	6	15	25	24	19	18	3	3	2												
Amphenicols																																	
Chloramphenicol	13	162	0												1									5	16	32	32	34	22	10	3		7
Fluoroquinolones																																	
Enrofloxacin	16	162	2	1										1		1				1	4	1	1	3		2	1	11	15	22	1	3	94
Penicillins																																	
Ampicillin	13	161	20	16			1	1		1	1	3	2	1	4	4	17	25	20	18	14	10	12	6	3		1	1					
Quinolones																																	
Nalidixic acid	13	158	6	4			1				1					1		3		4	1	7	24	40	15	20	10	11	9	3			4
Sulfonamides																																	
Sulfonamide	12	159	12	12										1	1					1				2	1	5	10	23	26	14	3	1	59
Tetracyclines																																	
Tetracyclin	14	161	27	22			5							1					2	10	22	18	20	29	16	9	4		1				2
Trimethoprim	10	146	5	5						1				1		1		2						7	7	10	25	14	16	22	4	1	30

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

	E. coli
	Gallus gallus (fowl) - broilers - at slaughterhouse - Monitoring
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	225

	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																																
Antimicrobials:	**Break point**	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Aminoglycosides																																	
Gentamicin	12	221	7	2			1		3	1	8	4	3					9	16	40	49	40	17	20	5	3							
Streptomycin	11	222	94	76			11	1	6	7	5	9	5	16	29	23	12	13	5	1	2	1											
Amphenicols																																	
Chloramphenicol	13	223	21	17			2		1	1					2							1	3	14	24	36	34	44	19	6			19
Fluoroquinolones																																	
Enrofloxacin	16	223	51	16			17	6	2	2	1	2	2	3	6	7	7	7	2	13	6	8	9	23	6	2	3	4	6	19			44
Penicillins																																	
Ampicillin	13	222	119	116	2		1							2	4	4	10	20	14	11	17	5	4	6	3	1		1					1
Quinolones																																	
Nalidixic acid	13	222	146	124		10	9	1	2				1			1	2	2			2	9	5	17	7	4	6		3	2	1		14
Sulfonamides																																	
Sulfonamide	12	224	97	94	1	1	1					1						1						1	1	8	11	13	16	16	4	1	54
Tetracyclines																																	
Tetracyclin	14	216	123	100			20			1	2		1	1	3	1	2	1	3	5	14	9	6	12	11	4	6	3	3	4	1		3
Trimethoprim	10	221	54	54										1								2	2	9	11	14	17	32	16	22	4	2	35

Table Antimicrobial susceptibility testing of E. coli in Cattle (bovine animals) - at slaughterhouse - quantitative data [Diffusion method]

	E. coli
	Cattle (bovine animals) - at slaughterhouse
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	264

Antimicrobials:	Break point	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	>=35
				Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																													
Aminoglycosides																																	
Gentamicin	12	260	0															18	31	46	46	40	43	32	3			1					
Streptomycin	11	251	13	3			10			1		6	7	41	45	59	33	34	2	5	4	1											
Amphenicols																																	
Chloramphenicol	13	259	1	1											1	1	1				1	1		20	31	54	54	45	33	5		2	9
Fluoroquinolones																																	
Enrofloxacin	16	261	0																		1				1	2	4	6	17	45	5	1	179
Penicillins																																	
Ampicillin	13	260	20	16				1		1	2	2	2	9	9	13	18	51	28	30	21	19	13	16	6	1	1						1
Quinolones																																	
Nalidixic acid	13	257	2	2								2									3	15	25	58	27	38	34	21	13	10			9
Sulfonamides																																	
Sulfonamide	12	259	1	1										1	1							1	1	2	5	10	22	20	16	39	4		136
Tetracyclines																																	
Tetracyclin	14	257	19	11			7	1								2	1	1	1	11	39	15	26	43	22	17	22	18	9	8			3
Trimethoprim	10	253	1	1								1	1	2	1					2	1		5	10	17	19	29	31	32	33	3	1	64

Table Antimicrobial susceptibility testing of E. coli in Geese - quantitative data [Diffusion method]

	E. coli
	Geese
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	39

Antimicrobials:	Break point	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	>=35
			Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																														
Aminoglycosides																																	
Gentamicin	12	39	9	9												1	1	8	4	4	1	3	5	2	1								
Streptomycin	11	37	5	4			1			2	1	1	5	8	5	5	3	1	1														
Amphenicols																																	
Chloramphenicol	13	39	4	3							1											1		4	6	4	5	6	6	3			
Fluoroquinolones																																	
Enrofloxacin	16	39	3				2			1											1	1		3	1		3	1	3	6			17
Penicillins																																	
Ampicillin	13	39	9	9												1	1	8	4	4	1	3	5	2	1								
Quinolones																																	
Nalidixic acid	13	39	9	8					1								1			1	2	1	3	8	3	1	5	3	1	1			
Sulfonamides																																	
Sulfonamide	12	39	12	12																					1	2		1	4	4			15
Tetracyclines																																	
Tetracyclin	14	37	11	10			1												1	2	1		2	5	3	6	2	1	1				2
Trimethoprim	10	38	4	3		1																		3	2	7	5	4	3	5	1		4

Table Antimicrobial susceptibility testing of E. coli in animals

n = Number of resistant isolates												
	E. coli											
	Geese		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - broilers	
Isolates out of a monitoring programme	yes		yes		yes				yes		yes	
Number of isolates available in the laboratory	39		264		162				73		225	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides												
Gentamicin	39	0	260	0	159	0			73	4	221	7
Streptomycin	37	5	251	13	156	21			73	20	222	94
Amphenicols												
Chloramphenicol	39	3	259	1	160	0			73	7	223	21
Fluoroquinolones												
Enrofloxacin	39	3	261	0	162	2			73	17	223	51
Fully sensitive	14		196		98				16		25	
Penicillins												
Ampicillin	39	9	260	20	161	20			73	35	222	119
Quinolones												
Nalidixic acid	39	9	257	2	158	2			72	36	222	146
Resistant to 1 antimicrobial	11		53		35				8		32	
Resistant to 2 antimicrobials	3		11		12				6		29	
Resistant to 3 antimicrobials	4		2		6				5		27	
Resistant to 4 antimicrobials	3		1		5				5		16	
Resistant to >4 antimicrobials	4		1		6				33		96	
Sulfonamides												
Sulfonamide	39	12	259	1	159	12			73	31	224	97
Tetracyclines												
Tetracyclin	39	11	257	19	161	27			72	46	216	123
Trimethoprim	38	4	253	1	146	5			73	30	221	54

Table Antimicrobial susceptibility testing of E. coli in Turkeys - quantitative data [Diffusion method]

	E. coli
	Turkeys
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	73

Antimicrobials:	Break point	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	>=35
				Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																													
Aminoglycosides																																	
Gentamicin	12	73	4	4							1							8	14	10	13	14	8		1								
Streptomycin	11	73	20	15	1	1	3				1	1	3	8	12	14	10	3	1														
Amphenicols																																	
Chloramphenicol	13	73	10	5	1				1		3	1									1	1	1	10	10	11	13	10	2	2			1
Fluoroquinolones																																	
Enrofloxacin	16	73	17	3			13			1							1	1	1	4	5	1	3	2	1	1		3	4	7	3		19
Penicillins																																	
Ampicillin	13	73	35	33		1	1							4	3	1	4	12	5	2	3	3	1										
Quinolones																																	
Nalidixic acid	13	72	36	33		2	1						1			2			1	1	3	4	8	4	4	2	3	3					
Sulfonamides																																	
Sulfonamide	12	73	31	31																			1	4	1	7	4	4	4	6	1	1	9
Tetracyclines																																	
Tetracyclin	14	72	46	36			9			1										4	6	8	4	1					1				2
Trimethoprim	10	73	30	30																1				5	7	2	9	4	1	12			2

Table Breakpoints used for antimicrobial susceptibility testing in Animals

Test Method Used

Disc diffusion

Standards used for testing

NCCLS

Escherichia coli, non-pathogenic	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Amphenicols										
Chloramphenicol	CLSI						30	18		13
Florfenicol										
Tetracyclines										
Tetracyclin	CLSI						30	19		14
Fluoroquinolones										
Ciprofloxacin										
Enrofloxacin	CLSI						5	23		16
Quinolones										
Nalidixic acid	CLSI						30	19		13
Trimethoprim	CLSI						5	16		10
Sulfonamides										
Sulfonamide	CLSI						200	17		12
Aminoglycosides										
Streptomycin	CLSI						10	15		11
Gentamicin	CLSI						10	15		12
Neomycin										
Kanamycin										
Trimethoprim + sulfonamides										
Cephalosporins										
Cefuroxim	CLSI						30	18		14
3rd generation cephalosporins										
Penicillins										
Ampicillin	CLSI						10	17		13

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1. HISTAMINE

4.1.1. 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 in accordance with requirement set out in Regulation 2073/ 2005.

4.1.2. Histamine in foodstuffs

A. Histamine in foodstuffs

Monitoring system

Sampling strategy

Samples for presence of Histamine were taken from fishes (fresh, smoked or pickled) mainly by the operators or from imported products.

Frequency of the sampling

Randomly.

Methods of sampling (description of sampling techniques)

Batches were sampled of 1000g in weight.

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 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	RVL	batch	1kg	37	0	18			
Fishery products which have undergone enzyme maturation treatment in brine	RVL	batch	1kg	45	0	9	18		
Fishery products, unspecified	RVL	batch		93	0	93			

4.2. ENTEROBACTER SAKAZAKII

4.2.1. General evaluation of the national situation

4.2.2. Enterobacter sakazakii in foodstuffs

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.

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.

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, but results of tests carried out by the initiative of the operators are not always available.

Frequency of the sampling

Randomly

Control program/ mechanisms

The control program/ strategies in place

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

Measures in case of the positive findings or single cases

Improvemets in production hygiene and selection of raw material.

Notification system in place

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

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

In 2007, 79 samples were taken, most of them from soft and semi-soft cheese (59), none of them were positive for Staphylococcal enterotoxins.
Because of lack of historical data evaluation of trends is not possible.

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					
soft and semi-soft	RVL	batch	250g	1	0
made from pasteurised milk	RVL	batch		59	0
hard					
made from pasteurised milk	RVL	batch	250g	16	0
Dairy products (excluding cheeses)					
milk powder and whey powder	RVL	batch		3	0

5. FOODBORNE OUTBREAKS

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

A. Foodborne outbreaks

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

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. Voivodship 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 Voivodship 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 organisational structure of surveillance is based on 318 Poviat Sanitary Epidemiological Stations at local level and 16 Voivodship SanitaryEpidemiological Stations at Voivodship level and 15 Border SanitaryEpidemiological Stations. The Department of Epidemiology, at the National Institute of Public Health - National Institute of Hygiene (NIZP-NIH) in Warsaw, performs analyses for the whole country.
The outbreaks are detected and investigated at Poviat level. Within 24 hours State Poviat Sanitary Inspector sends (on a specific application form) initial notification of detected outbreak to State Voivodship Sanitary Inspector. Depending on the situation and the epidemiological threat, State Voivodship Sanitary Inspector in cooperation with Veterinary Inspection bodies decides on the course of action taken at Voivodship level to control the outbreak. The last step of each investigation is final report, which is sent to State Voivodship Sanitary Inspector. The State Voivodship Sanitary Inspector revises and verifies the report as well as prepares summary report, which is sent to the Department of Epidemiology of the National Institute of Public Health - National Institute of Hygiene. Department of Epidemiology NIZP-NIH collects, analyzes, verifies and disseminates information regarding the outbreaks from the whole country. Summary with the information e.g. on number of cases food origin is systematically placed on widely accessible NIZP-NIH Websites

Description of the types of outbreaks covered by the reporting:

In accordance with the European directive on zoonoses 2003/ 99/ EC the following outbreak definition is used: an incidence, observed under given circumstances, of two or more human cases of the same disease and/ or infection, or a situation in which the observed number of cases exceeds the expected number and where the cases are linked, or are probably linked, to the same food source
The reporting system covers the household outbreak and general outbreaks.

National evaluation of the reported outbreaks in the country:

Trends in numbers of outbreaks and numbers of human cases involved

The estimated incidence of human cases of Salmonella in 2007 is about 40 cases/ I00.000 inhabitants. In 2007 the numbers of Salmonella outbreaks associated with eggs and eggs products were 74. Salmonella Enteritidis was causative agent in almost all reported Salmonella outbreaks.
In Poland in 2007 a total number of 560 foodborne infections and intoxications outbreaks involving 6611 cases were reported.

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

The causative agent was isolated in the incriminated foodstuff or epidemiologically suspected in 73% of the outbreaks. The most frequently causative agent identified in the outbreaks was Salmonella (45 %) and the predominant serotype was S.Enteritidis (42% of the outbreaks).

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

More than 50% of the reported outbreaks were linked to private households.
Salmonellosis outbreaks were mainly related to the consumption of eggs from backyard flocks with only few cases from caterers.

Evaluation of the severity and clinical picture of the human cases

The acute diarrhea predominates in clinical picture of human cases. In 2007 about 24 % of reported cases from the outbreaks were hospitalized.

Control measures or other actions taken to improve the situation

Eggs employed by all catering facilities are compulsorily submitted to either pasteurization or ultra violet treatment.
Due to the Polish culinary preferences of eating desserts made from raw eggs, additionally to the monitoring programme of the occurrence of pathogenic bacteria in food on the market the education programms for consumers were implemented as complementary measures to limit the transmission of salmonellosis

Additional information

In Poland the frame of the cooperation between authorities involved in investigation and control of human outbreak is setup by the following legislation:
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

Foodborne Outbreaks: summarized data

	Total number of outbreaks	Number of possible outbreaks	Number of verified outbreaks
Bacillus	1	0	1
Campylobacter	3	0	3
Clostridium	8	0	8
Escherichia coli, pathogenic	4	1	3
Foodborne viruses	67	67	0
Listeria	0	0	0
Other agents	16	12	4
Parasites	13	5	8
Salmonella	251	129	122
Staphylococcus	11	7	4
Unknown	186	185	1
Yersinia	0	0	0

Verified Foodborne Outbreaks: detailed data

B. cereus

	Value
Code	0303
Subagent Choice	
Outbreak type	General
Human cases	22
Hospitalized	1
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in implicated food
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

C. jejuni

	Value
Code	0418
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	0
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

C. jejuni

	Value
Code	0539
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	0
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

C. jejuni

	Value
Code	0534
Subagent Choice	
Outbreak type	Unknown
Human cases	unknown
Hospitalized	unknown
Deaths	unknown
Foodstuff implicated	Unknown
More Foodstuff	
Type of evidence	
Setting	Unknown
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	
Outbreaks	1
Comment	

C. botulinum

	Value
Code	0043
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

C. botulinum

	Value
Code	0413
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	1
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

C. botulinum

	Value
Code	0493
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Fish and fish products
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

C. botulinum

	Value
Code	0575
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

C. botulinum

	Value
Code	0181
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

C. botulinum

	Value
Code	0217
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

C. botulinum

	Value
Code	0491
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

C. botulinum

	Value
Code	0541
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

E.coli, pathogenic, unspecified

	Value
Code	0377
Subagent Choice	
Outbreak type	General
Human cases	9
Hospitalized	0
Deaths	0
Foodstuff implicated	Tap water, including well water
More Foodstuff	
Type of evidence	Laboratory detection in implicated food
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

E.coli, pathogenic, unspecified

	Value
Code	0439
Subagent Choice	
Outbreak type	Household
Human cases	4
Hospitalized	2
Deaths	0
Foodstuff implicated	Tap water, including well water
More Foodstuff	
Type of evidence	Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Enteropathogenic E. coli (EPEC)

	Value
Code	0548
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	
Outbreaks	1
Comment	

Mushroom toxins

	Value
Code	0313
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	Toxic mushroom
Type of evidence	Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Mushroom toxins

	Value
Code	0431
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	Toxic mushroom
Type of evidence	Analytical epidemiological evidence
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Mushroom toxins

	Value
Code	0447
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	Toxic mushroom
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Mushroom toxins

	Value
Code	0511
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	1
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	Toxic mushroom
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

T. spiralis

	Value
Code	0116
Subagent Choice	
Outbreak type	General
Human cases	12
Hospitalized	1
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	wild boar
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

T. spiralis

	Value
Code	0222
Subagent Choice	
Outbreak type	General
Human cases	224
Hospitalized	87
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Trichinella spp., unspecified

	Value
Code	0440
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	1
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	Wild boar
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Trichinella spp., unspecified

	Value
Code	0549
Subagent Choice	
Outbreak type	General
Human cases	4
Hospitalized	0
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	Wild boar
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Trichinella spp., unspecified

	Value
Code	0166
Subagent Choice	
Outbreak type	Household
Human cases	6
Hospitalized	5
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Trichinella spp., unspecified

	Value
Code	0467
Subagent Choice	
Outbreak type	Household
Human cases	9
Hospitalized	9
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	Wild boar
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Trichinella spp., unspecified

	Value
Code	0007
Subagent Choice	
Outbreak type	General
Human cases	14
Hospitalized	7
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	Wild boar
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Trichinella spp., unspecified

	Value
Code	0562
Subagent Choice	
Outbreak type	General
Human cases	20
Hospitalized	20
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	Wild boar
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

S. Anatum

	Value
Code	0343
Subagent Choice	
Outbreak type	General
Human cases	26
Hospitalized	unknown
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Camp, picnic
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

S. Anatum

	Value
Code	0478
Subagent Choice	
Outbreak type	General
Human cases	5
Hospitalized	0
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff	Bovine meat and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0019
Subagent Choice	
Outbreak type	Household
Human cases	8
Hospitalized	4
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0005
Subagent Choice	
Outbreak type	Household
Human cases	4
Hospitalized	0
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0047
Subagent Choice	
Outbreak type	General
Human cases	40
Hospitalized	3
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0127
Subagent Choice	
Outbreak type	General
Human cases	16
Hospitalized	0
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0183
Subagent Choice	
Outbreak type	General
Human cases	7
Hospitalized	7
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0185
Subagent Choice	
Outbreak type	General
Human cases	20
Hospitalized	10
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0188
Subagent Choice	
Outbreak type	Household
Human cases	9
Hospitalized	4
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Unknown
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0192
Subagent Choice	
Outbreak type	General
Human cases	30
Hospitalized	6
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Infected food handler
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0193
Subagent Choice	
Outbreak type	General
Human cases	16
Hospitalized	6
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Infected food handler
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0209
Subagent Choice	
Outbreak type	Household
Human cases	9
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Infected food handler
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0215
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0213
Subagent Choice	
Outbreak type	General
Human cases	15
Hospitalized	8
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0218
Subagent Choice	
Outbreak type	General
Human cases	8
Hospitalized	3
Deaths	0
Foodstuff implicated	Dairy products (other than cheeses)
More Foodstuff	cream made from pasteurized milk and raw eggs
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	219
Subagent Choice	
Outbreak type	General
Human cases	6
Hospitalized	5
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0226
Subagent Choice	
Outbreak type	General
Human cases	9
Hospitalized	3
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0273
Subagent Choice	
Outbreak type	General
Human cases	24
Hospitalized	6
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0277
Subagent Choice	
Outbreak type	Household
Human cases	7
Hospitalized	0
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0253
Subagent Choice	
Outbreak type	Household
Human cases	4
Hospitalized	4
Deaths	0
Foodstuff implicated	Dairy products (other than cheeses)
More Foodstuff	Ice cream
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0258
Subagent Choice	
Outbreak type	General
Human cases	47
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Hospital or medical care facility
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0267
Subagent Choice	
Outbreak type	Household
Human cases	12
Hospitalized	4
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0279
Subagent Choice	
Outbreak type	Household
Human cases	4
Hospitalized	4
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0282
Subagent Choice	
Outbreak type	General
Human cases	32
Hospitalized	0
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Hospital or medical care facility
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Cross-contamination
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0283
Subagent Choice	
Outbreak type	Household
Human cases	4
Hospitalized	1
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0324
Subagent Choice	
Outbreak type	Household
Human cases	10
Hospitalized	6
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0339
Subagent Choice	
Outbreak type	General
Human cases	8
Hospitalized	0
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0344
Subagent Choice	
Outbreak type	Household
Human cases	6
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0370
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0379
Subagent Choice	
Outbreak type	Household
Human cases	5
Hospitalized	4
Deaths	0
Foodstuff implicated	Dairy products (other than cheeses)
More Foodstuff	Ice cream
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0390
Subagent Choice	
Outbreak type	General
Human cases	19
Hospitalized	5
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0452
Subagent Choice	
Outbreak type	General
Human cases	11
Hospitalized	0
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0461
Subagent Choice	
Outbreak type	General
Human cases	11
Hospitalized	8
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0471
Subagent Choice	
Outbreak type	Household
Human cases	4
Hospitalized	3
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0476
Subagent Choice	
Outbreak type	General
Human cases	15
Hospitalized	3
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0480
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0483
Subagent Choice	
Outbreak type	General
Human cases	10
Hospitalized	1
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0516
Subagent Choice	
Outbreak type	General
Human cases	13
Hospitalized	11
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0286
Subagent Choice	
Outbreak type	Household
Human cases	10
Hospitalized	3
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0290
Subagent Choice	
Outbreak type	General
Human cases	16
Hospitalized	3
Deaths	0
Foodstuff implicated	Unknown
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0308
Subagent Choice	
Outbreak type	Household
Human cases	5
Hospitalized	0
Deaths	0
Foodstuff implicated	Dairy products (other than cheeses)
More Foodstuff	Ice cream
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0326
Subagent Choice	
Outbreak type	General
Human cases	21
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0381
Subagent Choice	
Outbreak type	General
Human cases	67
Hospitalized	17
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0392
Subagent Choice	
Outbreak type	General
Human cases	16
Hospitalized	9
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0414
Subagent Choice	
Outbreak type	Household
Human cases	11
Hospitalized	3
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0477
Subagent Choice	
Outbreak type	General
Human cases	14
Hospitalized	3
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0522
Subagent Choice	
Outbreak type	General
Human cases	5
Hospitalized	5
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0524
Subagent Choice	
Outbreak type	General
Human cases	49
Hospitalized	7
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Infected food handler
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0531
Subagent Choice	
Outbreak type	Household
Human cases	4
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0554
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0574
Subagent Choice	
Outbreak type	General
Human cases	10
Hospitalized	7
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Cross-contamination
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0147
Subagent Choice	
Outbreak type	Household
Human cases	14
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0012
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0038
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Fish and fish products
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0172
Subagent Choice	
Outbreak type	Household
Human cases	7
Hospitalized	7
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff	Raw meat and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0200
Subagent Choice	
Outbreak type	General
Human cases	12
Hospitalized	2
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0109
Subagent Choice	
Outbreak type	Household
Human cases	7
Hospitalized	1
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff	Raw meat and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0112
Subagent Choice	
Outbreak type	Household
Human cases	6
Hospitalized	5
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0225
Subagent Choice	
Outbreak type	General
Human cases	19
Hospitalized	6
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0198
Subagent Choice	
Outbreak type	General
Human cases	52
Hospitalized	7
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0216
Subagent Choice	
Outbreak type	General
Human cases	15
Hospitalized	7
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0224
Subagent Choice	
Outbreak type	Household
Human cases	8
Hospitalized	4
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0207
Subagent Choice	
Outbreak type	Household
Human cases	5
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0245
Subagent Choice	
Outbreak type	Household
Human cases	8
Hospitalized	2
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0252
Subagent Choice	
Outbreak type	Household
Human cases	8
Hospitalized	2
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0263
Subagent Choice	
Outbreak type	General
Human cases	18
Hospitalized	6
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0323
Subagent Choice	
Outbreak type	Household
Human cases	9
Hospitalized	4
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0331
Subagent Choice	
Outbreak type	General
Human cases	4
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0332
Subagent Choice	
Outbreak type	General
Human cases	17
Hospitalized	7
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Analytical epidemiological evidence
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0333
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0278
Subagent Choice	
Outbreak type	General
Human cases	41
Hospitalized	1
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0325
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Fish and fish products
More Foodstuff	fish coated in egg and breadcrumbs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0327
Subagent Choice	
Outbreak type	General
Human cases	21
Hospitalized	3
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Analytical epidemiological evidence
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0337
Subagent Choice	
Outbreak type	Household
Human cases	8
Hospitalized	3
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0386
Subagent Choice	
Outbreak type	General
Human cases	44
Hospitalized	4
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0400
Subagent Choice	
Outbreak type	Household
Human cases	7
Hospitalized	1
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0401
Subagent Choice	
Outbreak type	General
Human cases	10
Hospitalized	1
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff	Broiler meat and raw eggs
Type of evidence	Laboratory detection in human cases, Analytical epidemiological evidence
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0403
Subagent Choice	
Outbreak type	General
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0338
Subagent Choice	
Outbreak type	General
Human cases	12
Hospitalized	2
Deaths	0
Foodstuff implicated	Broiler meat (Gallus gallus) and products thereof
More Foodstuff	Broiler meat and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Storage time/temperature abuse
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0371
Subagent Choice	
Outbreak type	Household
Human cases	18
Hospitalized	0
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0375
Subagent Choice	
Outbreak type	General
Human cases	18
Hospitalized	3
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0389
Subagent Choice	
Outbreak type	Household
Human cases	5
Hospitalized	4
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0394
Subagent Choice	
Outbreak type	Household
Human cases	5
Hospitalized	4
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0406
Subagent Choice	
Outbreak type	General
Human cases	12
Hospitalized	3
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0416
Subagent Choice	
Outbreak type	General
Human cases	12
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0423
Subagent Choice	
Outbreak type	General
Human cases	18
Hospitalized	0
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0425
Subagent Choice	
Outbreak type	Household
Human cases	7
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0429
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0472
Subagent Choice	
Outbreak type	General
Human cases	25
Hospitalized	7
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0508
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0444
Subagent Choice	
Outbreak type	General
Human cases	16
Hospitalized	1
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0484
Subagent Choice	
Outbreak type	General
Human cases	41
Hospitalized	6
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0433
Subagent Choice	
Outbreak type	General
Human cases	20
Hospitalized	2
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unknown
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0140
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0488
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Dairy products (other than cheeses)
More Foodstuff	Ice cream
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0194
Subagent Choice	
Outbreak type	General
Human cases	9
Hospitalized	4
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0229
Subagent Choice	
Outbreak type	Household
Human cases	5
Hospitalized	4
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0240
Subagent Choice	
Outbreak type	General
Human cases	41
Hospitalized	1
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0397
Subagent Choice	
Outbreak type	Household
Human cases	6
Hospitalized	3
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0398
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	1
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0409
Subagent Choice	
Outbreak type	General
Human cases	17
Hospitalized	12
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig
Type of evidence	Laboratory detection in human cases, Analytical epidemiological evidence
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0354
Subagent Choice	
Outbreak type	Household
Human cases	6
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0249
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0349
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	unknown
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Camp, picnic
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0261
Subagent Choice	
Outbreak type	Household
Human cases	4
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0299
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Turkey meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient, Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0310
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	1
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0347
Subagent Choice	
Outbreak type	Household
Human cases	4
Hospitalized	4
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0402
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	unknown
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0357
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	0
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0556
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	0
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products
Type of evidence	Laboratory detection in human cases, Analytical epidemiological evidence
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0353
Subagent Choice	
Outbreak type	General
Human cases	3
Hospitalized	0
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containig pasteurised dairy products and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0146
Subagent Choice	
Outbreak type	Household
Human cases	8
Hospitalized	3
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff	Raw meat and raw eggs
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0419
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Laboratory detection in implicated food
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0438
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0486
Subagent Choice	
Outbreak type	General
Human cases	7
Hospitalized	2
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unprocessed contaminated ingredient
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0262
Subagent Choice	
Outbreak type	General
Human cases	19
Hospitalized	1
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products
Type of evidence	Laboratory detection in human cases, Analytical epidemiological evidence
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0084
Subagent Choice	
Outbreak type	Household
Human cases	9
Hospitalized	5
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	Fine bakery product containing pasteurized dairy products and raw eggs
Type of evidence	Laboratory detection in human cases, Analytical epidemiological evidence
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

S. Enteritidis

	Value
Code	0463
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Typhimurium

	Value
Code	0248
Subagent Choice	Salmonella; S. Enteritidis; 1, Salmonella; S. group D; S. group D1
Outbreak type	General
Human cases	34
Hospitalized	8
Deaths	0
Foodstuff implicated	Bovine meat and products thereof
More Foodstuff	Bovine meat and raw eggs
Type of evidence	Laboratory detection in human cases, Analytical epidemiological evidence
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. Typhimurium

	Value
Code	0257
Subagent Choice	
Outbreak type	General
Human cases	9
Hospitalized	2
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	Mixed red meat with raw eggs
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Unknown
Contributory factors	Cross-contamination
Outbreaks	1
Comment	

S. group D

	Value
Code	0195
Subagent Choice	
Outbreak type	Household
Human cases	3
Hospitalized	3
Deaths	0
Foodstuff implicated	Eggs and egg products
More Foodstuff	
Type of evidence	Analytical epidemiological evidence, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Inadequate heat treatment
Outbreaks	1
Comment	

S. aureus

	Value
Code	0358
Subagent Choice	Bacillus; B. cereus
Outbreak type	General
Human cases	17
Hospitalized	0
Deaths	0
Foodstuff implicated	Mixed or buffet meals
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

S. aureus

	Value
Code	0346
Subagent Choice	
Outbreak type	General
Human cases	35
Hospitalized	2
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Cross-contamination
Outbreaks	1
Comment	

S. aureus

	Value
Code	0211
Subagent Choice	
Outbreak type	General
Human cases	5
Hospitalized	5
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Analytical epidemiological evidence
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

S. aureus

	Value
Code	0071
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	2
Deaths	0
Foodstuff implicated	Other foods
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Analytical epidemiological evidence
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Unknown

	Value
Code	0021
Outbreak type	General
Human cases	35
Hospitalized	0
Deaths	0
Foodstuff implicated	Other or mixed red meat and products thereof
More Foodstuff	
Type of evidence	Analytical epidemiological evidence
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	